Swedish Fiscal Policy

Report of the Swedish Fiscal Policy Council
2011

The Swedish Fiscal Policy Council is a government agency. Its remit is to conduct an independent evaluation of the Government's fiscal policy. The Council fulfils its tasks primarily through the publication of the report **Swedish Fiscal Policy**, which is presented to the Government once a year. The report is used by the Riksdag as a basis for its evaluation of the Government's policy. The Council also arranges conferences. In the series **Studier i finanspolitik** (**Studies in fiscal policy**), it publishes in-depth studies of different aspects of fiscal policy.

Foreword to the English translation

The 2011 report of the Swedish Fiscal Policy Council was published in Swedish on 16 May 2011. Barbara Burton translated the report into English. Lars Calmfors, chairman of the Council to 30 June 2011, led the preparation of the English version with the participation of Torben Andersen, Michael Bergman, Laura Hartman, Erik Höglin, Lars Jonung, Georg Marthin, Pär Nyman, Eva Oscarsson, Charlotte Sandberg and Helena Svaleryd.

Lars Calmfors was appointed the first chairman of the Swedish Fiscal Policy Council when it was established in 2007. During his tenure (2007-2011), four annual reports have been published. Under his skilled leadership, the Council has become an independent and respected institution in Swedish public life. He has left a solid foundation for the Council to build upon.

Stockholm, 1 September 2011
Lars Jonung
Chairman of the Council

Foreword

The Fiscal Policy Council has the Government's remit to evaluate fiscal and other economic policy. The Council is also to review the Government's forecasts and their analytical basis and the clarity of the proposals in budget bills and their stated justifications.

The Council is composed of the eight members who have signed this foreword. Since the previous report, Martin Flodén has left the Council (2010-06-30) and Lars Jonung has been appointed a new member (2010-07-01). The Council is assisted by a secretariat consisting of Eva Oscarsson and Erik Höglin (Senior Economists), Georg Marthin (Economist) and Charlotte Sandberg (Head of Administration). Pär Nyman (Economist) has also participated in the final editing of the report.

This is the Council's fourth report. Six of the eight members support the report in its entirety. Two members have expressed dissenting opinions on individual points. Lars Tobisson does not share the majority opinion that one alternative for strengthening

macroprudential supervision and regulation is to give the Riksbank the main responsibility for this. Erik Åsbrink expressed a dissenting opinion on the new vocational programmes' failure to provide eligibility for higher education. The dissenting opinions are reported in reservations in accordance with the Council's instruction that stipulates that "possible dissenting opinions by members are to be presented in the report".

The Council in its work on this year's report held nine recorded meetings. In connection with these meetings, seminars in various subject areas were arranged both in cooperation with the National Institute of Economic Research (NIER) and by the Council itself. A hearing was held at the Ministry of Finance (11/02/2011). The analytical work was completed on April 27, 2011.

The Council has commissioned three background papers, all of which are published in the Council's publication series *Studier i finanspolitik (Studies in Fiscal Policy):*

1. Helge Bennmarker, Lars Calmfors and Anna Larsson – Wage Formation and the Swedish Labour Market Reforms 2007-2009.

2. Michael Bergman – Tidsbestämning av svensk konjunktur (Swedish business cycle dating) 1970-2010.

3. Peter Fredriksson and Jonas Vlachos – Reformer och resultat: Kommer regeringens utbildningsreformer att ha någon betydelse? (Reforms and results: will the Government's education reforms have any impact?).

The Swedish National Financial Management Authority has helped us with calculations of how the scope for reform in the central government budget emerges (Håkan Jönsson, Matts Karlson, Svante Hellman, Krister Jensevik and Margareta Nöjd). We have also received help with calculations and comments from Clas Olsson and Agneta Rönn from the inquiry Att främja en stabil kommunal verksamhet över konjunkturcykeln (Supporting stable local government operations over the business cycle).

In the course of our work, we have received valuable comments from Tom Andersson at the Riksbank, Lars Frisell at the Swedish Financial Supervisory Authority, Camilo von Greiff at SNS, Thomas Hagberg at the Swedish National Audit Office, Lars Hörngren at the Swedish National Debt Office, Ann-Sofie Kolm at Stockholm

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Principal conclusions of the report

The report focuses on the public finances and the labour market. It also discusses economic forecasts, financial stability, taxes and education.

- Sweden's strong public finances are due both to the large surpluses before the crisis and to remarkably little deterioration during the crisis.

- The Government in its follow-up of the surplus target has begun to accord greater weight to estimates of *structural net lending*, which show the budget outcome in a normal cyclical situation. The estimates have major shortcomings and need to be improved.

- Estimates of the *scope for reform* plays a key role in the design of fiscal policy. The Government should better explain how this scope arises. It would improve the possibilities for voters to gauge the tax cuts and expenditure increases that the scope for reform is used for against how they were financed.

- It may be a difficult challenge for the political system, in a period of considerable optimism, to abstain from excessively costly reforms. Fiscal discipline may be threatened if both large tax cuts and large expenditure increases are implemented.

- If the Government goes ahead with the promised tax cuts, the *expenditure ceiling* should be revised downwards. If the ceiling is not lowered, large tax cuts should not be implemented.

- The Government has not remedied the shortcomings in reporting *public investments*. These should be reported to the Riksdag, either in a special Government Communication each year or in a regular chapter in the budget bills.

- The Government allocates too few resources to fiscal sustainability calculations. Without proper intergenerational analyses, it is impossible to assess how the surplus target and various tax and expenditure changes affect the distribution between generations.

- A stronger framework for *financial stability* is needed. The division of responsibility between different public bodies is currently

blurred. Either *the Riksbank* should be given clearer responsibility or a *fiscal stability council* should be established.

- The Government's assessment of future labour market developments is not unreasonable. But there is considerable uncertainty.

- The Government is now more transparent about the wage-dampening effects of the earned income tax credit. Further steps in the earned income tax credit would probably have positive employment effects, but the arguments for higher credits become weaker as larger credits are introduced.

- Unemployment insurance should be reformed. If the current voluntary insurance is retained, the differentiated employee contributions should be abolished. In principle a strong argument can be made for *mandatory* unemployment insurance.

- The tax system has increasingly departed from the fundamental principles behind the major tax reform of 1990/91. Some changes have been justified, but not others. Too many separate tax measures lead to arbitrariness. There should be a complete overhaul of the tax system.

- The differentiated VAT currently applying to various goods and services is not justified on the grounds of social efficiency or income distribution. The arguments for a reduced VAT on restaurants and catering services are weak. Instead a single VAT rate should be introduced.

- Abolishing the tax surcharge on high incomes would provide greater social efficiency gains than an increase in the income threshold for the state tax and another step in the earned income tax credit. It would lead to more hours worked and strengthen the incentives to get a higher education.

- The Government's education reforms will probably not suffice. The Government has correctly identified the challenges but has too much faith in the effect of norm-building signals. More needs to be done to achieve the education policy objectives.

Summary

Despite a deep economic downturn, there were only small budget deficits in Sweden. Now a strong economic upturn with increasing employment is under way. The public finances are improving rapidly. The Government has revised its estimate of the scope for tax reductions and expenditure increases upwards. There are good grounds for this. At the same time, weaknesses in the economic policy decision-making process and the institutional framework may lead to increased tensions over time and thus threaten long-term stability. Such warnings may be perceived as irrelevant in the current situation. But events in other countries demonstrate the importance of identifying and preventing potential problems in good times.

As in previous years, the main emphasis of the report is on the public finances and the labour market. The report also discusses identification of business cycles, financial stability, taxes and education.

Strong public finances in Sweden

The financial crisis that started in the United States in 2007 culminated in a deep international recession. The combination of a financial crisis and a deep economic downturn put great pressure on public finances internationally. Budget deficits climbed to around ten per cent of GDP in many countries such as the United Kingdom and the United States, which were forced to rescue their financial sectors with extensive government support and experienced sharply reduced tax revenues and increased expenditures. Large increases in the budget deficits in some euro area countries precipitated sovereign debt crises.

Sweden weathered the economic crisis with remarkably good public finances. Budget deficits were only 0.9 and 0.3 per cent of GDP in 2009 and 2010 respectively. The small deficits were largely due to the stronger public finances in Sweden than in most other countries at the outset of the crisis. But the deterioration in Swedish public finances during the economic downturn was also surprisingly small. GDP fell more in Sweden than in the OECD as a whole, but government net lending fell much less.

One of the main reasons why the public finances did not weaken more was the relatively small decline in employment compared with the substantial fall in GDP. This maintained tax revenue. Reduced state funding of unemployment insurance and lower benefit levels helped prevent unemployment expenditure from increasing sharply when employment fell. At the same time, the sickness insurance reforms led to a reduction in the number of benefit recipients in sickness insurance and early retirement. The labour market reforms implemented probably also contributed to preventing the fall in employment.

Better estimates of structural net lending are needed

The most important instrument for steering fiscal policy is the *surplus target*. Under this target, general government net lending is to be one per cent over a business cycle. As it is difficult to determine the precise length of a business cycle, the Government uses a number of indicators (five in all) to evaluate whether the target has been achieved: both backward- and forward-looking averages are considered and adjustments are made to take the cyclical situation into account. We are – as we were previously – critical of the large number of indicators that provide opportunities for arbitrary interpretations. We instead recommend that only two indicators be used: a backward-looking ten-year average (of actual net lending) and a partially forward-looking ten-year average (of actual net lending for the past six years and forecast net lending for the current and the coming three years).

The indicator that the Government appears to attach the greatest importance to is *structural net lending*. It is an estimate of what the fiscal balance would be in a balanced state of the business cycle. The estimate adjusts actual net lending for the *automatic stabilisers*, i.e. the fluctuations in tax revenue and public expenditure that automatically occur (in the absence of discretionary measures) in the course of cyclical swings. The cyclical situation is measured by the *GDP gap*, which shows how much actual GDP deviates from potential GDP.

In the 2011 Budget Bill and the 2011 Spring Fiscal Policy Bill, the Government bases fiscal policy on a forecast for structural net lending. There are a number of problems with this indicator.

- The estimates of the GDP gap on which the estimates of structural net lending are based are highly uncertain.

- With the methods used by the Ministry of Finance, the average GDP gap is negative, i.e. GDP is below its potential level. *Asymmetric* GDP gaps like this are justified if potential GDP is defined as the GDP level that is compatible with a constant rate of inflation. Since inflation is more flexible upwards than downwards, the Riksbank (the Swedish central bank) must pursue a monetary policy that results in a negative average GDP gap if inflation is to be held stable around the inflation target. But a GDP gap defined in this way is not appropriate for estimating a structural net lending that will act as an indicator of whether the surplus target is met, as an average measure will be needed in that case.

- A third problem concerns the Ministry of Finance estimate of the sensitivity of net lending to changes in the GDP gap. The Ministry (and OECD) estimate does not take into account the *balanced budget requirement for local governments*, under which local governments are not allowed to have budget deficits. In the event of a sharp and/or protracted fall in GDP, local government expenditures must be brought in line with lower tax revenues. This is not taken into consideration in the calculations. Consequently, both the automatic stabilisers and structural net lending are overestimated in deep economic downturns.

Relying as heavily as the Government does on structural net lending as an indicator of whether the surplus target has been met is ill-advised. There are in any case grounds for a review of how the estimates are made. Methods involving a negative average GDP gap should not be used.

In the 2011 Budget Bill, the Government set the structural net lending target for 2014 at *two* per cent of GDP. This created uncertainty about whether the surplus target had been raised. Furthermore, the Government did not offer a satisfactory explanation of the extent to which the safety margin of one per cent of GDP required for structural net lending in relation to the surplus target depended on asymmetric GDP gaps (which can be avoided with a more appropriate method of calculation), general uncertainty about future developments (which instead should be reflected in the

level of the surplus target) or uncertainty in the estimate of structural net lending. The same flaw is repeated in the 2011 Spring Fiscal Policy Bill. It states that there is now less need for a safety margin but it does not specify how much less.

The Government has appointed an inquiry on the balanced budget requirement for local governments. One of its tasks is to analyse giving local governments more freedom to vary their budget outcomes from year to year. Another task is to investigate the possibility of establishing a *local government stabilisation fund* where local governments make deposits in economic upturns that can subsequently be used in economic downturns. We are surprised that the inquiry was *not* also asked to investigate a rules system that would allow *central government grants* to local government to vary over the business cycle. This appears to be the simplest system to introduce since it is effective and poses no risk of conflict with local self-government.

Explaining the scope for reform more clearly

The *scope for reform* plays a key role in fiscal policy. It is of great value that the fiscal policy debate be based on an explicit estimate of "what we can afford". In the same vein, it is remarkable that the budget bills do not provide a brief definition of the concept scope for reform, even though the meaning can be inferred from the discussion as a whole. The scope for reform can be defined as:

The total sum of permanent tax reductions and expenditure increases that can be actively decided by the Riksdag (the Swedish Parliament) and that are compatible with the target that general government net lending should show a surplus of one per cent of GDP over a business cycle.

The term 'scope for reform' is actually misleading, as some reforms do not cost anything or even strengthen the budget (as did the earlier reforms of unemployment and sickness insurance). Reforms costing more than the scope for reform allows may also be made if they are financed by tax increases (for expenditure increases) or by expenditure reductions (for tax cuts). *Fiscal space* is a better term than scope for reform. But we use the term scope for reform below so

that readers will recognise it, even though the term should be replaced.

The Budget Bills do not provide a clear explanation of why there normally is scope for reform. The explanation is as follows. As most taxes are proportional, tax revenue automatically grows at approximately the same pace as GDP. But without active decisions, public expenditure grows more slowly than GDP. This is because only some expenditures are tied to wages (which in the long run grow at the same pace as GDP). Other expenditures are only partly indexed to wages or are indexed to prices (which increase more slowly than GDP in current prices). Some expenditures are not indexed at all and therefore fall in real terms when prices rise.

Without active decisions on new 'reforms', net lending would gradually increase relative to the surplus target. Some of the scope for reform, however, originates when 'old reforms', in the absence of new decisions, are diluted when some expenditures fall in real terms and others do not follow wage developments.

A political decision-making process, based on an ever emerging scope for reform, is *politically attractive*. This gives the Government the opportunity each year to present a number of 'reforms', even though these only maintain the value of previous transfer payments. Decisions that only involve maintaining previous reforms may in other words be presented as *new* reforms. If the Government wishes to cut taxes or increase expenditures in new areas, it can be done without *active* decisions to weaken old reforms.

The Government should clearly report how the scope for reform comes about. It should be broken down into contributions from reductions in the real value of public expenditures that are not indexed to prices, from other expenditures that do not follow GDP, from demographic changes, from changes in the number of benefit recipients in different social insurance systems as a result of various changes in the rules and from deviations from the surplus target motivated by the cyclical situation. A report like this would contribute to a more informed debate. It would make it possible for voters to weigh proposed tax cuts and expenditure increases against the financing.

The decision-making system based on estimates of the scope for reform is well suited to gradually reduce taxes and public expenditures as a percentage of GDP. It has appeared natural to

divide the scope for reform between tax reductions and expenditure increases. Since the scope for reform emerges when public expenditure, in the absence of active decisions, does not follow GDP, the result is a gradual decline in taxes and expenditures as proportions of GDP.

But a policy like this can in the long run lead to a build-up of *tensions* that jeopardise budget discipline. A gradual dilution of different transfer payments in relation to the wage and price levels may prove to be politically unsustainable. There may be pressure to restore the replacement rate in various transfer systems to earlier levels. This pressure may be difficult to resist when some of the previously estimated room for reform is used for tax cuts.

Risk of exhausting the scope for reform

In the 2011 Budget Bill, the scope for reform for 2012-2014 was preliminarily estimated at SEK 48 billion (in the sense of a permanent annual cost increase until 2014). For 2012, the preliminary scope for reform given was SEK 15 billion. In the 2011 Spring Fiscal Policy Bill, no new number was specified, but the scope for reform is now expected to be greater than that specified in the 2011 Budget Bill.

When the Spring Fiscal Policy Bill was presented, the Government also presented a number of preliminary tax proposals for 2012 in a special tax memorandum. The most important are a fifth step in the earned income tax credit, a higher threshold for the state income tax, an increase in the basic allowance for people over 65 and an increase in the excise taxes on tobacco and alcohol. The net cost of the tax proposals is about SEK 16 billion. The 2011 Spring Fiscal Policy Bill also raises the possibility of reducing the VAT on restaurant and catering services already in 2012. In addition to these proposals, some expenditure increases are likely. All in all, this indicates that the Government has substantially revised upwards its estimation of the scope for reform for next year.

It is unclear why the Government already in the 2011 Spring Fiscal Policy Bill so explicitly specifies proposals that it intends first to present in the 2012 Budget Bill. The detailed description of planned tax changes has the character of commitments that in practice are likely to oblige the Government to implement the

proposals in 2012. This reduces the possibilities of taking new information into consideration during the work on the budget. It is difficult to see the merit in this.

The more positive estimate of the scope for reform in the 2011 Spring Fiscal Policy Bill than in the 2011 Budget Bill is largely due to a more optimistic view of the effects of the labour market reforms. The Government's opinion is not unreasonable. At the same time, there is considerable uncertainty. There are therefore strong arguments for not using all of the estimated fiscal space before there are clear indications that the labour market has actually improved in line with the Government's expectations.

We share the Government's opinion that fiscal stimulus measures are not needed at present. In our view, there is instead a risk that reforms of the magnitude presented by the Government in the 2011 Spring Fiscal Policy Bill may contribute to too strong an economic upturn. To avoid an overheating, it may prove desirable, with the Government's current measure of structural net lending, to let it increase to substantially more than two per cent of GDP until 2014. It may be a difficult challenge for the political system, in a period of considerable optimism, to refrain from excessively large and costly reforms.

The expenditure ceiling may be too weak

The expenditure ceiling is a core component of the fiscal framework. The ceiling is decided for (at least) three years ahead and refers to all central government expenditures except interest payments. The ceiling set includes a *budget margin*, which provides a safety margin to expenditures already adopted and announced. The margin is intended to provide space for both newly decided and automatic expenditure increases that result from a weaker-than-expected economic cycle as well as for other negative 'surprises'.

According to the Government's guidelines, the budget margin should be 1 per cent of the expenditures subject to the ceiling for the current year (year *t*), 1.5 per cent for year *t+1*, 2 per cent for year *t+2* and 3 per cent for year *t+3*. The margins over the next few years are substantially higher than that. The margin in 2012 is 7.4 per cent and then slowly falls to 5.6 per cent by 2014 (decided) and 5.3 per cent in 2015 (announced).

Because of the high budget margins, the expenditure ceiling will be less binding than before. This reflects a change in the Government's earlier view of the expenditure ceiling as a support for the surplus target. The Government's new approach seems instead to be that the surplus target is to be a support for the expenditure ceiling. This change is risky, as the expenditure ceiling is a more binding restriction than the surplus target: under the Budget Act, the Government is obliged to propose measures for keeping expenditures under the ceiling, should there be a threat that it will be exceeded.

The Government's budget policy discipline currently enjoys a high level of credibility. But it should not be assumed that the current situation will necessarily continue. It is well known that conflicts between desired tax cuts and desired expenditure increases can be particularly difficult to resist for coalition and minority governments.

The budget margin for 2014 announced in the Spring Fiscal Policy Bill is almost SEK 60 billion. The Government has announced tax cuts for 2012 of more than SEK 20 billion (if the announced tax reduction on restaurant and catering services is included). Assume that further tax reductions of SEK 10-20 billion are carried out during the current mandate. Moreover, if the entire budget margin were to be used, there would be a budget weakening of SEK 90-100 billion. This sharply exceeds the estimated scope for reform of 'somewhat more' than SEK 48 billion.

The above figures are not a forecast. But there is a risk that *both* large tax cuts *and* large expenditure increases may be carried out. Even though there is currently a strong political will to avoid this, and therefore such a development appears less probable, systems should be constructed to minimise this risk.

We do not take any position on the balance to be struck between taxes and public expenditures. But we think there are strong arguments for a downward revision of the expenditure ceiling if the Government carries out the announced tax cuts. If the Government wishes to maintain the current budget margin, the large tax cuts promised should not be implemented.

One argument for large budget margins is that they provide room for substantial expenditure increases in the event that the economic cycle develops less favourably than expected. A better way of handling this is, as we previously have proposed, to distinguish

between a *cyclical margin* (that can only be used for cyclically justified expenditure increases) and a *planning margin* (for other expenditure increases). The latter could then be set much narrower than the current budget margin. An alternative would be instead to introduce a well-defined *escape clause* that allows the expenditure ceiling to be exceeded in extreme situations. In this alternative, the budget margin can also be reduced. We recommend implementing one of these proposals. An economic upturn presents an excellent opportunity for such a change.

Inadequate reporting of public investment

A frequent objection to the surplus target is that the Government should not continue to reduce its debt when it has now come down to a low level. This objection is often based on a misunderstanding.

At the end of 2010, the public sector had a *net financial worth* of more than 20 per cent of GDP. With positive net lending, net financial worth in crowns will keep increasing. But this is not true of net worth as a percentage of GDP. If GDP in current prices increases at an average of five per cent a year (two per cent inflation and three per cent real growth), net financial worth, given an average net lending of one per cent of GDP, will fluctuate just around the current 20 per cent of GDP. The fiscal surpluses are just sufficient to offset the decrease in net financial worth as a percentage of GDP that would otherwise occur when GDP grows.

The Government has justified the sale of state shares by arguing that it wants to reduce the central government debt. But from the standpoint of public finances, this is hardly necessary as the return to its shareholdings is presumably higher than the reduction in the interest on government debt that the revenue from privatisations would be used for.

A further issue is whether the current surplus target, which is based on *net* lending and not on total savings (including investment in capital stock), leads to the neglect of public investments. Existing research does not provide any clear answer here. We have, however, previously pointed to the risk that inadequate reporting of public sector investment and real capital stock in the budget bills provides the Riksdag with a poor basis for decision-making. In the 2010 Spring Fiscal Policy Bill, the Government announced that it intended

to improve this reporting and to include a report of this work in the 2011 Spring Fiscal Policy Bill. But this bill does not contain any information on this matter. We are critical of this. Significant improvements in reporting public sector investment should be possible with little analytical effort.

One way of ensuring that development of the public sector capital stock gets sufficient attention could be via an annual special report from the Government to the Riksdag. At the very least, there should be a special chapter devoted to public investment in either the Spring Fiscal Policy Bill or the Budget Bill.

Business cycle analysis should be improved

There have been few systematic attempts in Sweden to establish more exactly the anatomy of business cycles. A more precise dating of business cycles would be valuable not least if the target that public finances are to show a surplus of one per cent of GDP *over a business cycle* is to be taken seriously. We do not think that more indicators of whether the surplus target has been met should be added to those which already exist (and which are too numerous). But an analysis of net lending during different business cycles can help in evaluating the current indicators.

In this report we apply different methods to date business cycles in Sweden. The dating establishes the turning points in the business cycle, i.e. when the economy shifts from an economic upturn to a downturn and vice versa. The length of a business cycle can be measured either from peak to peak or from trough to trough. The different methods yield quite similar results. All indicate, for example, that the business cycle turned upwards again in one of the first three quarters of 2009. Our analysis also indicates that economic upturns are normally longer than economic downturns.

General government net lending was 1.4 per cent of GDP over the latest complete business cycle if measured from peak to peak (2000-2008) and 1.2 per cent of GDP if measured from trough to trough (2003-2009). During this cycle, the surplus target was thus exceeded. This analysis provides a different result than the backward-looking ten-year average used by the Government, which indicates a net lending of 0.8 per cent of GDP. The discrepancy indicates the importance of having a clear picture of the cyclical situation.

Too few resources devoted to fiscal sustainability analyses

The 2011 Spring Fiscal Policy Bill (like earlier Spring Fiscal Policy Bills) contains estimates of long-term fiscal sustainability. The aim is to judge if it is possible at current tax rates to finance future public commitments when demographic conditions change.

The conclusion in the 2011 Spring Fiscal Policy Bill's base scenario is that the public sector, assuming unchanged rules, will have primary surpluses (the difference between revenue and expenditure excluding interest) for the rest of the century. The surpluses correspond to a permanent, annual surplus of 3.4 per cent of GDP. Sweden thus finds itself in a unique position internationally. Most other economically developed countries face significant fiscal sustainability problems that will force large budget cuts. In Sweden – according to the sustainability calculations – there will instead be room for tax cuts and/or expenditure increases in the future.

The sustainability calculations in the 2011 Spring Fiscal Policy Bill differ radically from previous years' estimates. In the 2010 Spring Fiscal Policy Bill, fiscal policy was expected to be exactly sustainable. The main reason for the change in the sustainability assessment is that price growth for public consumption has been adjusted downwards. This is not the first time that this assessment has been changed. The frequent and inadequately explained changes in such a significant component of the sustainability calculations are a problem. In the 2011 Spring Fiscal Policy Bill, it is impossible to infer exactly what assumptions are behind the change. The inadequate reporting on this point is unsatisfactory.

As in previous Spring Fiscal Policy Bills, there are a number of alternative scenarios analysed in the 2011 Spring Fiscal Policy Bill. These contribute valuable information about how different assumptions affect the analysis. The main conclusion is that the long-term sustainability of the public finances depends on high employment and is very sensitive to the demand for welfare services of higher quality.

According to the Government, achieving an equal distribution of resources between generations is an important argument for the surplus target. But the Government has not defined what it means by equity between successive generations.

We have in all our reports requested clearer analyses of how public finances affect the distribution between different generations –*generational accounts*. We once more wish to underline the need for such analyses. Without generational analyses, it is impossible to assess the surplus target's impact on intergenerational distribution. Nor is it possible to judge what the consequences of various proposals for tax changes and expenditure increases will be for different generations.

Given the limited resources allocated by the Ministry of Finance for sustainability calculations, the quality of these calculations is high. But these resources are too few. Such an important part of the fiscal estimates should be given higher priority.

A new framework for financial stability

The global financial crisis has yielded a new fundamental insight: *financial stability* should be a more prominent economic policy objective. The serious underestimation by decision-makers in finance ministries and central banks of the systemic risks that developed in the financial sector contributed to the international crisis. The cost of support provided to the financial system has contributed to the sharp deterioration in the public finances in many countries.

Most economically developed countries have now strengthened, or are in the process of strengthening, their *macroprudential frameworks*. Even though the impact on the financial system in Sweden was much milder than in many other countries, there are strong arguments for paying attention to the international lessons about macroprudential supervision.

Financial stability is not a new objective. Three public bodies are currently responsible for financial stability in Sweden: the Riksbank, the Swedish Financial Supervisory Authority and the Ministry of Finance. They are all equipped with different tools to fulfil this objective. Financial stability is one of the Riksbank's objectives, even though the objective has not been made operational. The Financial Supervisory Authority is responsible for traditional microprudential supervision and regulation. The Ministry of Finance is responsible for legislation and tax issues. The Riksbank, the Financial Supervisory Authority, the Ministry of Finance and the Swedish National Debt Office cooperate on matters that concern financial imbalances. There

is thus already a system in place for managing threats to financial stability.

But the existing system has one major weakness: there is no body with the main responsibility for monitoring the risks of financial imbalances and propose measures when the systemic risks approach a critical level. The division of responsibility between the different bodies is blurred. As macroprudential oversight is not a main task for any of them, there is a risk that none of them will sound the alarm in time.

The framework for financial stability needs to be strengthened. We see two alternatives. The first is to give the *Riksbank* greater responsibility for macroprudential regulation, with an expanded arsenal of instruments, if necessary. The other is to establish a new public authority, a *financial stability council*, with the remit of identifying financial systemic risks and proposing measures.

We see good arguments for both solutions. The arguments for giving the Riksbank main responsibility for financial stability are as follows: Its traditional monetary policy instruments provide it with effective tools for managing the financial markets. Its contact with banks and financial companies is direct and ongoing. It already has a responsibility for financial stability. It has the best analytical capacity with some 70 economists working on the financial sector. It publishes a report on financial stability twice a year.

But there are also objections to giving the Riksbank a broader remit. The Riksbank already has considerable power. There can also be a conflict between the price stability objective and the financial stability objective. The Riksbank's independence currently to a large extent rests on the fact that it has *one* clear main objective: low inflation. Should the Riksbank be given more responsibility for financial stability, it would be more difficult to evaluate how well it achieves its objectives.

The other alternative is to establish a financial stability council with responsibility for macroprudential supervision. In that case, such a council should have the remit to analyse changes in the domestic and international financial systems that might threaten financial stability in the Swedish economy. The council should be obliged to publish its analyses regularly, possibly twice a year. It could address its recommendations to the Riksbank, the Financial Supervisory Authority and the Ministry of Finance as well as to other

public authorities and to banks and financial companies. The recommendations would not be binding. In our opinion, a stability council should not have any policy tools of its own.

There are a number of advantages to this solution. The body created would focus solely on financial systemic risks. A stability council could be more active in warning of financial dangers and more freely propose measures than the Riksbank could. Such a council would provide one more voice in the economic policy debate. Since it would not have any formal regulatory instruments, it would fit into the existing structure well without creating overlapping jurisdictions. A financial stability council could also develop contacts with corresponding institutions recently established in other countries.

The primary objection to a new public authority is that its recommendations do not have to be followed by those institutions having the means at their disposal to influence the financial markets. Not least is the risk that the Riksbank might not feel the same degree of responsibility for macroprudential issues. A financial stability council could be toothless.

We thus see two possibilities. The final choice is not crucial. What is essential here is to strengthen macroprudential supervision. The central problem is to identify risks of financial imbalances in good time. Here current international experience, as well as our own history, proves that existing institutions have lacked the capacity to react in time.

Positive labour market developments

The labour market is now recovering rapidly. In March this year, employment was already higher than before the crisis, but the employment rate was still lower. Labour force participation has held up well during the crisis and is now increasing. This causes unemployment to decline more slowly than it would have otherwise.

Deep economic downturns often have persistent adverse labour market effects. Equilibrium unemployment, the unemployment which is due to the way in which the labour market functions, normally rises. Several mechanisms may contribute to this. Matching supply and demand may be worse if sectors other than those that stagnated during the crisis expand after the crisis. The human capital

of the long-term unemployed may become obsolete, they may seem less attractive to employers and discouraged-worker effects may make job searches less effective. There is also a risk that unions in wage formation will first take their employed members' (*insiders'*) interests into account before those of the unemployed (*outsiders*). If so, wage increases in economic upturns may be so high that firms' new hiring is limited.

In our opinion, the long-term effects of the recent crisis will be relatively small. There are several reasons for this. The increase in unemployment and the decrease in employment were limited in relation to the fall in GDP. Adjustment to the cyclical situation in the recent crisis to a greater extent than in the crisis in the early 1990s was accomplished by a reduction in the average hours worked. The increase in labour force participation also reduces the risk of exclusion.

Young people were particularly hard hit by the crisis but are now enjoying rapidly rising employment. Our analysis indicates that unemployed young people have better, not worse, chances of finding a job than unemployed people in general. This is often forgotten. This is one reason why unemployment may be less of a problem for young people than for older people. But young people have a higher unemployment risk than other groups. That youth unemployment increased so much during the crisis was due more to the fact that more young people went from employment to unemployment than to young people having greater difficulty finding a new job. In the economic upturn, unemployment has declined more among young people than among other age groups. Nevertheless, youth unemployment is still high.

Unlike previous crises, employment during the downturn held up better for those born abroad than for those born in Sweden. Unemployment still increased more among the foreign born and kept on increasing in 2010. In 2010 employment also rose more slowly for the foreign born than for those born in Sweden. The employment rate for older workers rose during the crisis. This is a positive development as older workers run a particularly high risk of persistent unemployment.

An analysis of the connection between job vacancies and unemployment shows that matching worsened after the crisis in the early 1990s. When Public Employment Service job vacancy data are

used, there are some signs of another worsening in matching in recent years. When Statistics Sweden data on job vacancies are used, the picture is less clear. Our analysis of how the outflow from unemployment to employment (the job finding rate) depends on the labour market situation does not show any pattern that differs from developments before the crisis. Our overall assessment is that the crisis has not led to any significant worsening of matching in the labour market.

But there are worrying factors. Even before the crisis, there were serious problems with long-term unemployment, particularly among the foreign born, the low-skilled and older workers. The crisis made the situation for these groups of long-term unemployed even worse. The persistently weak labour market situation for people with only a pre-upper secondary education is particularly difficult. Further labour market and education measures may be required. It is also worrisome that unemployment – and long-term unemployment – are still increasing among the foreign born. This group to some extent overlaps with the low-skilled.

Greater transparency about the wage effects of the earned income tax credit

The Spring Fiscal Policy Bill makes an optimistic assessment of the long-term effects of the Government's labour market reforms. They are assumed in the long run to contribute to a 4.6 per cent increase in employment and a 1.4 percentage point decrease in unemployment.

In our opinion, the Ministry of Finance's analysis is well supported by research and competently done. One problem, however, is that entirely different methods are used to assess different effects. Then these sub-results are added together to form an overall assessment. The lack of a uniform analytical model makes it difficult to know whether the different sub-results are consistent with each other. It would have been preferable to use an integrated *general equilibrium model* to analyse all the effects. The Ministry should develop a model of this type.

We have criticised the Government for not satisfactorily explaining that the earned income tax credit and the reduction in unemployment benefits primarily affect employment by restraining wages. In the 2011 Spring Fiscal Policy Bill, the Government for the

first time explicitly states that such wage effects are likely. This is welcome and enables a more nuanced discussion.

According to the Ministry of Finance, the earned income tax credits introduced thus far will in the long run help increase the average *after-tax* wage a full 6.1 per cent, while lowering the *before-tax* wage by only 1.1 per cent (compared to what it would otherwise be). All in all, the Ministry estimates that the decrease in social contributions will increase wages (before tax) by approximately the same amount as the earned income tax credit and lower unemployment benefits reduce them. It is difficult to judge the plausibility of these estimates. Because completely different methods are used to calculate wages and estimate the employment effects, it is impossible to know whether the results are consistent. A background study for our report indicates a significant negative correlation between wages of individuals and the after-tax replacement rate that would be received in case of unemployment. This may indicate that the wage-dampening effects of the earned income tax credit and lower unemployment benefits are considerably greater than the Government's estimate.

The Government's overall assessment of the effects of the labour market policy reforms is not unreasonable. In other countries that have carried out similar reforms, unemployment has declined substantially. At the same time, there is considerable uncertainty. This is true of both the magnitude of the effects and the pace at which they ensue.

It is difficult to judge whether additional earned income tax credits have diminishing returns, i.e. if the effects will decrease as more credits are implemented. Instead, the decisive factor should be how to value the reduction of the *effective* degree of insurance (the after-tax replacement rate) offered to someone who becomes unemployed compared to the value of further reductions in unemployment. This is a political issue. But it is reasonable to think that the perceived disadvantage of further earned income tax credits, in the form of lower effective insurance in the event of unemployment, will rise as the income difference between someone who has a job and someone who is unemployed increases. The perceived value of lower unemployment is likely to decrease the lower unemployment in the long run is expected to be. The

arguments for more earned income tax credits thus quite likely become weaker as more credits are introduced.

Unemployment insurance should be reformed

With the current unemployment insurance system, we see only slight advantages in differentiated individual contributions. Under certain conditions, contributions that are differentiated according to the unemployment in each fund can create incentives for lower wage growth and thus contribute to higher employment. But these conditions are probably not met.

One idea behind the differentiation in contributions is that the members in a particular trade union should have to bear a large part of the cost should they, by high wage demands, cause an increase in unemployment among those participating in the unemployment insurance fund associated with the union. But this connection is quite weak. The differentiated contributions account for – at the margin – 1/3 of the unemployment costs in a fund at most. According to our calculations, the funds and trade unions only overlap by about 2/3. This means that the members in a union on average bear at most $(1/3) \times (2/3) = 2/9$ of the unemployment costs in their collective bargaining area. In practice, their share is considerably lower as the long-term unemployed do not get any unemployment benefits from the funds.

The current contribution differentiation is more trouble than it is worth. One major disadvantage is the membership exodus from the unemployment insurance funds. Our conclusion is that the contribution differentiation should be scrapped if the current system of voluntary unemployment insurance funds is retained.

In principle a strong argument can be made for *mandatory* unemployment insurance. A mandatory system satisfies both the paternalistic desire that everyone – even those with a lack of foresight – have an income-related insurance and the desire that everyone (even those at little risk of unemployment) should help finance the insurance. These arguments are in our opinion as strong for unemployment insurance as for other types of social insurance.

There are strong theoretical grounds to explain why decreasing benefits over the unemployment spell provide an appropriate combination of insurance and incentives to find a job quickly. But in

the current system, only a minority of the unemployed face a potential decrease of this kind. One reason is that many are not part of this income-related insurance. Another reason is that the ceiling for the unemployment insurance funds has been nominally unchanged and has therefore fallen sharply relative to the wage level, with the result that an increasing number of those employed exceed the ceiling.

The sitting cross-party inquiry into social insurance should examine all the issues discussed above: contribution differentiation, mandatory insurance, qualification requirements for unemployment benefits and the level of the ceiling in the unemployment insurance funds. Another issue that should be investigated is whether unemployment insurance can be made *cyclically dependent* as in Canada and the United States, so that it is more generous in economic downturns than in economic upturns.

There are two major arguments in favour of cyclically dependent unemployment insurance. The first is that there is a greater need for insurance in economic downturns than in economic upturns because it takes more time to find a job in downturns. The second argument is that the negative effects of generous unemployment insurance on the unemployeds' search intensity play a smaller role in a downturn, when there are few jobs, than in an upturn.

A new tax reform is needed

In 1990 and 1991 there was an extensive tax reform aimed at achieving a more just and socially more efficient tax system. By broadening the tax bases and reducing marginal taxes, the tax system became simpler and more uniform. Since this reform, there have been a number of changes made to the cohesive tax system it created. In recent years, these have included the earned income tax credit, the tax credit for household services and the Repair, Maintenance and Improvement (RMI) tax credit, lower social contributions for certain groups, a lower real estate tax, and abolition of the wealth tax.

Taxes have negative effects on household and business behaviour by driving a wedge between social and private returns. When they differ, businesses and households will not behave in a way that will maximise social efficiency. The tax structure should be designed so

that the social efficiency losses are as small as possible, and redistribution requirements are satisfied.

The Ministry of Finance should do more analysis of the effects of different tax changes on social efficiency. Today their analyses focus primarily on the employment effects and the impact on public finances.

Some tax changes since the 1990-1991 tax reform have made the tax system more socially efficient. This is particularly true of the earned income tax credit, which reduces the wedge between the social and the private return to working. Abolishing the wealth tax has also presumably been socially efficient. This tax reduced savings, led to an inefficient distribution of savings between different assets and induced a flight of capital and capital owners to other countries.

For practical reasons, only market activities can be taxed, unlike doing one's own household work and work in the unregistered sector. High taxes on services that can easily be performed by households themselves or in the unregistered sector therefore result in greater distortions than taxes on other services and goods. This is a strong argument for the tax credit for household services, which provides tax relief for the purchase of household-related services. The argument for tax relief for RMI work is weaker as it requires more professional skills. Nor are the social efficiency arguments for a lower VAT on restaurants and catering services particularly strong.

We recommend a return to a single VAT rate. The lower tax rates on such items as food, books and some tourist-related activities distort consumption in favour of these goods and services at the cost of others. Appropriately differentiated VAT rates can theoretically contribute to greater social efficiency but the current differentiation does the opposite.

The Government has used employment arguments to justify a number of tax cuts. For example, a lower restaurant VAT is assumed to lead to lower structural unemployment. It is questionable whether differentiated consumption taxes are the right instrument for addressing this problem. Tax reductions directed at weak groups (such as new start jobs) and those that affect incentives to work (such as the earned income tax credit) are more effective. Lowering social contributions for large groups such as young people is an ineffective method of increasing total employment. Young people risk displacing

other (considerably weaker) groups and the tax reductions may generally be assumed to lead to higher wages.

We are critical of the reduction made in the real estate tax on housing. It favours investment in housing and consumption of housing services at the cost of investments in other sectors, for example, the corporate sector, and other consumption.

The Government has announced in the 2011 Spring Fiscal Policy Bill an increase in the income threshold for the state tax and another step in the earned income tax credit. Even though these tax cuts increase the incentives to work, an abolition of the tax surcharge on high incomes is the income tax change most likely to provide the greatest social efficiency gains. Its abolition would lead to more hours worked and strengthen the incentives to get an education.

The tax system has become increasingly complex. In several areas, the tax changes have deviated from the fundamental principles of uniformity and neutrality on which the 1990/91 tax reform was based. Too much differentiation in the tax rates is ineffective and introduces arbitrariness. We therefore propose a cross-party inquiry to conduct a new complete overhaul of the tax system.

Education reforms need to be better targeted

The Government has announced and implemented a number of reforms in education policy. Part of the Fiscal Policy Council's remit is to assess whether developments are in line with long-term sustainable growth and employment. The education system is clearly connected to both growth and employment. This link justifies a review of this area.

The Swedish school has major problems that should be taken care of. According to international surveys, Swedish students' performance has worsened significantly since the 1990s. The education reforms' main principles are generally in line with the research. But we are not sure that the individual measures will suffice. The Government has great faith in norm-building signals. How the new regulations are in practice designed will be important for the results. Furthermore, the Government in our opinion has hardly done enough (if anything) to counter the increased segregation.

Several factors complicate the reforms. Local self-government makes it difficult for the Government to steer the school system.

Many inappropriate reforms were made in the 1990s. Teachers need time to adapt to new ways of working. It is not good to change the rules frequently. Furthermore, there is limited knowledge of what caused the results to deteriorate and of what will work.

Our conclusions about the policy pursued thus far are as follows.

- It is essential to continue to improve the possibilities for follow-up and evaluation. Some improvement has already taken place with the national tests now introduced in years 3, 6 and 9. The collection of test results has also improved. We take a positive view of the establishment of the Swedish Schools Inspectorate in 2007 and the announced evaluation unit. But there is room for improvement. In particular, the collection of statistics should be better.

- Grades should better reflect students' level of knowledge to overcome grade inflation. We see no other alternative than to introduce more national tests and make arrangements for marking them externally.

- The upper secondary school reform focuses more clearly on job skills in the vocational programmes. This is potentially a change for the better.

- We welcome the changes in the new Education Act that put independent and municipal schools on an equal footing. But the Government should consider rescinding the right of independent schools to use queue length as a selection criterion, as it probably increases social segregation. Supervision of existing independent schools, like those that wish to enter the market, should be further strengthened.

- From July 2011, the change in the Education Act providing that students should have continuous and active teacher support with structured instruction is a step in the right direction. Research indicates that more individualised instruction has contributed to the poorer results. But we doubt how effective the Government's changes will be in practice. We would like to see systematic studies of how different forms of instruction affect students' results.

- In our opinion, initiatives for teachers are insufficient to make a significant difference. There are good arguments for reconsidering the teacher certification system. We have more faith in a solution

in which skilled experienced teachers act as mentors to other, less experienced teachers or in some other manner helps schools with poor results.

- Course grades combined with goal-related grades at the upper secondary level have an element of stigmatisation. According to the research, they have resulted in more dropouts, particularly by students who are weak in general theoretical subjects. Therefore a return to subject grades should be considered.

The Government has good intentions in the education area, but concrete measures are not well targeted. We are convinced that more can and should be done. The increased funding allocated to schools is only a fraction of the amount allocated for labour market initiatives, for example: SEK 7-8 billion over a four-year period compared with SEK 70 billion a year on the earned income tax credit. Currently, there is less knowledge about what works than about what does not work. Therefore it is important already when introducing new work methods or regulations to see that they are introduced in a way that can be evaluated.

1 Fiscal policy during the crisis

Macroeconomic developments in Sweden have been turbulent in recent years. Before the crisis, there was an economic upturn with growing employment, rising inflation and large surpluses in government finances. The crisis first hit the financial markets worldwide and then the real economy in what has been labeled *the Great Recession.* The combination of a financial crisis – when many governments had to take extensive measures to save the banking system from collapse – and a sharp downturn bringing lower tax revenue and higher government expenditure put government finances under severe pressure.

In many countries, government finances were already strained before the crisis. This was particularly true in the EU, where in the early 2000s, several member states had budget deficits and government debt levels exceeding the limits of the Stability Pact. But the situation in Sweden at the start of the crisis was different. After the crisis in the early 1990s, Swedish public finances were consolidated. General government net lending was positive and government debt decreased as a percentage of GDP. In the years preceding the financial crisis, net lending exceeded two per cent of GDP. Consolidated general government gross debt was 40 per cent of GDP in 2007, a decrease of 32 percentage points since 1997. The general government net debt, which stood at 25 per cent of GDP in 1997, had changed into a net financial worth of 17 per cent of GDP in 2007.[1]

When the crisis hit, the fiscal policy situation in Sweden also changed. Section 1.1 analyses fiscal policy developments since 2007 and the Finance Ministry's forecasts. Section 1.2 discusses structural net lending and the automatic stabilisers.

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[1] See Box 1.1 for definitions of these and other concepts used in public sector reporting.

Box 1.1 Concepts used in public sector reporting

- The *general government* sector includes the central government, the old-age pension system and the local government sector (municipalities, county councils and regions). Before 2007, the premium pension system was also included.
- General government *gross financial debt* is the sector's total financial liabilities.
- *Consolidated general government gross debt* (Maastricht debt) is the debt concept used in EU fiscal rules. It is defined as the general government total debt after internal claims and liabilities in the sector have been netted out.
- General government *net financial debt* consists of the sector's gross financial debt minus the sum of its financial assets. If the financial assets exceed the financial liabilities, the sector has a positive *net financial worth*.
- General government *net lending* is the difference between the sector's revenue and expenditure as they are defined in the national accounts. The national accounts use accrual accounting, i.e. income and expenditure are booked when the underlying transactions take place. Net lending shows the change in general government net financial worth, excluding valuation changes.
- General government *primary net lending* is the difference between the sector's revenue and expenditure excluding net interest payments.
- General government *cyclically adjusted net lending* is net lending adjusted for cyclical effects.
- General government *structural net lending* is net lending adjusted for cyclical effects, certain one-off effects and extraordinary tax revenue from capital gains taxation.

1.1 The development of public finances

The financial crisis and the subsequent downturn led to a deterioration of the public finances. Figure 1.1 shows that net lending fell by SEK 120 billion between 2007 and 2010. This corresponds to about four per cent of Sweden's GDP for one year. The deterioration occurred primarily in central government net lending. It worsened by over SEK 90 billion, representing more than three quarters of the decrease in general government net lending.

There were less dramatic developments in net lending in the local government sector and the old-age pension system. This was partly due to the regulatory framework – the *balanced budget requirement* for local governments and the *brake* in the pension system – which had been established to ensure the sustainability of local government finances and the old-age pension system. To avoid any major shedding of jobs in the local governments and excessive pension reductions, extraordinary measures were taken: extra local government grants and an adjustment of the brake in the pension system (as well as extra tax reductions for older people).

Central government net lending always deteriorates when the business cycle turns downwards. This is because the *automatic stabilisers* to a large extent operate via the central government budget. When the economy enters a downturn, tax revenues decrease and expenditures on items such as unemployment benefits increase. Another reason for weaker central government finances is that labour market programmes normally expand when unemployment rises in a downturn. Variations in these programmes are often viewed as 'semi-automatic' stabilisers, since they operate according to predetermined principles. An active fiscal policy aimed at stimulating the economy also weakens central government net lending.

Figure 1.2 compares the trends in GDP and government net lending in OECD countries. The reaction of Sweden's public finances to the cyclical developments was relatively limited. In general, public finances deteriorated more in countries that experienced large decreases in GDP. There was a larger decline in GDP in Sweden than in both the OECD and the euro area as a whole. But the deterioration in Swedish public finances was still relatively small. If the average relation, shown by the line in Figure 1.2, had applied to Sweden, general government net lending would have decreased by

some eight percentage points from 2007 to 2010, which is twice as much as the actual decrease.

Public finances deteriorated dramatically in some countries. Ireland is literally off the chart with a deterioration in net lending of 32 per cent of GDP and a drop in GDP of 11 per cent. Iceland and Spain also experienced sharp falls in government net lending. In Greece and Portugal, the deterioration in net lending was *less* than the average. The current large deficits of these countries are mainly due to the substantial deficits that already existed *before* the crisis.

Sweden's public finances also did well compared with countries which – like Sweden – had public finances that were in good shape before the crisis and could avoid large costs for bank support. For example, net lending fell 3-4 percentage points more in Denmark and Finland than in Sweden, even though the decrease in GDP in these countries was about the same as in Sweden.

Sweden's net lending deficits were also small during the last crisis compared with the crisis of the 1990s. In 2008/09, GDP declined somewhat more than in 1991-1993. Nevertheless, government net lending decreased about four percentage points from 2007 to 2010, whereas it decreased almost 15 percentage points from 1990 to 1993. The significantly smaller deficits in Sweden during the last crisis compared with the 1990s crisis indicate that public finances have become less cyclically sensitive. One reason is that public expenditure now amounts to about 50 per cent of GDP, compared with about 60 per cent in the early 1990s. As a result, the automatic stabilisers have become weaker.[2] Furthermore, the 1990s crisis differed in character from the last crisis.[3] The earlier crisis was a *domestic* financial crisis. The surpluses before the crisis were primarily cyclical. Unemployment had been held at an unsustainably low level. As a result, wage costs and prices had increased more rapidly in Sweden than in other countries in the latter half of the 1980s, which had made Swedish manufacturing internationally uncompetitive. This resulted in a protracted crisis with a larger decrease in employment than in 2008/09.[4]

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[2] The relationship between public expenditure as a percentage of GDP and the automatic stabilisers is discussed in more detail in Section 1.2.2. See also Appendix 2.

[3] See Jonung et al. (2009a) and Hassler (2010).

[4] See Chapter 1 in Fiscal Policy Council (2010) and Table 5.1 in this report.

Figure 1.1 Government net lending 2007-2010, SEK billion

■ Consolidated general government sector ☒ Central government
☒ Local government sector   ☐ Old-age pension system
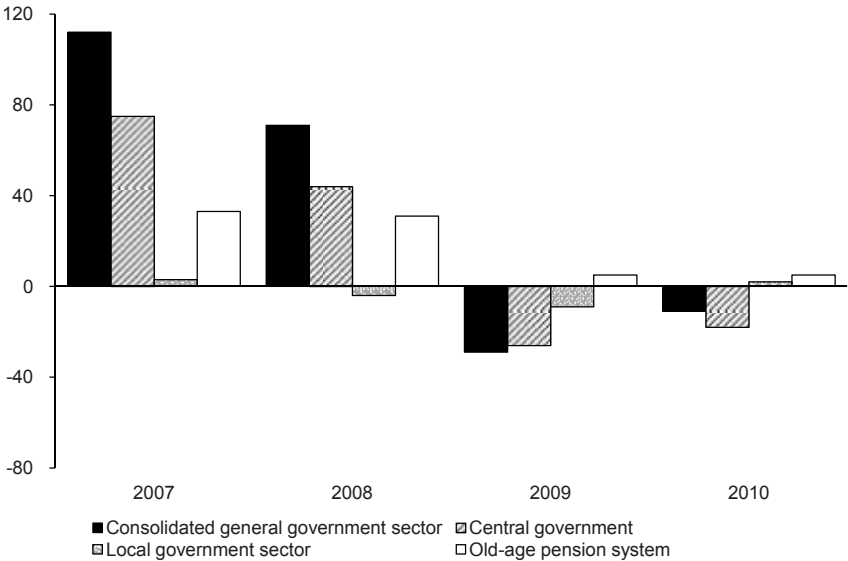
Note: 2010 is the Government's forecast.
Source: The 2011 Spring Fiscal Policy Bill.

Figure 1.2 GDP fall and deterioration of net lending
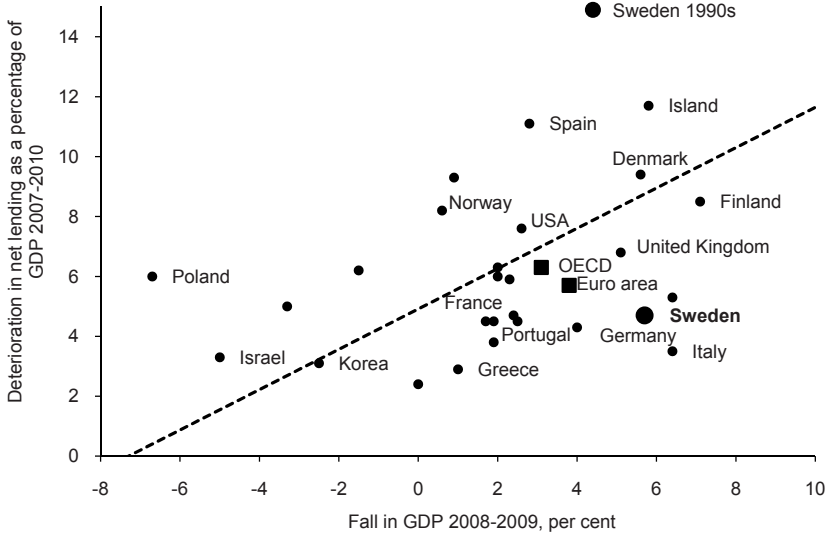
Note: 2010 is an OECD forecast. The point 'Sweden 1990s' shows the deterioration in net lending between 1990 and 1993 and the sum of GDP growth for the years 1991-1993. The dashed line shows the average relation between the deterioration in net lending and the fall in GDP.
Sources: OECD Economic Outlook 88, NIER and own calculations.

The Ministry of Finance is of the opinion that the automatic stabilisers have also weakened since the early 2000s. The Ministry estimates that since the 2007 Spring Fiscal Policy Bill, the budget elasticity – which indicates how much net lending as a percentage of GDP drops when GDP growth decreases by one percentage point – has been 0.55. Between 2001 (when such estimates were first reported) and 2007, the budget elasticity was estimated at 0.7.[5]

There are reasons to believe that the cyclical sensitivity of public finances has continued to decline since 2007. Earned income tax credits and reduced benefit levels in unemployment insurance should result in weaker automatic stabilisers. But according to our earlier analysis, using the same methods as the OECD and the Ministry of Finance, it is not possible to find any evidence that these factors have resulted in any significant weakening of the automatic stabilisers.[6] A more important explanation of why the automatic stabilisers are weaker than in the 1990s may be that the estimates of the budget elasticity do not take into account the balanced budget requirement for local governments, which was introduced in 2000. As a result of the balanced budget requirement, local governments must cut their expenditure when their revenue falls in conjunction with a large drop in GDP. This is discussed in more detail in Section 1.2.1.

The limited weakening of public finances in Sweden is to a large extent due to better than expected labour market developments. In last year's report, we showed that employment developed more favourably during the recent crisis than during the crisis in the 1990s – even though GDP this time fell somewhat more. Employment reacted less forcefully to the last downturn than it did under the earlier average pattern, while the reverse was true during the 1990s crisis.[7]

Box 1.2 Why were budget deficits during the crisis smaller in Sweden than elsewhere?

The budget deficits were significantly smaller in Sweden than in most other countries during the crisis. In an OECD forecast from autumn 2010, a deficit of just 1.2 per cent of GDP was expected in

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[5] The Ministry of Finance bases its estimate of the budget elasticity on the OECD study by Girouard and André (2005). See also Section 1.2.

[6] See Fiscal Policy Council (2009a) and Flodén (2009). But it is possible that such estimates would show a lower budget elasticity if they were extended to later years.

[7] See Fiscal Policy Council (2010), Section 1.2.3.

general government net lending in Sweden in 2010. The corresponding figures were 7.6 per cent for the OECD area and 6.3 per cent for the euro area.

A relevant question is the extent to which the differences in budget outcomes between Sweden and other countries were due to Sweden's stronger public finances *entering* the crisis and the extent to which it was due to better developments *during* the crisis. This question has direct relevance in an assessment of the Government's measures during the crisis.

Table 1.1 breaks the differences in net lending between on the one hand Sweden and on the other hand the OECD and the euro area, respectively, down into different factors. The deficit in government net lending as a percentage of GDP was 6.4 percentage points lower in Sweden than in the OECD. Out of these 6.4 percentage points, 4.8 are explained by higher net lending before the crisis (2007). During the crisis, GDP in Sweden fell more than in the average OECD country. If net lending had weakened in line with the average relation with GDP for the OECD countries (see the discussion of Figure 1.2), net lending in Sweden would have been 1.8 percentage points larger than in the OECD. Instead, net lending weakened by 1.6 percentage points less in Sweden. The reason is that net lending in Sweden decreased by 3.4 percentage points less than it would have if it had followed the average relation with GDP in the OECD (the residual).

The reason why public finances deteriorated less in Sweden than in other countries despite the larger fall in GDP is, as discussed in connection with Figure 1.2, that employment fell much less than normally when output fell.

Table 1.1 Differences in government net borrowing 2010 between Sweden and the OECD and Sweden and the euro area, respectively, per cent of GDP

	OECD - Sweden	Euro area - Sweden
Difference in net borrowing 2010	6.4	5.1
of which:		
Difference in net borrowing 2007	4.8	4.1
Difference in contribution from fall in GDP	-1.8	-1.3
Residual	3.4	2.3

Sources: OECD Economic Outlook 88 and own calculations.

The analysis is somewhat different if compared with the euro area instead. But the main conclusion is the same. The better outcome for general government net lending in Sweden than in other countries during the crisis is due *both* to stronger public finances before the crisis *and* a better development during the crisis than 'should' have been the case, given the less favourable GDP development. The stronger starting point was the most important of these two factors.

1.1.1 Revenue and expenditure trends 2007-2010

Table 1.2 shows government revenue and expenditure 2007-2010 classified according to purpose. The decrease in net lending was due to both lower revenue and higher expenditure. This is to be expected when the automatic stabilisers work in a downturn. The lower tax revenue was also due to active decisions to reduce taxes. The second, third and fourth steps in the earned income tax credit were the most important tax changes, but social contributions for young and older workers and the corporate tax were also reduced during this period. One reflection of these measures is that tax revenue as a percentage of GDP – which is not automatically affected by the cyclical situation to any significant extent – fell.

Transfer payments, public consumption and public investment contributed to the increase in expenditure, whereas interest expenditure decreased. The increase in government expenditure occurred primarily in the local government sector, which accounts for about 3/4 of public consumption. But local government transfer expenditures did not increase very much. Local government transfer payments to households (primarily financial assistance) increased only SEK 5 billion from 2007 to 2010 and other local government transfers increased by SEK 5 billion.

Table 1.2 General government revenue and expenditure

SEK billion (*per cent of GDP*)	2007	2008	2009	2010
Revenue	**1,643**	**1,662**	**1,610**	**1,675**
	(52.5)	*(51.9)*	*(52.1)*	*(50.7)*
Taxes and charges	1,472	1,480	1,440	1,503
	(47.0)	*(46.2)*	*(46.6)*	*(45.5)*
Property income	72	79	64	60
	(2.3)	*(2.5)*	*(2.1)*	*(1.8)*
Other revenue	98	102	107	113
	(3.1)	*(3.2)*	*(3.5)*	*(3.4)*
Expenditure	**1,531**	**1,590**	**1,640**	**1,686**
	(49.0)	*(49.6)*	*(53.1)*	*(51.1)*
Transfers and subsidies	588	606	642	646
	(18.8)	*(18.9)*	*(20.8)*	*(19.6)*
of which				
Households	*494*	*503*	*538*	*536*
	(15.8)	*(15.7)*	*(17.4)*	*(16.2)*
Business	*52*	*54*	*55*	*58*
	(1.7)	*(1.7)*	*(1.8)*	*(1.8)*
External recipients	*42*	*49*	*49*	*52*
	(1.3)	*(1.5)*	*(1.6)*	*(1.6)*
Consumption	797	835	858	899
	(25.5)	*(26.1)*	*(27.8)*	*(27.2)*
Investment, etc.	90	96	104	109
	(2.9)	*(3.0)*	*(3.4)*	*(3.3)*
Interest	55	53	36	33
	(1.8)	*(1.7)*	*(1.2)*	*(1.0)*
Net lending	**112**	**71**	**-29**	**-11**
	(3.6)	*(2.2)*	*(-0.9)*	*(-0.3)*

Sources: The 2011 Spring Fiscal Policy Bill and own calculations.

There are opposing forces at work in central government transfers to households. Table 1.3 shows that there was a decrease of SEK 20 billion in expenditures for the sick and disabled during the period. According to Figure 1.3, this decrease is explained by lower expenditures for both early retirement and sickness benefits. Expenditures for labour market and working life (including unemployment benefits, activity support and arrangement costs for labour market programmes) increased by SEK 14 billion during the period. All in all, the decrease in expenditures for sickness and early retirement benefits exceeded the increase in expenditure for higher unemployment. This helped limit the impact of the crisis on public finances.

Table 1.3 Central government expenditure 2007-2010, SEK billion

	2007	2008	2009	2010
Institutional infrastructure[a]	110	109	111	116
International assistance	25	28	30	27
Migration	5	6	7	7
Health care and social services	47	49	53	56
Financial security	228	225	220	212
of which:				
for the sick and disabled	*120*	*116*	*110*	*100*
for old age	*44*	*43*	*42*	*42*
for families and children	*65*	*66*	*68*	*70*
Labour market and working life	55	48	61	69
Integration and gender equality	4	5	5	5
Research and education[b]	62	64	70	76
Culture, media, religious communities and leisure	10	10	10	11
Infrastructure and business[c]	76	103	77	78
Local government grants	73	65	82	76
Interest on national debt, etc.	47	48	37	23
Contribution to the European Community	27	32	19	30
Total, all expenditure areas	**769**	**790**	**781**	**786**
Old-age pension system	188	201	220	223
Expenditures subject to the central government ceiling	**910**	**943**	**965**	**986**
Central government expenditure ceiling	**938**	**957**	**989**	**1 024**

Note: a) Governance, Economy/financial administration, Taxes, customs and enforcements, Judicial system; International cooperation; and Defence. b) Financial support for students and Education and academic research. c) Community planning, etc., Regional growth, General environmental protection and nature conservation; Energy, Communications, Agriculture, forestry, fisheries, and Industry and trade.
Source: The 2011 Spring Fiscal Policy Bill.

The decrease in expenditure for sickness benefits and early retirement was primarily due to fewer recipients and not to lower benefit levels. This is clear from Figure 1.3, which shows what expenditure would have been if the expenditures per recipient in sickness insurance and early retirement had been held at 2006 levels.

Figure 1.4 shows expenditures for unemployment benefits and activity support.[8] These expenditures depend partly on unemployment and partly on the distribution between the short-term unemployed, unemployed full-time students (who do not receive unemployment benefits) and long-term unemployed participating in labour market programmes with activity support (which normally is lower than unemployment benefits). The number of unemployed and

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[8] See Section 7.2 for a detailed analysis of unemployment insurance.

Figure 1.3 Sickness benefits and early retirement expenditures, SEK billion
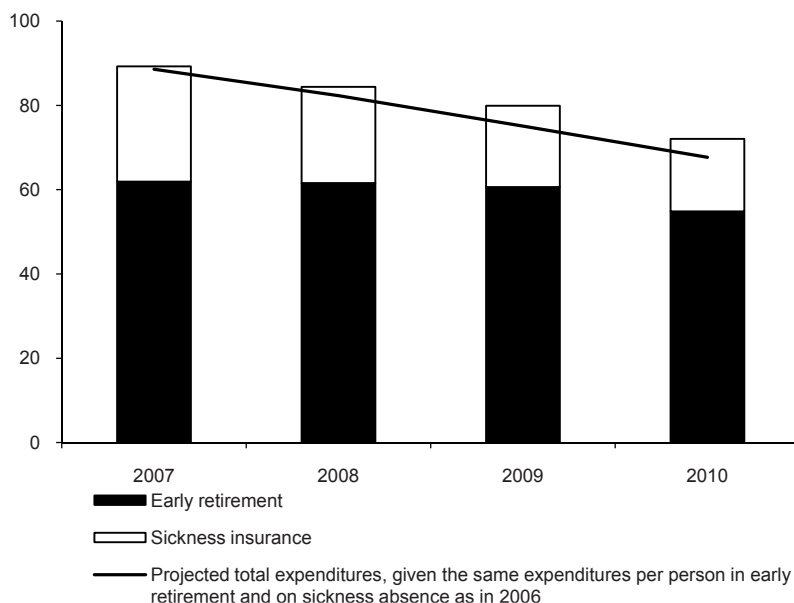
Note: The projection shows what total expenditures for sickness benefits and early retirement would have been in SEK billion if expenditures per sickness benefit recipient and early retiree had been kept at 2006 levels.
Sources: NIER and own calculations.

participants in programmes increased by more than 30 per cent between 2007 and 2010, from about 400 000 to almost 600 000 people. At the same time, expenditure increased by about SEK 7 billion, or about 25 per cent.

It was mainly expenditure for activity support which increased. Both the number of participants and expenditure for their benefits doubled. Expenditure for unemployment benefits fell, even though there was an increase of about 100 000 in the number of unemployed persons during the period. Thus, expenditure per unemployed decreased.

Figure 1.4 Expenditure for unemployment benefits and activity support, SEK billion
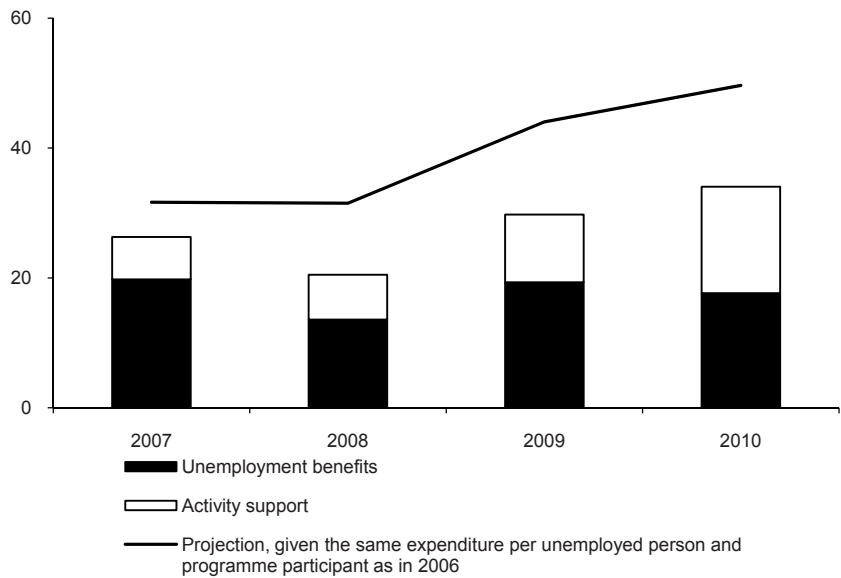
Note The projection shows what total expenditures for unemployment benefits and activity support would have been in SEK billion if expenditures per unemployed and programme participant had remained at 2006 levels.
Sources: NIER and own calculations.

Unemployment expenditure would have been higher had the Government not taken measures before the crisis that reduced central government expenditure for such benefits. The financing of unemployment insurance has changed, so that a larger part of the benefit payments than before are financed by employee contributions. The benefit levels have also been changed. The replacement rate has been lowered from 80 to 70 per cent of the previous labour income (up to a ceiling) after 200 benefit days. The long-term unemployed (after 300 benefit days, 450 for parents with dependent children) now get 65 per cent of their previous labour income in the job and development guarantee. The study condition has also been abolished. Thus, young people entering the labour market no longer qualify for unemployment benefits.

Figure 1.4 shows a rough estimate of the impact of regulatory amendments on central government expenditures for benefits to unemployed persons and programme participants. The solid line shows what total expenditure would have been if the expenditure per unemployed and per programme participant,, respectively had remained at the 2006 level, given that the regulatory amendments would not have affected labour market developments. This is of course an unrealistic assumption; we have earlier argued that the lower benefit levels in particular should result in lower unemployment than otherwise. Therefore, our assessment underestimates the savings resulting from the unemployment insurance reforms.

According to Figure 1.4, the regulatory amendments have reduced the labour market expenditure sharply during the period 2007-2010 (by about SEK 5 billion in the beginning of the period and about SEK 15 billion at the end). These are significant savings.

1.1.2 Fiscal plans and their implementation

Fiscal outcomes almost always deviate from the expected. The expected budget outcomes are based both on macroeconomic forecasts and on forecasts of tax revenue and central government expenditure for a given macroeconomic development. Economic forecasts are usually not very accurate. For macroeconomic forecasts, the deviations are particularly large when there are sharp turns in the business cycle.[9] An analysis of how actual outcomes have deviated from the forecasts may help improve the forecasting methods.

Figure 1.5 shows that government net lending has deviated substantially from the forecasts in the Budget Bills each year. The deviations were particularly large in 2009 and 2010. When the 2009 Budget Bill was presented in September 2008, the Government expected GDP to grow by 1.7 per cent in 2009. In fact, GDP decreased by 5.5 per cent in 2009. In light of this, net lending was accordingly lower than anticipated. According to conventions applied by the Ministry of Finance in making its estimates, GDP growth that is seven percentage points lower should result in about SEK 125

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[9] See, for example, Chapter 5 in Fiscal Policy Council (2010).

billion less in net lending.[10] As shown in Figure 1.5, the deviation from the forecast in the Budget Bill was significantly smaller. Net lending in 2009 came to just SEK 60 billion less than the 2009 Budget Bill forecast.

The decline in net lending in 2009 was on the one hand larger than forecast but on the other hand smaller than what it should have been, given the major economic downturn. The explanation is that economic developments were unexpected (which resulted in lower net lending than forecast) but public finances were less sensitive to the economic downturn this time than before.

For 2010, the deviation from the forecast is more in line with macroeconomic developments. In the 2010 Budget Bill, economic growth of 0.6 per cent was forecast for 2010. In the 2011 Spring Fiscal Policy Bill, growth is estimated to have come to 5.5 per cent, i.e. 4.9 percentage points higher. As shown in Figure 1.5, net lending was about SEK 100 billion higher than forecast in the 2010 Budget Bill. Since GDP developed more positively than expected, net lending should have been about SEK 80 billion higher.[11]

Figure 1.5 also shows that the deviations from the forecast are mainly explained by deviations in central government net lending. The reason for this is that central government finances follow the variations in the business cycle more than the finances of other parts of the public sector (see Figure 1.1).

Figure 1.6 shows the importance of assumptions about labour market developments in forecasts of public finances. In the 2009 Budget Bill, which was presented in autumn 2008, the Government estimated unemployment at just over six per cent in both 2009 and 2010 and net lending at 1.1 and 1.6 per cent of GDP respectively. When this Bill was presented, the extent of the financial crises was unknown.

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[10] If the budget elasticity is 0.55, the decrease in net lending should be $0.55 \times 7.2 = 4$ per cent of GDP. This corresponds to just over SEK 125 billion based on 2008 nominal GDP. See Section 1.2 for a discussion of the budget elasticity.

[11] (2009 nominal GDP) $\times 0.55 \times 4.9/100 \approx$ SEK 80 billion.

Figure 1.5 Deviation from government net lending forecast, SEK billion
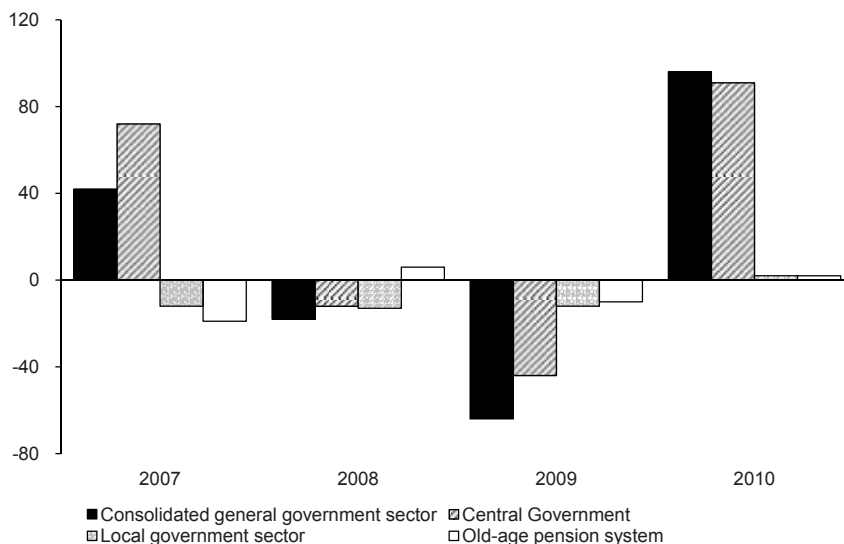
Note: The outcome is from the 2011 Spring Fiscal Policy Bill.
Sources: The 2007-2011 Budget Bills and the 2011 Spring Fiscal Policy Bill.

Figure 1.6 Forecasts of general government net lending and unemployment 2009 and 2010 estimated at different times
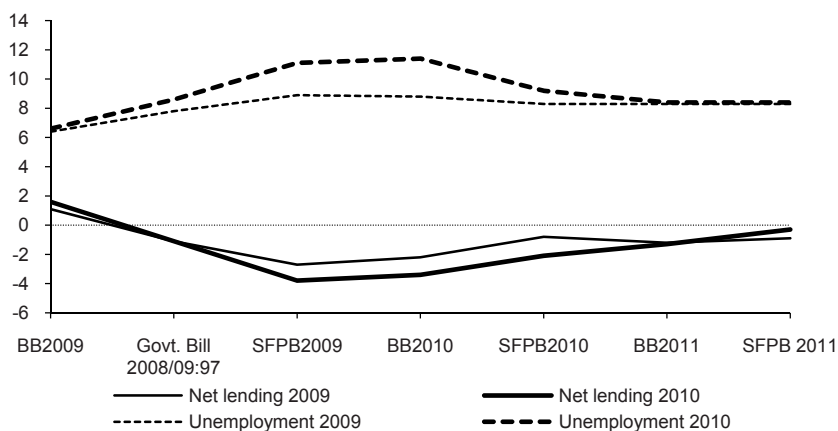
Note: Unemployment for people aged 15-74 as a percentage of the labour force. Net lending as a per cent of GDP. Govt. Bill 2008/09:97 *Measures for Jobs and Adjustment* was presented in January 2009.
Sources: The respective Budget Bills.

In the 'Mini Budget Bill' *Measures for Jobs and Adjustment* in January 2009, unemployment was expected to be 7.8 per cent in 2009 and 8.6 per cent in 2010. The forecast for net lending was consequently revised downwards to -1.1 per cent of GDP for both years. The tendency towards a higher forecast for unemployment and a lower forecast for net lending continued in the 2009 Spring Fiscal Policy Bill, which painted an even gloomier picture of the future. Unemployment was expected to be 8.9 per cent in 2009 and 11.1 per cent in 2010. Government net lending was estimated at -2.7 per cent in 2009 and -3.8 per cent in 2010.

In the 2010 Budget Bill, presented in autumn 2009, net lending was revised upwards for both years but unemployment in 2010 was forecast to be somewhat higher than expected earlier. For 2009, unemployment was revised marginally downwards. The upward revision of net lending in 2009 was primarily due to unexpectedly strong tax revenue and lower expenditure for sickness and early retirement benefits. The difference from the 2009 Spring Fiscal Policy Bill was not particularly large. But these figures conceal that in the 2010 Budget Bill, the Government took the fiscal stimulus measures included in the Bill into account in its forecasts, whereas it had not done so in the 2009 Spring Fiscal Policy Bill. These measures included tax reductions and extra local government grants and corresponded to a decrease in net lending in 2010 of about one per cent of GDP. In other words, the Government's estimate of net lending in 2010 – given no policy change – had been revised upwards by approximately another percentage point between the 2009 Spring Fiscal Policy Bill and the 2010 Budget Bill.

The tendency to revise both the budget deficits and unemployment downwards has continued since then. In the 2010 Spring Fiscal Policy Bill and the 2011 Budget Bill (presented in autumn 2010), the estimates were significantly brighter than one year earlier. The Government's estimate of 2009 net lending was revised upwards by one percentage point between the 2010 and the 2011 Budget Bills. The difference for 2010 is even larger; the Government has revised net lending for 2010 upwards by 2.1 percentage points. In the 2011 Budget Bill, unemployment was estimated at 8.3 per cent in 2009 and 8.4 per cent in 2010, a downward revision of 0.5 and 3.0 percentage points respectively.

To give a more detailed picture of the deviations, general government revenue and expenditure developments are analysed separately in Table 1.4. Expenditure was lower than expected each year. Thus, the overestimation of general government expenditure does not seem to be caused by cyclical developments, since the deviations go in the same direction during the upturn in 2007 and 2008 and the downturn in 2009 and 2010. Transfers and subsidies in particular were lower than expected. The difference is partly explained by the reductions in expenditure for sickness and early retirement benefits that we discussed in Section 1.1.1. In view of the exceptionally strong downturn and the increase in unemployment that resulted, it is still remarkable that expenditures for transfer payments and subsidies were lower than expected in 2009. One explanation may be that the Government underestimated the effects of the unemployment insurance changes. As we discussed in Section 1.1.1, central government expenditure for unemployment benefits per unemployed person has decreased during the period.

Table 1.4 Deviations from forecasts divided into revenue and expenditure, SEK billion

	2007	2008	2009	2010
Revenue	**31**	**-35**	**-93**	**70**
Taxes and charges	32	-42	-82	75
Property income	4	8	-14	-3
Other revenue	-6	-2	4	-1
Expenditure	**-11**	**-18**	**-28**	**-25**
Transfers and subsidies	-11	-10	-1	-29
of which:				
Households	*-7*	*-6*	*6*	*-20*
Business	*0*	*-1*	*-6*	*-10*
External recipients	*-4*	*-3*	*-1*	*1*
Consumption	-2	-7	-14	11
Investment	4	3	4	0
Interest	-2	-4	-16	-5
Net lending	**42**	**-18**	**-64**	**96**

Note: Outcome from the 2011 Spring Fiscal Policy Bill. 'Deviation' refers to the difference between the outcome and the Government's forecast in the Budget Bill for the respective year.
Sources: The 2007-2011 Budget Bills.

On the revenue side, it is primarily taxes that deviate from the forecasts in SEK billion. If economic growth is higher than forecast, the tax bases grow more and contribute to higher than expected tax revenue. Conversely, lower growth results in less tax revenue. Table

1.4 confirms this picture. In 2007 and 2010, growth was higher than forecast in the Budget Bills for these years, and general government tax revenue then was also higher than expected. The reverse is true for 2008 and 2009. GDP growth was lower than forecast in these years, resulting in less tax revenue than forecast in the Budget Bills.

Table 1.5 shows deviations from the tax revenue forecasts divided into different tax bases. The contributions from deviations in tax revenue from labour, capital, and consumption and input goods vary between years. In 2007 and 2008, deviations in the revenue from the taxation of investment income contribute to about two thirds of the deviations in the forecasts of total tax revenue. The revenue from investment income taxation increased more than forecast in 2007, when the economy grew more than forecast. The opposite was true in 2008, when economic growth was lower than forecast. The revenue from investment income taxation was lower than expected in 2009 (when growth was lower than forecast) and higher than expected in 2010 (when GDP grew more than forecast).

Table 1.5 Contribution of various taxes to forecast deviations

	Labour		Capital		Consumption and input goods		Other		Total
	SEK billion	(Contribution, per cent)	SEK billion	(Contr.)	SEK billion	(Contr.)	SEK billion	(Contr.)	SEK billion
2007	11.8	20.7	38.2	67.0	1.2	2.1	5.8	10.2	57
2008	-1.5	3.6	-27.2	65.7	-11.7	28.3	-1.0	2.4	-41.4
2009	-40.4	46.7	-27.6	31.9	-15.2	17.7	-3.4	3.7	-86.6
2010	10.3	14.1	23.9	32.7	31.8	43.5	7.1	9.7	73.1

Sources: The 2007-2011 Budget Bills.

Revenue from all the tax bases has shown a pattern of higher revenue in years when economic growth has surprised on the positive side and vice versa. Tax revenue's deviations from forecast are thus largely driven by cyclical developments.

1.1.3 Fiscal forecast uncertainty

Fiscal forecasts are used for at least three purposes:

1. Forecasts of whether the surplus target will be reached and estimates of the future scope for reform.
2. Basis for fiscal policy measures.

3.   Assessments of fiscal sustainability.

Systematically incorrect forecasts risk misleading policy, if, for example, budget weakening measures are taken on the basis that the forecasts indicate scope for such measures, which subsequently does not materialise. But even if the forecasts are not overoptimistic, uncertainty may in itself limit fiscal policy effectiveness. If the Government attaches great importance to avoiding large budget deficits, uncertain forecasts may lead to a wait-and-see attitude in downturns. This may result in ill-timed measures from a business cycle perspective.

   There are different ways of measuring forecast uncertainty. One method, which captures systematic forecast errors, is to study *average forecast deviations*. But average errors do not tell very much about forecast precision, since large over- and underestimations may offset each other.

   Figure 1.7 shows the average forecast errors at various estimation times. Forecasts made far in advance of the Budget Bill for a particular year overestimate net lending. The errors are larger towards the end of the period. This is due to the unexpected economic crisis. The overestimation of net lending in the forecasts before the Budget Bill for the year in question reflects that the Ministry of Finance only takes adopted and announced policies into account. It is logical that net lending is overestimated in Bills that do not take likely future decisions into account, since net lending tends to grow over time if the rules are unchanged.[12] Systematic errors of this kind do not risk misleading policy, since they are due to conscious choices by the Government. But there may be a problem in their communication to firms and households, which could contribute to mistaken *expectations* of future policies.

   In those forecasts that take into account decisions applicable to the forecast year, average errors are smaller. In these cases, the differences between different periods are also smaller. In the forecasts in the Budget Bill for the year in question, which is presented the year before, net lending is underestimated by about 0.4 per cent of GDP. The underestimation of net lending persists in the Spring Fiscal Policy Bill for the year in question (presented in the

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[12] See Section 2.1 for a detailed discussion of why government net lending grows over time in the absence of new decisions.

Figure 1.7 Average forecast errors for government net lending as a percentage of GDP, percentage points
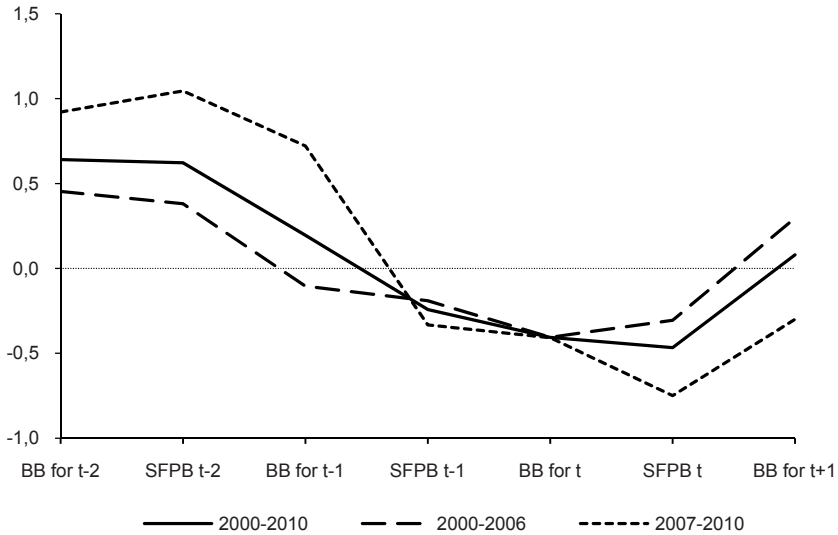
Note: BB = Budget Bill. SFPB = Spring Fiscal Policy Bill. Forecast errors are defined as forecast minus outcome. The index *t* represents the outcome year. This means that if *t* = 2008, then BB for *t-2* indicates the forecast for net lending in 2008 as it was shown in the 2006 Budget Bill and so on. For 2000-2006, net lending for the premium pension system has been excluded from the forecasts since the premium pension system has not been included in the public sector since 2007.
Sources: The Government's Budget Bills 1998-2010 and own calculations.

spring of the same year) and also in the Budget Bill for the following year (presented in the autumn of the same year). The average error in the Budget Bill for the year in question and onwards must be regarded as relatively small. Based on Figure 1.7, there is no reason to assume that the forecasts are systematically misleading to an extent that should be a cause for concern.

Another measure of forecast uncertainty, which reflects forecast precision more accurately, is *the average absolute error*. The average absolute error is estimated as the average of all deviations from the outcome independently of their sign. Figure 1.8 shows that the absolute errors are also greater the farther in advance the forecast is made. This reflects both that the forecasting method used by the Ministry of Finance does not take future decisions into account and that long-term forecasts are more difficult to make.

Figure 1.8 Absolute forecast errors for government net lending as a percentage of GDP, percentage points
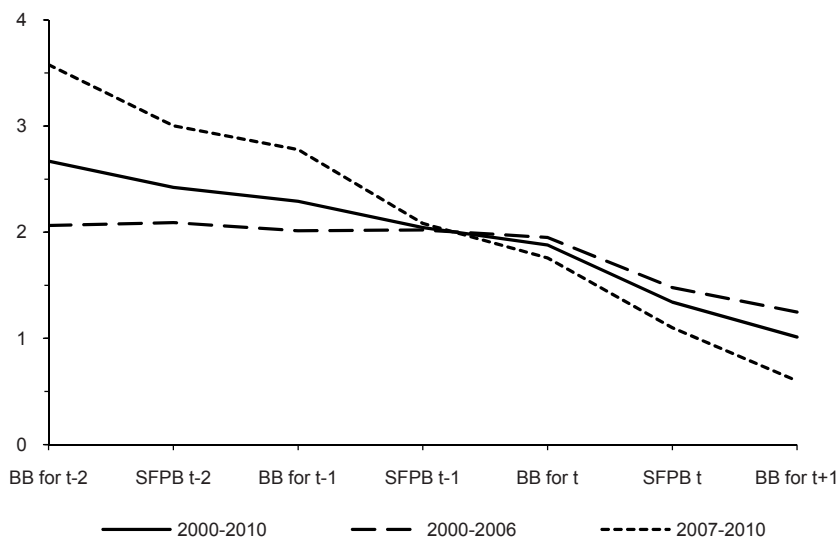
Note: See Figure 1.7.
Sources: The Government's Budget Bills 1998-2010 and own calculations.

The absolute forecast errors are relatively large for all time horizons. In the forecasts provided by the Budget Bills for the years in question, the absolute errors exceed 1.5 percentage points on average. The errors were of the same order of magnitude – even somewhat greater on average – before the crisis. Such large forecast errors make forward-looking evaluations of the surplus target very uncertain. The assessments of the scope for reform are also affected by the forecast uncertainty, making it necessary for the Government to be cautious.

The problem of uncertainty in the fiscal forecasts needs to be tackled in a more radical way. This is not to say that the forecast methodology used by the Ministry of Finance has obvious shortcomings. Forecast will always be uncertain, but the Ministry of Finance could improve the ways it manages and communicates this uncertainty.

In last year's report, we criticised the Government's way of dealing with the uncertainty in the macroeconomic forecasts.[13] The

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[13] Fiscal Policy Council (2010), Chapter 5.

same criticism also applies to the forecasts for the public finances. The Government reports assessments of various risks for alternative developments. But it is still difficult to form an opinion of what probability the Government assigns to the various scenarios.

In this respect, the Government's approach is quite different from that of the Riksbank (the Swedish central bank), which for several years, in addition to alternative scenarios, has been publishing uncertainty intervals around the most important variables in its forecasts. Such quantifications should be seen as a *complement* to alternative scenarios. The alternative scenarios are valuable because they communicate how Government thinks future economic developments could change if some less likely, but nevertheless foreseeable, scenario were to occur.

Figure 1.9 shows the uncertainty intervals for the forecasts made in the 2011 Budget Bill for general government net lending as a percentage of GDP. The intervals were calculated by the same method as used by the Riksbank.[14] The method is based on the assumption that the forecast errors are distributed symmetrically around their average value. Whether this is a plausible assumption for general government net lending is ultimately an empirical question which we do not attempt to answer here.[15] The calculations should be seen as illustrating an *option* available to the Government.

The figure shows that the uncertainty for the current year as well is substantial (+/- two percentage points) and that uncertainty grows rapidly with a longer time horizon. The large uncertainty for 2012 and 2013 (the 90 per cent interval extends from -2.9 to 3.9 per cent of GDP in 2013 – i.e an uncertainty corresponding to five times the surplus target) reflects, in addition to the pure forecast uncertainty, that the Government has not yet announced any fiscal policy changes for these years.

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[14] See the Riksbank (2007).
[15] The Fiscal Policy Council's opposite number in Great Britain, the Office for Budget Responsibility (OBR) assumes an asymmetric distribution.

Figure 1.9 Forecast uncertainty for net lending 2010-2013 as a percentage of GDP, percentage points
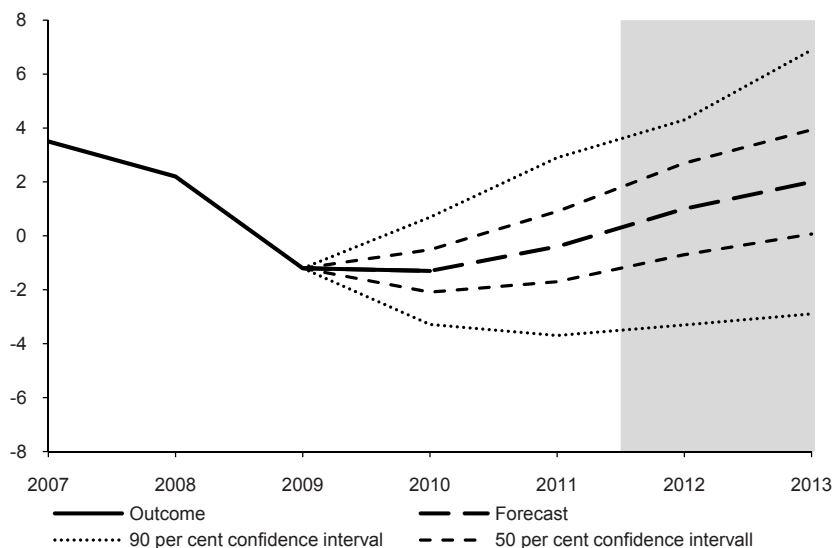
Note: The confidence intervals are calculated under the assumption that the root mean square errors (RMSEs) are normally distributed (see the Riksbank 2007). The grey area shows the years for which the forecasts are based on the current rules system.
Sources: The Government's Budget Bills and own calculations.

1.1.4 Conclusions

Public finances in Sweden weakened during the crisis, but not to the extent feared in the beginning. The decrease in net lending was relatively small both compared with other countries and with the economic crisis of the 1990s.

The relatively favourable developments in the public finance have largely been due to better than expected labour market developments. They made it possible to maintain tax revenue during the crisis, while expenditure for unemployment rose only moderately. The latter were also limited because the unemployment insurance reform reduced the expenditures per unemployed person. Another important factor was that expenditure for sick-leave and early retirement decreased as the number of people receiving such benefits fell.

1.2 Structural net lending and automatic stabilisers

In analyses of general government net lending, it is customary to break it down into *structural net lending* and *automatic stabilisers*. Structural net lending is a measure of what the fiscal balance would be in a balanced cyclical situation, i.e. a situation in which tax revenue and public expenditure do not deviate from the normal because of swings in resource utilisation. The automatic stabilisers measure the deviation in net lending from the normal attributable to the cyclical situation. In an economic downturn, tax revenue declines automatically, i.e. without any decisions being taken, as a result of lower resource utilisation. At the same time, some public expenditures, particularly for unemployment, increase. In an economic upturn, the reverse is true. Structural net lending is generally regarded as a measure of the fiscal policy stance.

Structural net lending (as a percentage of GDP) is calculated as follows:

Structural net lending = Actual net lending – Automatic stabilisers – Extraordinary tax revenue – One-off effects.

One-off effects and extraordinary tax revenue are excluded from the estimate of structural net lending so that it will not vary because of temporary factors. One-off effects may refer to changes in rules that temporarily yield higher or lower tax revenue. In economic upturns, extraordinary tax revenue results when asset prices rise sharply, leading to increases in tax revenue via the taxation of investment income and capital gains. The automatic stabilisers are derived as follows:

Automatic stabilisers = Budget elasticity × Output gap.

The output gap is the difference between actual GDP and *potential* GDP, i.e. GDP with normal resource utilisation. If the output gap is negative, it means that GDP is below its potential level and that the economy is in a downturn. A positive output gap implies an upturn. The budget elasticity indicates how many percentage points government net lending as a percentage of GDP decreases if GDP

falls by one per cent. The budget elasticity is thus a measure of the strength of the automatic stabilisers, i.e. what change in net lending happens automatically when there is a change in the cyclical situation.

The Ministry of Finance assumes a budget elasticity of 0.55. This means that actual net lending is assumed to decrease (increase) by 0.55 per cent of GDP if GDP falls (rises) by one per cent. The assumption is based on calculations by the OECD.[16] By using information on current tax rules and on how incomes are distributed across the population, estimates have been made of the cyclicality of different taxes: personal income taxes, social contributions, corporate taxes and indirect taxes. On the expenditure side, there were estimates of how expenditures for unemployment benefits vary with the business cycle. These estimates have subsequently been summed to obtain a measure of the total budget elasticity. In our 2009 report, we updated these calculations made with the same method. According to these, the budget elasticity was 0.53 in 2009, i.e. a figure very close to the OECD estimate.[17]

Box 1.3 Structural net lending and potential GDP

The Ministry of Finance estimates *structural net lending* using the equations presented above. The estimate of the automatic stabilisers is obviously an important component of the estimation of structural net lending. The effect of the automatic stabilisers is determined by both the budget elasticity and the size of the output gap.

Potential GDP is, in turn, estimated in the following way. The Ministry of Finance estimates *equilibrium unemployment* (the unemployment consistent with stable inflation) and *potential labour force participation*. The latter indicates the proportion of the population that is expected to participate in the labour force in a normal cyclical situation. Equilibrium unemployment and potential labour supply together give *potential employment* as follows:

Potential employment = Potential labour force participation × (1-Equilibrium unemployment).

Based on an assessment of *potential average hours worked*, i.e. the

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[16] Girouard and André (2005). See also van den Noord (2000) for earlier estimates.
[17] Fiscal Policy Council (2009a), Box 1.1. The underlying estimates were made as part of a background report to the Council by Martin Flodén (Flodén 2009).

> average number of hours a year the employed are estimated to work in a normal cyclical situation, *potential hours worked* are estimated as:
>
> *Potential hours worked = Potential employment × Potential average hours worked.*
>
> To estimate how much output the hours worked produce, the Ministry of Finance estimates *potential productivity*, which indicates the output per hour worked in a normal cyclical situation. Potential GDP is ultimately estimated as the product of potential hours worked and potential productivity.

In an international perspective, 0.55 is a high figure.[18] According to the OECD (2008), Sweden has a higher figure than any other OECD country. Most countries are in the interval 0.35-0.50. The high estimates of the Swedish budget elasticity have been construed as meaning that the automatic stabilisers are considerably stronger in Sweden, and that there is therefore less need for an active fiscal policy to counter cyclical swings than in most other countries. The research literature supporting the view that strong automatic stabilisers actually reduce the variations in GDP and employment is also extensive.[19]

1.2.1 Structural net lending estimates

Figure 1.10 shows general government structural net lending as estimated by the Ministry of Finance and the National Institute of Economic Research (NIER). The two estimates of structural net lending differ. There are large deviations in some years. This reflects both different estimates of the cyclical situation and the different methods used by the NIER and the Ministry of Finance to estimate structural net lending.[20] The figure also shows that structural net lending to a great extent covaried with actual net lending until the latest crisis. In other words, structural net lending varied with the cyclical situation during this period.

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[18] See also Figure 1.13.
[19] Gàli (1994) and Fatás and Mihov (2001) are two basic studies. See also Fatás and Mihov (2009) and Debrun and Kapoor (2010).
[20] See Braconier and Forsfält (2004) and Hjelm and Jönsson (2010) for a description of NIER's method of estimating structural net lending.

Figure 1.10 General government actual and structural net lending, per cent of GDP
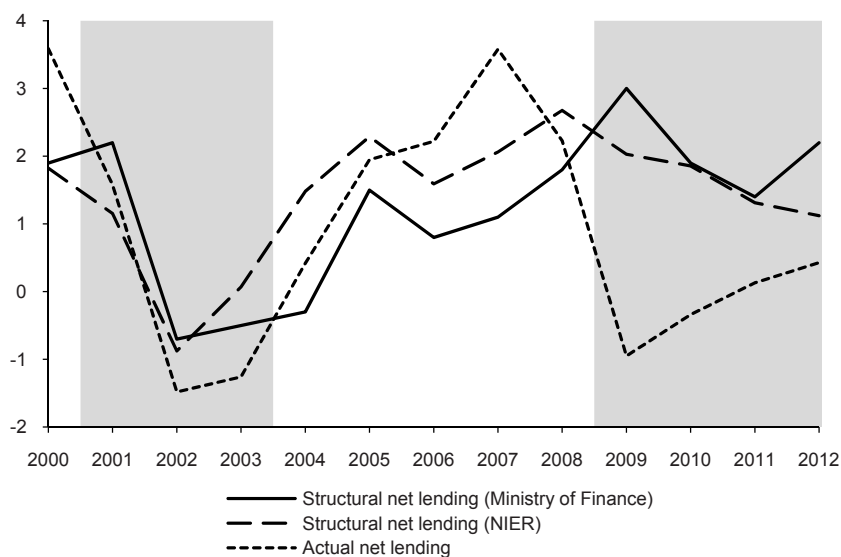
Note: Grey areas indicate economic downturns, which are defined as periods with a negative output gap of more than 0.5 per cent of potential GDP.
Sources: The 2011 Spring Fiscal Policy Bill, the 2011 Budget Bill, the 2010 Budget Bill, the 2009 Budget Bill and NIER.

There are reasons for the covariation between structural net lending and the business cycle, although structural net lending is a measure of what net lending would have been in a normal cyclical situation. First, discretionary budget weakening decisions result in lower structural net lending. Thus, structural net lending covaries with actual net lending if the Government conducts a countercyclical fiscal policy. Second, particularly deep economic downturns may lead to permanently lower employment and thus to lower potential GDP; the result is lower structural net lending because lower potential GDP leads to a less negative output gap, which results in a larger part of the weakening in actual net lending (which always occurs in economic downturns) being regarded as structural in nature.

Figure 1.10 also shows that structural net lending according to Ministry of Finance and NIER estimates has covaried with the business cycle to a lesser extent in the recent crisis than in earlier years in the 2000s. From 2000-2002, actual net lending fell about five percentage points and structural net lending about three percentage points. The fall in actual net lending was somewhat smaller (about four percentage points) during the recent crisis, even though this downturn was considerably deeper. Structural net lending *increased* almost one percentage point from 2007 to 2010 according to Ministry of Finance estimates. According to NIER, structural net lending was relatively unchanged during the recent crisis.

To assess the relationship between structural net lending and the cyclical situation in a longer perspective, we have estimated statistical models for the relationship between structural net lending on one hand and on the other hand, the output gap, the general government gross financial debt and the previous level of structural net lending.[21] Fatás and Mihov (2009) have previously made similar estimates for a number of OECD countries. According to these estimates, Sweden was one of the few countries where structural net lending decreased in economic downturns and increased in upturns. This can be interpreted as meaning that fiscal policy in Sweden has previously been more countercyclical than in most other OECD countries.

We have estimated two different models based on the OECD estimate of structural net lending and the output gap and the EU Commission statistics for general government gross financial debt. One model includes the output gap while the other model is estimated without this variable. The difference between these models shows how much a factor the business cycle is in explaining structural net lending developments.

The model estimates confirm that fiscal policy in Sweden has on average been countercyclical in the period 1974-2000. As shown in Figure 1.11, the model that includes the output gap explains the development of structural net lending better than the model without. But the figure also shows that cyclical factors do not explain the growth in structural net lending from 2007 onwards. In the crisis years 2007-2010, the model without the output gap is substantially better at explaining structural net lending developments. Given the

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[21] The models are described in detail in Appendix 1.

large drop in GDP, the model with the output gap forecasts that structural net lending will decline by about five percentage points from 2007-2010. But the model without the output gap forecasts a strengthening of structural net lending and thus is relatively close to the OECD estimate.

Figure 1.11 Structural net lending, per cent of GDP
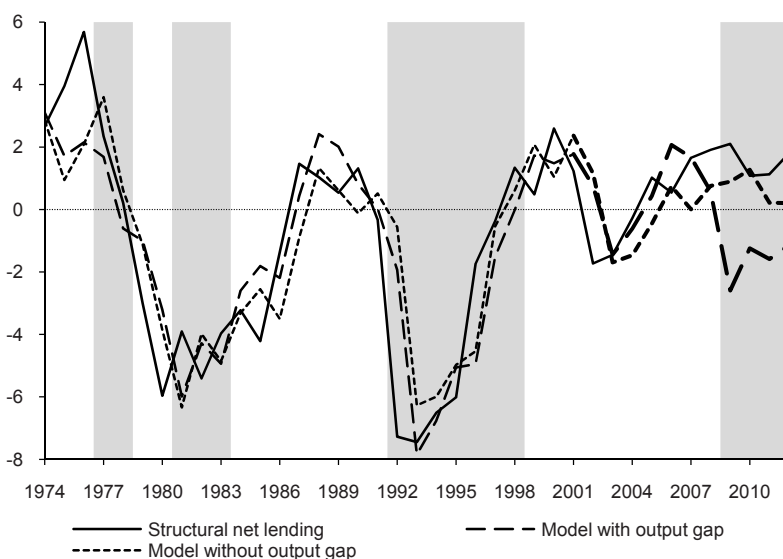
Note: The grey areas indicate years when there were economic downturns (according to the OECD estimate, a negative output gap of more than 0.5 per cent). The models are described in Appendix 1 and are estimated using the previous year's structural net lending, consolidated gross debt and (for one model) the year's output gap as explanatory variables for the period 1974-2000. The thick lines are the projections for 2001-2010.
Sources: European Commission, OECD and own calculations.

One possible reason why the model with the output gap functioned so poorly in the latest crisis is that the automatic stabilisers in recent years have been weaker than estimated by the OECD (and the Government). In that case, structural net lending is incorrectly measured. Structural net lending has thus developed more weakly during the recent crisis than the OECD and the Government's estimates indicate.

Figure 1.12 shows how much of the change in net lending from 2007 to 2010 can be explained by the automatic stabilisers calculated with the Government's (OECD's) budget elasticity. During the upturn in 2007 and 2008, the automatic stabilisers contributed 1.7

and 0.2 per cent of GDP respectively to the increase in net lending. Thus, structural net lending (actual net lending minus the automatic stabilisers and after adjusting for extraordinary tax revenue and one-off effects) was 1.1 and 1.8 per cent of GDP respectively for these years. During the downturn in 2009 and 2010, the automatic stabilisers according to this analysis contributed to a decrease in net lending of 4.0 and 2.2 per cent of GDP respectively. The actual deficit was not as large but came to 0.9 and 0.3 per cent of GDP respectively. This resulted in a structural surplus these years of 3.0 and 1.9 per cent of GDP respectively, using the Government's way of calculating it.

Figure 1.12 Automatic stabilisers 2007-2010
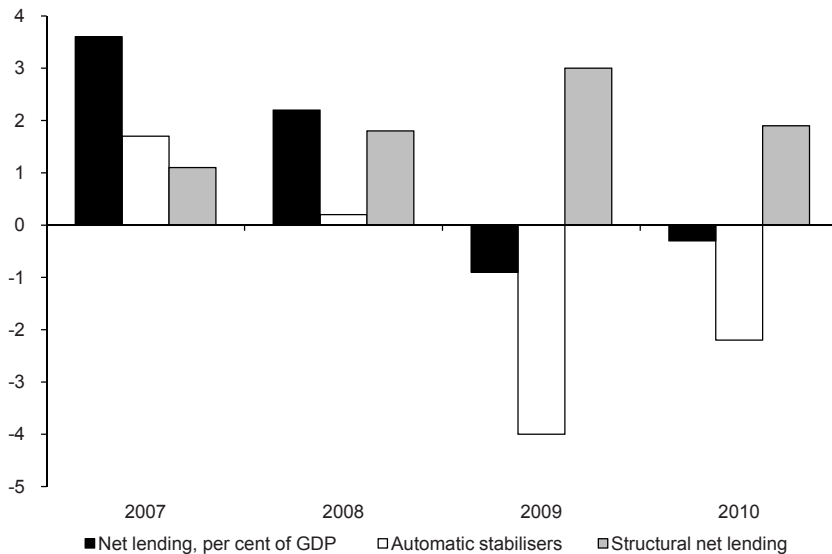
Note: In our calculations, the Government's estimate of a budget elasticity of 0.55 has been used.
Sources: The 2011 Budget Bill and own calculations.

But there is reason to question the Government (and OECD) estimates of structural net lending. This is discussed in more detail in the next section.

1.2.2 Problems calculating structural net lending

There are several problems associated with the calculations of structural net lending and the automatic stabilisers. These concern:

- The estimates of the output gap
- That all errors measuring the cyclical and one-off effects are attributed to structural net lending
- Taking into account extraordinary tax revenue, and
- Calculating the budget elasticity.

The estimates of the output gap

An estimate of the output gap requires an estimate of potential GDP. Potential GDP can be estimated in many different ways.[22] Both revised data and actual developments may lead to major changes in the estimates. Table 1.6 shows that earlier estimates of the output gap have been substantially revised over time. For 2007, 2008 and 2010, the Government has revised its estimate of the output gap by about three percentage points after the Budget Bill for the year in question was presented. For 2009, the Government's estimate has varied in an interval by as much as 5.5 percentage points.

As the table shows, there are also substantial ex post revisions. The Ministry of Finance repeatedly reestimates the output gap, even backwards in time, as new statistics become available. Actual GDP is also revised ex post. The ex post two percentage point upward revision in the 2007 output gap – from 1.2 per cent in autumn 2008 to 3.2 per cent in spring 2011 – illustrates the uncertainty in the estimates.

As a result of the revisions to the output gap, the estimates of the automatic stabilisers, and thus structural net lending, have also been substantially revised. Structural net lending has been revised by more than one percentage point between different forecasts for every year from 2007-2010.

It is problematic that the estimates of the output gap vary so much as it makes the estimates of structural net lending uncertain. But at the same time, it is not fair to criticise the Ministry of Finance for changing the estimate of the output gap in light of new information. No economic analyst has any method that will with certainty identify the cyclical situation.[23]

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[22] See Box 1.3 for a description of the method used by the Ministry of Finance to estimate the output gap.

[23] See Chapter 3 for a detailed discussion of different methods of assessing the cyclical situation.

A more fundamental problem is how appropriate the measure of the output gap used by the Government is for estimating structural net lending. This was discussed in detail by the working group in the Ministry of Finance that was responsible for a review of the surplus target in 2010.[24] The group pointed out that the output gap estimated by the Ministry has on average been negative. The average output gap was -2.3 per cent for the period 1980-2006. If potential GDP is defined as the GDP level at which inflation can be held constant and inflation is more flexible upwards than downwards, this definition is reasonable since the Riksbank must pursue a monetary policy that results in a negative average output gap in order for inflation to be held stable around the inflation target.

Table 1.6 Estimates of government structural net lending and the output gap at different times

	2007		2008		2009		2010	
	Structural net lending	Output gap	Structural net lending	Output gap	Structural net lending	Output gap	Structural net lending	Output gap
Autumn 2006	2.4	-0.1						
Spring 2007	1.9	0.6						
Autumn 2007	2.2	0.6	2.0	0.9				
Spring 2008	2.3	1	2.5	0.2				
Autumn 2008	2.1	1.2	2.8	-0.7	1.9	-1.7		
Spring 2009	2.0	1.9	3.3	-1.8	1.2	-7.2		
Autumn 2009	1.6	2.6	2.3	0	1.4	-6.4	0.2	-6.5
Spring 2010	1.6	2.5	2.3	0	2.2	-5.3	0.4	-4.4
Autumn 2010	1.3	2.8	1.7	0.6	2.1	-5.7	0.6	-3.3
Spring 2011	1.1	3.2	1.8	0.5	3.0	-6.7	1.9	-3.8
Autumn	**2.4**	**2.8**	**3.3**	**0.9**	**3.0**	**-1.7**	**1.9**	**-3.3**
Lowest	**1.1**	**-0.1**	**1.7**	**-1.8**	**1.2**	**-7.2**	**0.2**	**-6.5**

Note: Structural net lending and the output gap are measured as a percentage of potential GDP.
Sources: The Government's Budget Bills.

But a measure of the output gap like this is not useful in estimating structural net lending if it is to reflect net lending in an *average* cyclical situation, as the average output gap is negative and not zero. . A simple way of handling this problem would be to define structural net lending as net lending at an average (negative) output gap. Alternatively the output gap could be estimated in such a way that its average is zero. These possibilities are discussed in the review by the Ministry of Finance. But the working group came to the conclusion

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[24] Finansdepartementet (2010a).

that the Government should for the time being continue to estimate net lending in the same way as before. We are critical of this, particularly when structural net lending is used as an indicator that the surplus target for the public finances has been met. This is discussed in more detail in Section 2.1.3.

Measurement errors are attributed to structural net lending

As the first equation in Section 1.2 shows, structural net lending is estimated as actual net lending less cyclical effects and certain one-off effects. In other words, structural net lending is the net lending that remains when these effects have been deducted. Thus, all measurement errors from cyclical or one-off effects are attributed to structural net lending. The interpretation of structural net lending as net lending in a balanced cyclical situation is therefore problematic. Under this method, estimated structural net lending varies more than actual structural net lending (estimated structural net lending = actual structural net lending + measurement errors). This measurement problem is particularly serious if the changes in structural net lending are interpreted as a measure of fiscal policy's stabilisation policy stance, since measurement errors in the cyclical adjustment are interpreted as discretionary (active) fiscal policy.

The method used may also be seen as a roundabout way of calculating structural net lending. The estimates are based on an assessment of potential GDP (see Box 1.3). Based on potential GDP, it should be possible in principle directly to calculate structural net lending instead of taking the detour via actual net lending and adjusting it for cyclical effects. A more direct method like this is already used in the fiscal sustainability calculations (see Chapter 4).

Extraordinary tax revenue

Another problem with estimating structural net lending is the extraordinary tax revenue that may arise in economic upturns. These may be due to sharp increases in asset prices, leading to increased tax revenue from the taxation of investment income and capital gains. Such extraordinary tax revenue may result in the overestimation of structural net lending in good times. This has occurred in several countries in recent years. The OECD estimate of structural net lending before the crisis in Ireland, Spain and the United Kingdom,

for example, was more positive than the ex post estimate. In autumn 2008, the OECD estimated that structural net lending in 2007 was 2.0 per cent of GDP in Spain, -0.7 per cent in Ireland and -3.3 per cent in the UK.

The OECD did not make sufficient allowance for the eventuality that developments in the finance and real estate sectors were unsustainable. Steeply rising real estate and other asset prices increased tax revenue from capital gains above the normal level. Good returns and strong expansion in the financial sector also resulted in an increase in tax revenue from this sector that was higher than normal. Economists at the European Commission have estimated that up to 75 per cent of the earlier increase in tax revenue in Spain was associated with the boom.[25] After the crisis, the OECD has revised downwards its earlier estimates of structural net lending. Its estimate in autumn 2010 was that structural net lending in 2007 was 1.6 per cent of GDP in Spain, -1.5 per cent in Ireland and -3.9 per cent in Great Britain.

The Ministry of Finance in Sweden explicitly considers extraordinary tax revenue in its estimates of structural net lending. This is done by deducting the difference between actual revenue from investment income taxation and 0.9 per cent of GDP (which is thought to be the revenue in a normal cyclical situation).[26] This is a very rough method. It does not, for example, take into account that there may be underlying trends in the tax base's share of GDP that may result in structural changes in tax revenue being interpreted as cyclical variation. The NIER and the ECB's more disaggregated methods – which are also based on frequent trend estimates of tax bases – provide a better basis for dividing tax revenues into a structural and a cyclical part.

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[25] Martinez-Mongay et al. (2007).
[26] This estimate is calculated on an investment income tax base of three per cent of GDP and a tax rate of 30 per cent.

Figure 1.13 The budget elasticity and the size of the public sector
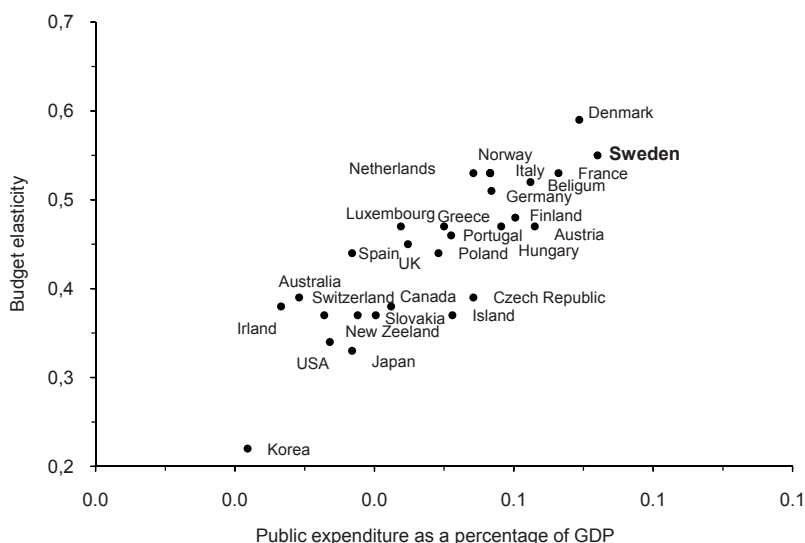
Note: Public expenditure refers to the total of all public sector expenditures as a percentage of GDP in 2005.
Sources: Girouard and Andrés (2005) and OECD (2008).

Local governments and the strength of the automatic stabilisers

Another problem is calculating the strength of the automatic stabilisers, i.e. the budget elasticity discussed above. An approximation of the OECD's method is to assume that the taxes are proportional to GDP, i.e. that the tax ratio is constant, and that public expenditure is independent of GDP. With these assumptions, the budget elasticity discussed above is simply equal to general government expenditure as a percentage of GDP. This is shown in Appendix 2. Figure 1.13 shows that the budget elasticities estimated by the OECD correspond to public expenditure as a percentage of GDP in different countries.

OECD estimates of the automatic stabilisers are based on the premise that no public expenditures other than unemployment benefits depend automatically on GDP. But this assumption does not take the *balanced budget requirement for local governments* in Sweden into account. Under this requirement, local governments must

budget so that revenue exceeds expenditure.[27] If a deficit should nevertheless occur, it is to be remedied within three years. Because of the local government balanced budget requirement, the assumption that unemployment benefits are the only public expenditure that automatically depends on the business cycle is questionable. The automatic stabilisers will be weakened if local governments reduce expenditure in order to meet the balanced budget requirement when their tax revenue falls during an economic downturn.

Assume that local governments *exactly* meet the balanced budget requirement. In that case, local government expenditure has to match revenue. The revenue consists mainly of local government taxes and central government grants to local governments. Assume also that all taxes, including local government taxes, are proportional to GDP and that grants to local governments are independent of GDP. Appendix 2 shows that under these assumptions, the budget elasticity is equal to the sum of central government grants to local governments and consolidated public sector expenditure *excluding local government expenditure*, all measured as percentages of GDP. In other words, it is no longer true that the budget elasticity is approximately equal to consolidated general government total expenditure as a percentage of GDP. Instead it must be adjusted for local government expenditure which local governments finance themselves through taxation.

In 2010 consolidated general government expenditure was 51.1 per cent of GDP, which is close to the OECD estimate of a budget elasticity of 0.55. Local government expenditure amounted to 23.6 per cent of GDP. Public expenditure excluding local government expenditure in that case is 27.5 per cent of GDP. Central government grants to local governments represent 4.1 per cent of GDP. With the above assumptions, the budget elasticity would in that case be 0.32 (0.28 + 0.04), i.e. about 0.20 lower than if the elasticity is estimated using total expenditure as a percentage of GDP.

If the balanced budget requirement for local governments makes local governments reduce their expenditures in downturns when tax

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[27] Unlike the surplus target for the entire public sector, the balanced budget requirement for local governments does not cover net lending, which is calculated without accruing investment expenditure, but with the outcome after the accrual of investment expenditure. But the difference between local government sector results and net lending is small and is approximately the same size from year to year (see Table 1.6).

revenue falls off, the OECD (and the Government's) calculation method will overestimate the budget elasticity and thus the strength of the automatic stabilisers. The estimates need to be adjusted for this. But it is not clear exactly how this should be done.

Local governments may have surpluses to begin with and if deficits ensue, they can be adjusted over the next three years. Table 1.7 in Box 1.4 also shows that local government net lending has varied around zero. There is therefore obviously some margin for local governments to allow variations in net lending to absorb swings in tax revenue. The OECD calculation method may therefore be reasonable in the event of small cyclical shocks. But it may result in substantial errors in the event of large shocks that lead to considerable variation in tax revenue that cannot be absorbed within the room for limited swings in net lending.

It is likely that local government results vary more from year to year than between longer periods. That this appears to be the case is evident from Table 1.8 in the box, which shows that local government net lending was close to zero for the three years 2006-2008 and also looks likely to end up there for the three years 2009-2011. This indicates that a lower budget elasticity should be expected during longer downturns than during shorter ones. Another reason for this may be that in a downturn, wage income, which forms the main tax base for local government, adjusts more slowly than GDP: the impact on companies' profits is quicker.

Our conclusion is that the OECD and the Government overestimate the strength of the automatic stabilisers.[28] The difference is probably small when downturns are minor and short, but it may be significant in the event of major and protracted downturns. For these reasons, the Ministry of Finance should review its analysis of the automatic stabilisers. Below we present some calculations where for illustrative purposes we assume a budget elasticity 20 percentage points lower than the Government's. It probably gives a more accurate estimate for the 2009-2010 downturn, but an underestimation for other years.

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[28] Oddly enough, these problems with the calculations of structural net lending have not previously been analysed in a clear manner, despite the discussion that has taken place on the risk of procyclical behaviour by local governments. The discussion in Flodén (2009) is closest, even though his formulation of the problem is that as a result of the budgetary rules for local governments, "the automatic stabilisers are counteracted".

Box 1.4 Local government finances

Tables 1.7 and 1.8 show how local government finances have developed. Table 1.7 shows that net lending from 2005-2011 peaked at 0.4 per cent of GDP in 2005 and fell to -0.3 per cent of GDP, its lowest point, in 2009. This gives a range of 0.7 per cent of GDP in *annual* net lending. Thus with local government expenditure at about 20 per cent of GDP, a maximum change in the output gap of 3.5 percentage points could be accommodated within the room for a local government budget weakening ($0.2 \times 3.5 = 0.7$). The largest change *from one year to the next* is 0.4 per cent of GDP (between 2009 and 2010), which corresponds to a change in the output gap of 2 percentage points ($0.2 \times 2 = 0.4$). With limited changes in resource utilisation from one year to the next, the balanced budget requirement may not be binding. Our calculation in the text of the size of the automatic stabilisers is therefore likely too tight in such cases. But normally cyclical swings are more protracted and there is reason to believe that the balanced budget requirement will have a stronger impact (cf. the provision that a deficit one year is to be compensated for within three years).

Table 1.7 Local government finances, per cent of GDP

	2005	2006	2007	2008	2009	2010	2011
Net lending	0.4	0.1	0.1	-0.1	-0.3	0.1	-0.2
Output gap	-0.4	1.8	3.2	0.5	-6.7	-3.8	-1.9
Revenue excl.central government grants	18.6	18.4	18.4	18.8	20.0	19.3	19.0
Central government grants	3.9	3.9	3.8	3.5	3.7	4.1	3.7
Expenditure	22.1	22.2	22.1	22.9	24.3	23.6	23.2
Expenditure minus central government grants	18.2	18.3	18.3	19.4	20.6	19.6	19.5
Economic result	0.5	0.5	0.4	0.2	0.4	0.6	0.2

Note: The municipal real estate charge in effect since 2008 has been added to the centrall government grants. Central government grants and revenue excluding central government grants have been adjusted for changes in the grants made to neutralise the effects of various changes in the tax system on local government revenue. Local governments' results are reported before extraordinary items.
Sources: The 2011 Spring Fiscal Policy Bill, the 2011 Budget Bill (for 2005) and own calculations.

Table 1.8 Local government finances in economic upturns and downturns, per cent of GDP

	2006 - 2008	2009 - 2011
Net lending	0.0	-0.1
Output gap	1.8	-3.3
Revenue excl. central government grants	18.5	19.4
Central government grants	3.7	3.7
Expenditure	22.4	23.6
Expenditure minus central government grants	18.6	19.9
Economic result	0.4	0.4

Note: See Table 1.7.
Sources: The 2011 Spring Fiscal Policy Bill and own calculations.

Table 1.8 compares the upturn from 2006-2008 (average output gap of 1.8 per cent) and the downturn from 2009-2011 (average output gap of -3.3 per cent). Net lending was zero during the upturn and -0.1 per cent of GDP during the downturn, i.e. on average, the local government sector had balanced budgets. Local government expenditure was 1.2 per cent of GDP higher during downturns than during upturns. At the same time, local government revenue (taxes and fees) was 0.9 percentage points higher in 2009-2011 than in 2006-2008. On balance, this suggests that the local government sector has not contributed to any automatic cyclical stabilisation between these two three-year periods: the increase in local government expenditure as a percentage of GDP corresponds to an increase in local government revenue.

Alternative estimates of structural net lending

This section presents three alternative calculations of structural net lending:

1. The first calculation estimates structural net lending as actual net lending with an output gap of minus 2 per cent. The reason is that according to Ministry of Finance estimates, the output gaps reported earlier have on average been negative (-2.3 per cent from 1980-2006 according to Finansdepartementet 2010a). The Government's assumption of a budget elasticity of 0.55 is used in the calculation.

2. The second calculation estimates structural net lending as net lending given an output gap of zero, but the budget elasticity is assumed to be 0.35 according to the discussion above

about the impact of the balanced budget requirement for local governments on the automatic stabilisers.

3. The third calculation combines the adjustments in (1) and (2). Structural net lending is thus estimated as actual net lending given an output gap of minus 2 per cent and a budget elasticity of 0.35.

Figure 1.14 shows the alternative estimates of structural net lending for 2006-2015. The first alternative calculation results in a downward adjustment of structural net lending of 1.1 percentage points (2 × 0.55 = 1.1) compared with the Government's calculation. The difference between this alternative calculation and the Government's calculation obviously depends on how asymmetric the output gap is, i.e. to what extent the average output gap deviates from zero. In the assessment which forms the basis for the forecasts in the 2011 Spring Fiscal Policy Bill, the Government has revised the historical output gaps so that the average output gap for 1980-2010 is -0.5. Such a small negative average would result in a difference of only about 0.3 percentage points (0.5 × 0.55 = 0.275) between the first alternative calculation and the Government's calculation. It is unclear to us if this ex post revision of earlier estimates of the output gap is a sign that the computation method used by the Ministry of Finance will in future show less negative gaps. If that is the case, our adjustment is too large.

The second alternative calculation assumes that the automatic stabilisers are weaker than those estimated by the Government. Thus, structural net lending will be higher than the Government's estimate in upturns and lower in downturns. The larger (the absolute value of) the output gap is, the greater the difference between this alternative calculation and the Government's. As can be seen in Figure 1.14, the resultant difference between the Government's calculation and ours was particularly large in 2009 and 2010. According to the Government's calculation, structural net lending was 3 per cent in 2009, while our alternative calculation with a lower budget elasticity indicates a structural net lending of 1.7 per cent. For 2010, the Government estimates a structural net lending of 1.9 per cent while our calculation yields a structural net lending of 1.1 per cent.

Figure 1.14 Alternative calculations of structural net lending, per cent of GDP
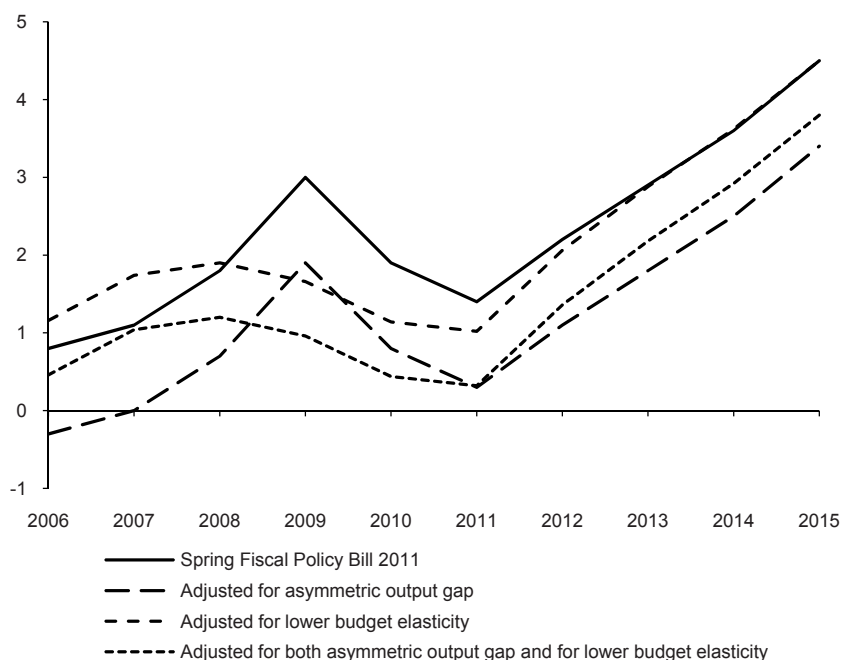
Note: In the alternative calculations, the one-off effects and extraordinary tax revenue have been estimated in the same way as in the 2011 Spring Fiscal Policy Bill.
Sources: The 2011 Spring Fiscal Policy Bill and own calculations.

The third alternative calculation of structural net lending combines the first two alternatives. With this calculation, structural net lending in 2006-2011 is substantially lower than that calculated by the Government. Structural net lending does not come to one per cent of GDP in any of these years.

During the crisis, the Government maintained that because of the strong automatic stabilisers, there is less need of an active cyclical policy in Sweden than in other countries. One factor that contributed to the Government's reluctance to take cyclical measures in autumn 2008 and spring 2009 was presumably that it overestimated the strength of the automatic stabilisers.

Our alternative calculations of structural net lending should not be seen as proposals for how the Ministry of Finance should proceed. The calculations are only to illustrate our criticism in principle of the Ministry's methods. The Ministry of Finance needs to improve them.

More sophisticated calculations should – as discussed in the 2011 Spring Fiscal Policy Bill – build on a disaggregated method, which takes into account that different types of cyclical shocks affect different tax bases differently.[29]

1.2.2 Inquiry on stable local government operations over the business cycle

There was an obvious risk that procyclical behaviour in local governments would exacerbate the economic downturn in 2008/09.[30] To counteract this, discretionary decisions on increases in central government grants to local governments were taken. Last year, the Government appointed an inquiry to analyse and present proposals on how to promote stable local government operations over the business cycle.[31] One of the inquiry's tasks is to analyse whether changes in the rules system for individual local governments could reduce the risk that they will act procyclically. Another task is to investigate the potential for establishing a *local government stabilisation fund* where local governments can make deposits in economic upturns that can subsequently be used to finance expenditures in economic downturns when tax revenues weaken.

It is important to examine these issues promptly and introduce changes swiftly. We have two main comments on the inquiry's remit.

Greater opportunities for municipalities and counties (regions) to vary the budget outcome over the business cycle would be one possible way to reduce the risk of procyclical behaviour. But we see major risks of less budget discipline on the part of local governments if the balanced budget requirement were to be changed so that instead of applying for one year, it applied over a longer period. It would significantly increase the risks that individual local governments would put themselves in situations they may find difficult to handle and that ultimately could force the central government to intervene. Experience from many other countries shows that insufficient budget discipline in local administrations (provincial, regional and municipal) often contributes to fiscal

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[29] The 2011 Spring Fiscal Policy Bill, pp. 197-98. See also Finansdepartementet (2010a).
[30] See, for example, Fiscal Policy Council (2009a), Sections 1.3 and 1.4, and Fiscal Policy Council (2009b).
[31] Dir. 2010:29.

balance crises. Nor is there any reason to expect that individual municipalities would choose a socially desirable degree of cyclical variation in their budgets, because the effects would largely spill over to other municipalities and therefore only partially benefit that particular municipality.[32]

The establishment of a local government stabilisation fund would be a better solution. The aim is that such a fund should be designed so as to minimise the redistributive effects between different municipalities. According to the committee's terms of reference, any future proposals for such a fund should be independent of the general local government grants.

We are surprised that the inquiry's terms of reference did not include investigating a rules system that allows *central government grants to local governments* to vary over the business cycle. Under such a system, the size of the grants could change over the business cycle in accordance with a fixed rule, so that temporary fluctuations in the local government tax base would be offset.[33] It could, for instance, be done by government grants determined in such a way that total local government income is the same as the trend in the tax base (defined over a specified number of years). Such a system seems much simpler than a local government stabilisation fund because it would build on the grants system that has to remain in place regardless.

There are two obvious advantages to a rules system for achieving more stable local government finances over the business cycle, instead of, as is currently done, relying on discretionary decisions. One advantage is that local governments would have a better basis for long-term planning. The other advantage is that there would be less risk that local government budget discipline would deteriorate because of expectations that in recurring negotiations with the central government, it would be possible to get more resources.

Both a cyclically dependent rules system for the grants to local governments and a local government stabilisation fund would strengthen the disciplining role of the central government expenditure ceiling. By dividing the current budget margin into a cyclical margin and a reform margin, as we advocate in Section 2.2, rules-based increases in the grants to local governments in a

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[32] Using traditional economic terminology, individual municipalities would not internalise the total social effects.
[33] See, for example, Fiscal Policy Council (2009a), Section 1.3.3.

downturn would take place under the cyclical margin. A local government stabilisation fund alongside central government expenditures would make generally lower budget margins possible.

1.2.3 Fiscal policy's role in stabilisation policy

Our discussion in the previous section raised the issue of what principles should govern the use of fiscal policy as a stabilisation policy instrument. To what extent should the automatic stabilisers be relied on and when should discretionary (active) decisions be used? Mechanical rules are not desirable. But it is important to draw up *guidelines* in advance to support decision-making in concrete situations.

The 2008 Spring Fiscal Policy Bill preceding the economic downturn expressed the view that monetary policy has the main responsibility for stabilisation policy and that discretionary fiscal policy to counteract cyclical swings should normally be avoided. Those situations in which a discretionary fiscal policy could be justified were very briefly summarised as "crisis situations or in the event of supply side disturbances where fiscal policy may need to support monetary policy".[34] It is likely that the lack of well thought-out principles on when and how it may be appropriate to use fiscal policy for countercyclical purposes was one reason why active stimulus measures in the economic downturn were limited to begin with. In the 2009 Budget Bill (presented in October 2008), a planned reduction in structural net lending was mainly justified on the grounds that net lending exceeded the surplus target and that in a situation with lower resource utilisation, it might be better to be closer to the target, rather than by the need to meet the deep recession with active stimulus measures. The Government also made similar arguments in the last part of autumn 2008 and the beginning of 2009.[35]

The Government Communication on the fiscal framework

During the crisis, the Government gradually developed its fundamental thinking about fiscal policy's stabilisation role. Its

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[34] The 2008 Spring Fiscal Policy Bill, p. 73.
[35] See the 2009 Budget Bill, Section 4.3. and Fiscal Policy Council (2009a), Chapter 1.

current stance is described in detail in the Government Communication on the fiscal framework that was submitted to the Riksdag in March this year.[36] The Communication discussed both how the policy should take the cyclical situation into account in the event of deviations from the surplus target and the role fiscal policy should play in countercyclical measures.

As to the principles for handling deviations from the surplus target, the Communication states that cyclical considerations are important in the choice of when to make an adjustment.[37] If net lending substantially exceeds (falls short of) the surplus target, structural net lending should be lowered (increased) primarily in an economic downturn (upturn). But according to the reasoning given, some reduction (increase) in structural net lending could also take place in other situations provided that demand and inflation "do not exceed monetary policy's ability to deal with them".[38]

The Government Communication again expresses the opinion that the Riksbank has main responsibility for countercyclical measures. When aggregate demand varies, a monetary policy aimed at stabilising inflation around the inflation target also helps stabilise real economic growth. The Communication points out the risks of an active fiscal policy. One risk is that the decision-making process for fiscal policy often takes a long time. As a result, fiscal stabilisation measures may be badly timed. Another danger is that measures intended to be temporary become permanent.

The Communication also specified a number of situations in which discretionary fiscal policy decisions may need to supplement monetary policy. These include *severe supply shocks* when prices and employment move in different directions, resulting in a goal conflict for monetary policy between the objectives of stabilising inflation and stabilising employment. This conflict can be mitigated by changes to certain taxes (such as VAT and social contributions) that have an opposite effect on prices and employment. The Communication also points out situations with *large demand shocks* when "monetary policy alone cannot lessen the drop in demand sufficiently," i.e. "in particular situations when the repo rate

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[36] Government Communication 2010/11:79.

[37] Ibid, Section 3.3.3.

[38] Ibid, p. 14.

approaches zero per cent".[39] It is also stressed that fiscal policy measures can be used to handle various income distribution policy consequences, and to take into account that cyclical shocks may affect different parts of the economy in different ways as well as to offset the specific effects of a cyclical shock, such as the risk that the resultant unemployment will become persistent. Finally, the Communication maintains that in sharp downturns, fiscal stimulus measures can only be used to alleviate, but not to completely eliminate, these specific effects, as the latter would cause an excessive deterioration in public finances.[40]

The discussion of fiscal policy's role in stabilisation policy in the Government Communication is valuable. It is similar to our basic analysis in our first report, where we set two criteria for active fiscal policy decisions aimed at stabilising the economy: (1) the shocks are of such a *magnitude* that the cost of inadequate stabilisation is high, and (2) fiscal policy generates a *value added* to countercyclical measures beyond that contributed by monetary policy.[41] But there are several points where an elaboration of the guidelines would be desirable.

The Communication does not currently give any indication of what is meant by 'severe supply shocks' and 'large demand shocks'. Such indications would be important in reducing the risk of excessive use of fiscal policy. They could, for example, be expressed in terms of thresholds for projected output gaps or changes in unemployment/employment that would have to be exceeded before active fiscal policy measures are considered.

Furthermore, there are no guidelines in the Government Communication for fiscal policy in situations with rapidly growing credit and large increases in housing prices. If financial regulation instruments are insufficient for counteracting such a development to the extent desired, monetary policy may face a dilemma. A conflict may emerge between achieving the inflation target and ensuring financial stability. An interest rate policy that enables the inflation target to be met may allow excessive increases in credit and in asset prices. An interest policy that instead focuses on financial developments may result in inflation substantially below the target.

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[39] Ibid, p. 34.
[40] Ibid, pp. 34-35.
[41] Finanspolitiska rådet (2008), Sections 1.3 and 2.4.

Fiscal policy could make a contribution in such a case. A mix of a monetary policy that is tighter than necessary to meet the inflation target and an expansionary fiscal policy compensating for this may make it possible to simultaneously meet the inflation target, stabilise the economy and achieve a balanced growth in credit and asset prices.

Alternatively, *targeted* fiscal measures, such as changes in investment income taxation including interest deductions, changes in stamp duties , etc., could be used for decoupling monetary policy from any need to *influence* credit and housing prices. In our view, there is a need for the Government to develop principles on how fiscal policy could be used for such purposes.[42]

In its Communication, the Government discusses the kinds of fiscal measures that are appropriate in economic downturns. It differentiates between (1) temporary measures; (2) permanent measures which are 'structurally warranted'; and (3) permanent measures justified by income distribution policy considerations. The Government warns that temporary measures risk becoming permanent. It look most positively at 'structurally warranted' measures, meaning measures which increase employment and output in the long term and thus help avoid bottlenecks when the economy strengthens.[43]

The Government Communication does not take any explicit position on how stabilisation policy measures should be allocated among the three categories. But the Government's actions during the crisis provide some indication of its priorities. About 2/3 of the fiscal stimulus measures in 2010 were permanent and about half of the latter an earned income tax credit.[44] There are reasons to warn against the risks of such an allocation if it becomes a guide for policy – if the downturn had become protracted and resulted in high permanent unemployment, the strong emphasis on permanent measures could have created long-term problems for public finances. There are also reasons to remember that temporary measures directed at low-

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[42] See Chapter 5 for further discussion.

[43] Regeringens skrivelse 2010/11:79, pp. 35-36. We have previously criticised the Government's distinction between 'structurally warranted' measures and measures 'justified by income distribution policy considerations', as the terms imply value judgements which conceal conflicts between different objectives. A 'structurally warranted' measure could as well be referred to as 'unjustified by distribution policy considerations' and a measure 'justified by distribution policy considerations' as 'structurally unwarranted' (see Fiscal Policy Council 2009b, p. 25).

[44] See Fiscal Policy Council (2010), Section 1.3.2.

income households, which have a high marginal propensity to consume, can be expected to produce significant demand effects.

1.2.4 Conclusions

We have pointed out a number of problems with the way in which the Government estimates structural net lending. We think that this indicator, as it is currently estimated, is not useful for following up the surplus target. The Ministry of Finance urgently needs to improve its methods in this area. Structural net lending should not be estimated using an output gap which is negative on average, since it will result in an overestimation of net lending in an average cyclical situation. Another important question to take a position on is to what extent the balanced budget requirement for local governments weakens the automatic stabilisers, which could result in an overestimation of structural net lending in downturns and underestimation of it in upturns.

2 The scope for reform and the fiscal framework

This chapter has two main parts. Section 2.1 discusses the role estimates of the scope for reform play in fiscal policy, the relationship between the scope for reform and the surplus target, and the Government's estimates of the future scope for reform. Section 2.2 analyses the expenditure ceiling and how it is decided for the next few years. Section 2.3 discusses the reporting of public sector investment and real capital stock. Section 2.4 summarises the conclusions.

2.1 Scope for reform

Since the 2008 Spring Fiscal Policy Bill, estimates of the *scope for reform* have played a decisive role in the design of fiscal policy. The budget bills include estimates of this scope as a basis for budget decisions. The importance of the Government's estimate of the 'scope for reform' was particularly evident in 2010, as the opposition both in the election campaign and in its joint 2011 budget motion agreed with the Government's estimate.

It is of considerable value that the fiscal policy debate is based on an explicit estimate of "what we can afford". It is also of considerable value, if this estimate does not become politicised but is instead seen as a technical matter. That this has been achieved is a significant success for the Government. At the same time it is important for the legitimacy of fiscal policy that the estimate of the scope for reform be transparent. The Government could substantially improve its explanation in this respect. Even the term scope for reform easily results in misunderstandings. A better explanation of why there is usually a scope for "reforms that do not need to be financed" would be desirable.

Section 2.1.1 analyses the concept of scope for reform. Section 2.1.2 discusses the surplus target, which is a key factor in estimating the scope for reform. Section 2.1.3 examines the Government's estimate of the scope for reform over the next few years.

2.1.1 Scope for reform

Despite the key role assigned the concept 'scope for reform', neither the latest Spring Fiscal Policy Bill nor the latest budget bill contains any explicit definition, even though the meaning can be inferred from the discussion as a whole. A short definition is:

The scope for reform = the total sum of permanent tax reductions and expenditure increases that can be actively decided by the Riksdag (the Swedish Parliament) and that are compatible with the target that the general government net lending should show a surplus of one per cent of GDP over a business cycle.

The term 'scope for reform' is actually misleading as it is of course possible to carry out more reforms (= costly economic policy changes) than indicated by the 'scope for reform'. If the scope for reform is SEK X billion, a tax reduction of SEK $X + Y$ billion can indeed be carried out without jeopardising the surplus target given that public expenditure declines by SEK Y billion. Likewise an expenditure increase of SEK $X + Y$ billion can be implemented if tax revenue increases by SEK Y billion. The term chosen could possibly be interpreted to mean that it is considered 'normal' for decisions on budgetary changes to be divided between tax cuts and spending increases (see below). *Fiscal space* would be a better term. But in our subsequent discussion, we will for the most part also use the term scope for reform so that Swedish readers will recognise it, even though in our opinion the term should be replaced with the term fiscal space.

Why is there scope for reform?

Scope for reform should normally be expected to emerge in accordance with the definition given above. The explanation is as follows. Most taxes are proportional, i.e. a given percentage is applied to the relevant tax base. Tax revenues therefore grow in the long run at about the same pace as GDP. But without active decisions, public expenditure grows more slowly than GDP. Only some expenditures are tied to wages (which are likely to grow at the same rate as nominal GDP in the long run). Other expenditures are linked to wage increases, but with certain deductions for productivity increases. Some expenditures are indexed to prices and thus increase

more slowly than nominal GDP. Certain expenditures are not indexed at all and thus fall in real terms when prices rise.[45] If the Riksdag (the Swedish Parliament) does not take any discretionary measures on changes in tax rates or that part of public expenditure that does not follow wages (GDP), general government net lending will tend to increase. Without active decisions on 'budget weakening', net lending would gradually increase relative to the surplus target.[46]

Our discussion indicates one more problem with the term scope for reform. Some of the scope depends on the fact that public expenditures that are fixed in nominal terms (for example, child allowances and unemployment benefits for those who exceed the unemployment insurance ceiling) fall in real terms when there is inflation. This part of the scope for reform thus originates when 'old reforms' are diluted in the absence of new decisions. The same can be said to be the case when various insurance benefits decline relative to wages and thus provide less insurance.

The Budget Bills do not give a good explanation of why there normally is scope for reform. The only (related) discussion in the 2011 Budget Bill concerns the effect of fiscal policy on demand (but which is not found in connection with the analysis of the scope for reform), where it is stated that "several other factors in addition to discretionary fiscal policy and the automatic stabilisers affect public finances." Examples given of such other changes include "the composition of GDP growth, changes in capital income and interest expenditure as a result of changes in public sector assets and liabilities, changes in interest rates, and trends in expenditures on social benefits owing to demographic trends or behavioural changes" as well as "policy decisions in the local government sector".[47] But nothing is said about the tendency for net lending to improve because a large part of public expenditure does not automatically follow nominal GDP. But in the 2011 Spring Fiscal Policy Bill, there is an explanation, but then only in a (very out of the way) place far from the discussion on the scope for reform.[48]

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[45] See Box 2.1.

[46] This is described in mathematical terms in Appendix 3.

[47] Budget Bill for 2011, p. 82.

[48] The explanation given is as follows: "With normal economic growth and without additional discretionary fiscal measures, tax revenue normally increases at the same pace as GDP, while expenditure decreases as a percentage of GDP. This is partly because some expenditures are not indexed and temporary programmes come to an end." (The 2011 Spring Fiscal Policy Bill, p. 180).

Table 2.1 Annual change, per cent of GDP

	2012	2013	2014	2015
Net lending	**1.5**	**1**	**0.8**	**0.8**
of which:				
Automatic stabilisers	0.7	0.4	0.1	0
One-off effects	0	0	0	0
Extraordinary capital gains	0	0	0	0
Structural net lending	0.8	0.6	0.7	0.9
of which:				
Discretionary fiscal policy	*0.4*	*0.2*	*0.1*	*0.1*
Capital costs, net	*-0.1*	*-0.1*	*0*	*-0.5*
Local government finances	*0.1*	*0*	*0*	*0*
Other	*0.5*	*0.5*	*0.6*	*1.3*
Change in GDP gap, percentage points	**1.2**	**0.6**	**0.2**	**0.1**

Note: Discretionary fiscal policy refers to expenditure and revenue changes relative to reforms adopted, proposed or announced in previous years.
Source: The 2011 Spring Fiscal Policy Bill, Table 10.3.

The tendency for there always to be scope for reform in the budget bills may be seen in a table in connection with the discussion of the effects of fiscal policy on demand as reported above. The table divides general government net lending into different factors (Table 2.1 above). The tendency to stronger general government net lending attributable to public expenditures that do not automatically follow GDP is included in the table as part of the item 'Other'. This item is positive for each of the coming years shown (0.5-1.3 per cent of GDP from 2012-2015). But this table does not feed back to the discussions on the scope for reform.

Even though there is normally a positive scope for reform, it may be negative in some years. This is due to other factors – for example, interest rate increases, more pensioners or more people on sick leave or early retirement – that may prevail over the tendency to budget improvement that results because most expenditures do not automatically follow GDP developments. There is then a *need for consolidation measures.*

The cyclical situation

The surplus target is to be met over a business cycle. The scope for reform for a given year therefore might not coincide with the adjustment in net lending needed to meet the target in that year. On the contrary, the Government has made it clear that the cyclical situation will be taken into account in deciding how possible deviations from the surplus target will be adjusted. How to factor in the cyclical situa-

tion has been developed in the context of the Ministry of Finance's review of the surplus target in particular.[49] The conclusion is that in booms, the scope for reform should be adjusted downwards to allow the surplus target to be exceeded. Likewise, the scope for reform should be adjusted upwards in sharp downturns so that the surplus is below the target.

One problem with estimates of the scope for reform as a basis for fiscal policy is that *temporary* measures aimed at influencing the business cycle do not quite fit into the conceptual framework. Its aim is to provide a basis for decisions on *permanent* tax reductions or expenditure increases ('reforms'). Bringing forward or postponing these reforms for cyclical reasons is fully compatible with the conceptual framework. But there does not need to be a permanent budget improvement (because expenditure does not follow GDP) to create fiscal space for a temporary economic stimulus (which could hardly be described as a 'reform'). It is possible that the fact that a significant part of the economic stimulus measures taken during the deep recession took the form of permanent changes (for example, the earned income tax credit and reduced taxes for those over 65) is because the conceptual framework was designed to assess the scope for permanent reforms.

Deficit or surplus tendencies

There is extensive research on why there is typically a *deficit bias* in public finances when fiscal decisions are made on a discretionary basis (i.e. from case to case) rather than being rules-based.[50] In recent years, problems in government finances in many countries have demonstrated these risks.

The fiscal framework in Sweden is important in explaining fiscal discipline here. The features most commonly cited are a *top-down* budget process (where expenditure limits in various areas are established as a first step, and then decisions on individual expenditures that cannot be increased without the others being reduced are binding), the surplus target, the expenditure ceiling, the balanced budget requirement for local governments and external evaluation of whether the fiscal targets have been met. The automatic budget im-

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[49] Finansdepartementet (2010a).
[50] See, for example, Finanspolitiska rådet (2008) or Calmfors and Wren-Lewis (2011).

provement that occurs because many public expenditures do not follow GDP, combined with the process of establishing an annual scope for reform for new decisions, is an operationalisation of the rules that contribute to budget discipline. It is even possible that this decision model may create a *surplus bias* instead of a *deficit bias.*

The decision model is well designed for a gradual lowering of taxes and public expenditure as a share of GDP. A process in which the active decisions each year are based on an estimate of the scope for reform (the sum of possible tax reductions and expenditure increases that are compatible with the surplus target) creates a situation that makes it natural to divide this scope between tax reductions and expenditure increases. Since the scope for reform emerges when public expenditure, in the absence of active decisions, does not follow GDP, the result is a gradual decline in both taxes and public expenditure in relation to GDP. Whether or not this is viewed positively depends on political value judgements.

But there is a tension between the Government's estimates of the scope for reform and the estimates of whether fiscal policy is sustainable in the long run. The sustainability calculations that we discuss in detail in Chapter 4 show how public finances develop in the long run, assuming that the demographic trends and tax rates as well as regulations that govern public expenditure are kept unchanged. But 'unchanged regulations' are interpreted here – unlike in the estimates of the scope for reform in the short run – to mean that even transfers lacking an automatic standard guarantee increase in line with wages and thus with GDP.[51] This poses a risk for the long-term stability of government finances. If the scope for reform expected to emerge in the short run – because some public expenditures do not automatically follow GDP – is used for new 'reforms' (other expenditure increases or tax reductions), political pressure may mount to subsequently restore the diluted transfers at a level in line with wage developments. If the earlier 'reforms' cannot then be revoked, fiscal balance problems may emerge.

The decision-making system based on estimates of the scope for reform is probably perceived as *politically appealing*. It gives the Government the opportunity each year to present a number of 'reforms', even though these imply solely that the value of previous transfer

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[51] See, for example, the 2009 Spring Fiscal Policy Bill, Appendix 4.

payments is maintained. Decisions that in practice only involve maintaining previous reforms may in other words be presented as *new* reforms. If the Government wishes to implement tax reductions or new expenditures increases, it can be done without any active decisions to weaken previous reforms. The opposition may also take advantage of this, because it also will have scope for reform that it can likewise use in its proposals.

The economic policy debate would gain from greater clarity about how the scope for reform comes about. It would make it easier for the public to take a position on fiscal policy. One possibility would be to divide the scope for reform into the different items that have contributed to it. These could, for example, include:

- Reductions in the real value of public expenditures not indexed to the price level.
- The scope for reform that emerges because (potential) real GDP grows and many public expenditures do not follow GDP.
- Changes in public expenditure as a result of demographic changes.
- Changes in expenditure as a result of the change in the number of benefit recipients in different social insurance systems (sickness insurance, unemployment insurance, etc.) for reasons other than demography.
- Changes in net lending as a percentage of GDP as a result of increases in various tax bases (for example, earned income) at a different rate than GDP.
- Changes in general government net financial result.
- Desired deviations from the surplus target during a specified period due to the cyclical situation (or because of previous deviations from the target).

Reporting could be made more or less detailed. An attempt at decomposition that can be seen as a first step towards what we would like to see is made in Box 2.1.[52] The point of such reporting is that it would make it easier for the public to weigh the tax cuts and expenditure increases that the scope for reform is used for against the financing resulting from the emergence of the scope for reform.

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[52] See also Appendix 1.

Box 2.1 An attempt at decomposition of the scope for reform 2012-2014

The National Financial Management Authority (ESV) has at our request estimated how different components, in the absence of active decisions, are likely to contribute to the development of cyclically adjusted net lending over the next few years.[53] Table 2.2 presents the main results.

The Table differentiates between three types of government appropriations:

- Central government transfers primarily to local government and the business sector, but excluding households. These grants are fixed in nominal terms, i.e. denominated in kronor. The largest items are local government grants and payments for pharmaceutical benefits. In 2011 both these types of support account for about SEK 110 of the SEK 154 billion in this appropriation.

- Central government administrative appropriations. Depending on the type, they are adjusted upwards with price or wage developments but with a deduction. Thus, for example, appropriations for wages would be adjusted upwards by the change in the hourly wage in the business sector less a productivity deduction (change in productivity for workers in the private sector). Rents, which cannot be renegotiated during the fiscal year, are adjusted upwards by 70 per cent of the CPI increase. In total, this type of appropriation comes to nearly SEK 232 billion in 2011.

- Transfer payments to households, of which many – but not all – are adjusted upwards with price or wage increases without deductions (ESV calls these appropriations rules-based). The total sum in 2011 is SEK 389 billion.

The table shows that in the absence of active decisions, an annual strengthening of general government net lending ranging from 0.4 to 0.5 per cent of GDP is likely because government spending does not automatically follow GDP (the row Total contributions from non-indexation to GDP). The largest contributions come from the

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[53] Ekonomistyrningsverket (ESV) (2011).

nominally fixed transfer payments, mainly to the business sector and local government (row 3) and the administration appropriations (row 4), while the contribution is somewhat less from transfer payments to households (rows 7 and 8).

Table 2.2 Emergence of the scope for reform, per cent of GDP

	2012	2013	2014	2015
Change in cyclically-adjusted budget balance (1)	1.06	0.86	0.80	0.39
Contribution from nominally fixed taxes (2)	-0.02	-0.02	-0.02	-0.02
Contribution from nominally fixed transfer payments to local governments, the business sector, etc. (3)	0.28	0.22	0.18	0.18
Contribution from government administration appropriations that do not follow GDP (4)	0.25	0.15	0.15	0.07
Contribution from transfer payments to households that do not follow GDP (5)	0.41	0.40	0.31	0.21
of which:				
changes in volume (6)	*0.29*	*0.25*	*0.17*	*0.07*
lower real benefit payments (7)	*0.04*	*0.04*	*0.02*	*0.03*
other (8)	*0.09*	*0.12*	*0.12*	*0.11*
Contribution from change in net financial result (9)	0.00	0.11	0.11	0.19
Other contributions (10)	0.13	0.00	0.06	-0.24
Total contributions from non-indexation to GDP (2+3+4+7+8)	**0.64**	**0.51**	**0.45**	**0.37**

Note: In the estimates it has been assumed that local government net lending is not affected by the size of the central government grant.
Source: ESV (2011).

The table also shows that a reduction in the number of recipients in the transfer systems to households (row 6) makes a substantial contribution in the next few years (0.2-0.3 per cent of GDP). But this contribution is less than half the contribution from the non-indexation to GDP. A larger financial surplus provides a contribution of about 0.1 per cent of GDP (row 9). This is due to the gradual improvement in the net financial worth position as a result of the assumed future surpluses.

2.1.2 Surplus target follow-up

The Government's basis for estimating the scope for reform is an assessment of how in step fiscal policy is with the surplus target. To meet this target, general government net lending is to show a surplus of one per cent of GDP over a business cycle. The Government has previously used five different indicators to follow up the surplus target:

- A *backward-looking* average from 2000 (the first year that the surplus target was fully in force).
- A corresponding cyclically adjusted average.
- A partially *forward-looking* indicator which is a seven-year moving average (actual values for three years back and forecasts for the current year and three years ahead).
- A corresponding cyclically adjusted average.
- *Structural* net lending (actual net lending adjusted both for the cyclical situation and for major one-off effects and extraordinary levels of household capital gains) for the year.[54]

Both the Swedish National Audit Office and the Fiscal Policy Council have criticised the large number of indicators and the uncertainty about the relative weight assigned to each indicator because of the possibility of arbitrary judgements.[55] In our opinion, the Government has unfortunately confused evaluation of whether the surplus target *has* been met (which by definition must be backward looking) with preparation of a *planning basis* for future fiscal policy (which can never constitute an evaluation of whether the target has been met).

The Government's position is that it is desirable to avoid a 'mechanical evaluation' and instead make an overall assessment where various factors can be considered together on a case-by-case basis. But beginning with the 2010 Spring Fiscal Policy Bill, the Government has chosen to play down the backward-looking analysis. It has also been modified and the Government will in future use a moving ten-year average (instead of always calculating backward to 2000). The Government's focus is on structural net lending and the

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[54] See Section 1.2.1.
[55] See, for example, Riksrevisionen (2008, 2011a) and Fiscal Policy Council (2009a), Section 2.2.

two forward-looking seven-year indicators.[56] The aim of the backward-looking analysis, according to the Government, is primarily to assess "whether there are tendencies for systematic errors in fiscal policy's relationship to the surplus target that reduce the probability of meeting the surplus target in the future".[57] But no previous failure to meet targets will lead to fiscal policy changes intended to compensate for this.

Social efficiency considerations might justify the emphasis on a forward-looking perspective. Under these criteria, the aim is to try to achieve *tax smoothing,* i.e. (marginal) tax rates are smoothed out over time so as to minimise the total social efficiency losses of taxation over time. (Since these losses are likely to increase more than proportionally to the marginal tax rate, it is better to have a constant tax rate than one that varies between higher and lower levels). A temporary increase in public spending as a result of a shock to the economy, should, according to this view, be allowed to result in higher public debt. One should not try to reduce debt again. Instead, the best strategy is at all times to accept the debt level 'accidentally' inherited and use it as the basis to try to maintain an even level of taxation in the future (which must cover future expenditure including the interest on the debt).[58]

But there are several objections to the focus put on applying a tax-smoothing perspective to the surplus target. First, the argument for *tax-smoothing* assumes that current generations fully take into account the welfare of future generations and that therefore there are no intergenerational income distribution conflicts. If instead one assumes that there are such n conflicts, the income distribution argument indicates that earlier deviations from the surplus target should be compensated for.

Second, the debt level is of key importance in having room for manoeuvre in stabilisation policy. The government debt crises in

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[56] In the 2011 Budget Bill, the backward-looking indicators were not reported in the Budget Statement but only in the section Budget policy objectives, scope for reform and proposed expenditure ceiling. One more forward-looking indicator, estimated as the average value of the unadjusted and the cyclically adjusted seven-year indicator, was also added. This increase in the number of indicators was criticised – and rightly so – by the Swedish National Audit Office (Riksrevisionen 2011a). No such average value was estimated in the 2011 Spring Fiscal Policy Bill. It also reported the backward-looking indicators in the Budget Statement.

[57] The 2011 Budget Bill, p. 83.

[58] Barro (1979) was the first to analyse *tax smoothing*. See also Auerbach (2008) and Calmfors and Wren-Lewis (2011).

several euro countries have shown how high debt levels can lead to such big increases in interest rates on government debt that there have to be sharp fiscal consolidations in a situation with low resource utilisation.

Third, there is a risk that overemphasising a forward-looking perspective will weaken the incentives to actually try to achieve the surplus target. If the 'evaluation' primarily refers to future developments, it will always be possible to claim that the target will be met at a later date. But the incentives to do so may be weak if a missed target does not require a compensating fiscal tightening which might have a political cost. Fiscal developments in recent years have led to a high level of credibility that the surplus target will continue to be met in the future. But there is a *risk* that de-emphasising earlier achievements may weaken fiscal discipline in the future.[59] Even though this may seem unlikely now, the fiscal framework should be constructed so that this risk is minimised.[60]

In light of this, we argued in last year's report that a backward-looking perspective should be assigned more importance when following up the surplus target than it is under the Government's approach.[61] We recommended that only *two* main indicators be used: one backward-looking and one forward-looking. The two indicators should cover equal amounts of time. If the backward-looking indicator covers ten years, then the forward-looking indicator should also, since it would provide a better basis for forecasts for estimating whether the target is likely to be met during a given ten-year period.

Our proposal was to estimate a (partially) forward-looking ten-year indicator as an average value for actual net lending for the past six years and forecasts for the current year and the coming three years. We recommended that both the backward-looking and the forward-looking indicators be estimated without cyclical adjustment. As a next step, an assessment could be made of whether any previous or current cyclical situation might justify deviating from the target and if so, by how much. The advantage of such an approach is that it

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[59] Calmfors and Wren-Lewis (2011).

[60] The British experience is a good eye-opener. The rules introduced by the Labour government in 1997 that the public sector over the business cycle would only borrow for (net) investment and that net debt would be kept under 40 per cent of GDP were long seen as guarantees of fiscal discipline but these rules were ultimately compromised. The consequence was that Britain went into the economic crisis with weak public finances (see, for example, Calmfors 2011).

[61] See Fiscal Policy Council (2010), Section 4.1.4. The National Audit Office (Riksrevisionen 2011a) makes a similar argument.

would better highlight possible trade-offs between long-term budgetary targets and the stabilisation target.

We thus share the Government's view that flexibility is desirable so that the cyclical situation can be taken into account. But failure to meet the surplus target should in our opinion be given considerable attention in the public debate. We therefore proposed in last year's report that the Government should be obliged to present a *special communication* to the Riksdag in the event of deviations from the target and that the Riksdag should then seek the opinion of the Fiscal Policy Council, the National Audit Office and the National Institute of Economic Research. The communication should analyse why the situation arose and what possible measures might be called for. The OECD supports this proposal in its most recent Sweden Report.[62]

The Government is of the opinion that such a procedure is unnecessary since under an amendment to the Budget Act in 2010, it is now obliged to report to the Riksdag at least twice a year on how the surplus target is being met. These reports are made in the Spring Fiscal Policy Bill and the Budget Bill "where possible measures to handle deviations are presented".[63] But experience shows that the debate related to these bills usually focuses on the Government's assessment of the economic situation and the concrete proposals presented. The discussion of the surplus target easily gets lost in the more general discussion. It may therefore be important to create special institutional forms for following up the surplus target in order to ensure that it will receive sufficient attention. This could, for example, be done by making the communication the subject of an open hearing of the Committee on Finance and a special debate in the Riksdag.

2.1.3 Scope for reform, 2011-2014

The 2011 Budget Bill contains assessments of the scope for reform for both 2011 and 2012-2014. The 2011 Spring Fiscal Policy Bill extends the analysis to 2015 as well. The estimates have been made based on an analytical framework chosen by the Government for following up the surplus target. We have objections to this

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[62] OECD (2011).
[63] The 2011Budget Bill, p. 263.

framework.[64] But our discussion for the most part follows the Government's analytical framework and scrutinises how it has been used.

The estimated scope for reform for 2011 in the Budget Bill for that year formed the basis for the discretionary fiscal policy decisions proposed there. The forecast for 2012-2014 serves as the basis for the future *reform ambitions* that are presented. It is wise that the Government in this way made a forecast of its own fiscal policy, since it provides households and businesses with a better basis for their future expectations. We have called for forecasts like this from the Government as an alternative to the mere projections that are all that was reported earlier.[65] These only take into account policy that has been *adopted or announced* and therefore, for the reasons reported in Section 2.1.1, systematically overestimate future government net lending.

The estimate for 2011

For 2011 the Government estimated a scope for reform of SEK 13 billion, or almost 0.4 per cent of GDP. Discretionary measures of this scope were also taken. As Table 2.3 shows, the unadjusted backward-looking ten-year average for 2001-2010 is 0.8, which is below the target of one per cent of GDP. But the cyclically adjusted backward-looking average exceeds one per cent of GDP. Both the forward-looking seven-year indicators for 2010 and 2011 also exceed the target. Structural net lending for 2011, with the Government's method of estimating it, will be 1.4 per cent of GDP. In the 2011 Budget Bill, the Government's overall assessment was that fiscal policy this year is compatible with the surplus target.66 Based on the information reported in the 2011 Spring Fiscal Policy Bill, this appears ex post to have been a reasonable assessment if the main emphasis is put – as the Government does – on the forward-looking indicators and structural net lending (estimated according to the Government's method). The assessment appears more doubtful if the unadjusted backward-looking indicator is stressed. Table 2.3 shows that this is also true using a revised estimate of structural net

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[64] See Section 2.1.2 above.
[65] Fiscal Policy Council (2009a), Section 2.2.1.
[66] One comes to the same conclusion if the estimate is instead based on the forward-looking ten-year indicator discussed in Section 2.1.2 which has a value of 1.9. This is also reported in Table 2.3.

Table 2.3 Net lending and indicators for whether the surplus target is achieved, per cent of GDP and potential GDP respectively

	2010	2011	2012	2013	2014	2015
Net lending	-0.3	0.3	1.8	2.8	3.6	4.4
Backward-looking ten-year average	0.8					
Cyclically adjusted ten-year average	*1.3*					
Seven-year indicator	1.3	1.3	1.6			
Cyclically adjusted seven-year indicator	*2.1*	*2.3*	*2.7*			
Structural net lending						
2011 Spring Fiscal Policy Bill	1.9	1.4	2.2	2.9	3.6	4.5
2011 Budget Bill	0.6	1.0	2.0	2.7	3.2	
Our alternative estimate 1	0.8	0.3	1.1	1.8	2.5	3.4
Our alternative estimate 2	1.1	1.0	2.1	2.9	3.6	4.5
Our alternative estimate 3	0.4	0.3	1.4	2.2	2.9	3.8
Our forward-looking ten-year indicator		1.9				
GDP gap	-3.8	-1.9	-0.7	-0.1	0.1	0.0
Seven-year average	-1.4	-1.8	-1.9			
Backward-looking ten-year average	-0.9					

Note: The cyclical adjustment is made by decreasing the indicator's value by the GDP gap for the corresponding period multiplied by an assumed budget elasticity of 0.55. The cyclically adjusted seven-year indicator is not identical to a seven-year average for structural net lending, as structural net lending is also adjusted for extraordinary revenues from capital gains taxes and one-off effects. Our alternative estimate 1 of structural net lending adjusts the Government's estimate, which is based on a GDP gap that is on average negative. Alternative estimate 2 assumes a budget elasticity of 0.35 instead of the Government's 0.55. Alternative estimate 3 combines the adjustments in estimates 1 and 2. The estimates are described in more detail in Section 1.2.2.
Sources: The 2011 Spring Fiscal Policy Bill and own calculations.

lending that takes into account that the average GDP gap was previously negative in accordance with our discussion in Section 1.2.2. In this estimate (alternative 1), structural net lending is 0.8 per cent of GDP in 2010 and 0.3 per cent in 2011. If both the negative average GDP gap and the lower budget elasticity discussed in Section 1.2.2 are taken into account, structural net lending is instead 0.4 and 0.3 per cent respectively for these two years.

The Government's estimate of the scope for reform for 2011 in the Budget Bill for that year appeared even more dubious when they were made since there were more pessimistic estimates of future net lending then than in the 2011 Spring Fiscal Policy Bill. In the Budget Bill, the forward-looking seven-year indicator was estimated at 0.8 for 2010 and 0.7 for 2011.

The National Audit Office (Riksrevisionen 2011a) has criticised the Government for not clearly reporting how it arrived at the

SEK 13 billion scope for reform for this year shown in the 2011 Budget Bill. We agree with this criticism.

The estimate for 2012-2014

The 2011 Budget Bill also contains a preliminary assessment of the scope for reform for 2012-2014. The basis for the estimate was that general government net lending "is to show a surplus of 1 per cent of GDP in line with the surplus target when the economy and resource utilisation have normalised", which is assumed to be in 2014.[67] This was operationalised as a target for structural net lending of at least *two* (our italics) per cent this year. The justification for the target of two per cent is "that a reasonable safety margin for the surplus target for structural net lending is at least 1 per cent of GDP".[68]

The Budget Bill's wording that structural net lending should come to two per cent of GDP by 2014 created uncertainty about whether the Government had raised the surplus target. This uncertainty creates doubts about the long-term direction of fiscal policy and is therefore unfortunate. In the 2011 Spring Fiscal Policy Bill, the Government justifies the need for a safety margin for the surplus target for structural net lending with the uncertainty that exists about the latter. The Government argues both that that business cycles may be asymmetric (i.e. the output gap, which we discussed in Section 1.2.1, has been negative on average) and that different methods to calculate the GDP gap and structural net lending generally yield different outcomes and that subsequently there are often major revisions.[69] The 2011 Budget Bill also referred to the uncertainty resulting from the risk that cyclical developments will be worse than expected, the risk of major long-term adverse effects on the labour supply and on productivity growth in the long run as a result of the recession, and the need to have greater safety margins over longer time horizons.[70]

Clarity in formulating fiscal policy objectives is adversely affected by simultaneously using several numerical surplus targets. This should be avoided. Therefore the GDP gap used in estimating structural net lending should be calculated so that it is on average

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[67] The 2011 Budget Bill, p. 87.
[68] Ibid, pp. 89-90.
[69] The 2011 Spring Fiscal Policy Bill, p. 31 and pp. 197-201 respectively.
[70] The 2011 Budget Bill, pp. 89-90.

zero (see Section 1.2.1). Our alternative estimates 1 and 3 in Table 3.2 are a rough attempt at doing this.

The general uncertainty surrounding cyclical developments, their long-term effects on employment and productivity growth and long-term trends in government finances do not justify a target for structural net lending higher than the surplus target. The need for *precautionary savings f*or handling unforeseen events should in principle *be met via the level chosen for the surplus target.*[71] The desire for safety margins ahead of future crises is one of the main factors used to justify the one per cent target.[72] It will be *double-counting* if the general uncertainty that always exists is first used to justify this target and then that same uncertainty is used to justify why it also should always be exceeded.

It is more logical to argue that the uncertainty about just how structural net lending should be estimated could be an argument for a higher target for structural net lending (if it is used as an indicator) than for the actual net lending desired.[73] But this shows only that structural net lending is a poor indicator of whether the surplus target is met. We have therefore recommended using only two simpler indicators: both an unadjusted backward-looking ten-year average and a forward-looking ten-year average.[74]

It appeared unclear in the 2011 Budget Bill why the safety margin for structural net lending in relation to the surplus target should be exactly one per cent of GDP. The fact that the Ministry of Finance has previously estimated the average GDP gap at about minus two per cent of GDP could *alone* justify the safety margin of one per cent of GDP that the Government specified in the Budget Bill.[75] It would have been desirable for the Government to provide a clearer argument for why it stopped at just *one* per cent, i.e. an explanation of what importance is attached to the risk of asymmetric business cycles and other kinds of uncertainty. In the Spring Fiscal Policy Bill, the Government's opinion was that "the need for a safety margin has now lessened somewhat as a result of the more balanced risk

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[71] See Finanspolitiska rådet (2008), Section 1.1.1.
[72] See the 2010 Spring Fiscal Policy Bill, p. 226 and Ministry of Finance (2010a).
[73] The 2011 Spring Fiscal Policy Bill (Sections 2.3.1 and 10.2.3) puts more stress than the 2011 Budget Bill on the uncertainty in the estimates of structural net lending.
[74] See Section 2.1.2.
[75] See Section 1.2.2.

picture".[76] Here a clarification of the estimate would also have been desirable.

In the 2011 Budget Bill, the Government used the structural net lending target for 2014 as the basis for a preliminary estimate of the scope for reform from 2012-2014. Structural net lending was allowed to gradually increase over the period to two per cent of GDP by 2014. This gave an estimated scope for reform of about SEK 48 billion for the entire period (referring to costs up to and including the year 2014). For 2012, the preliminary scope for reform given was about SEK 15 billion.

The Spring Fiscal Policy Bill does not contain any similar estimates. But it states that the scope for reform is currently thought to be somewhat larger than that given in the Budget Bill.[77] A more precise estimate is not given. When the Spring Fiscal Policy Bill was presented, a memorandum with various preliminary tax proposals was published.[78] The most important proposals concern a fifth step in the earned income tax credit (cost of SEK 12 billion), a higher threshold for the state income tax (cost SEK 3 billion), an increase in the basic allowance for people over 65 (cost SEK 2.3 billion) and an increase in the excise taxes on tobacco and alcohol (revenue of SEK 2.2 billion). Even though the Government clearly states that the final position it adopts depends on the estimates that will be made for the 2012 Budget Bill, the detailed presentation of these tax proposals has to be seen as a strong indication that there is presumed to be scope for them in 2012. The net cost to public finances will be about SEK 16 billion (if no dynamic effects due to behavioural changes are taken into account). The Spring Fiscal Policy Bill also appears to open up the possibility of implementing the announced reduction in the value-added tax on restaurant and catering services as early as 2012.[79] It is furthermore reasonable to suppose that measures will also be taken on the expenditure side. All in all, this indicates that the Government has substantially revised upwards its estimation of the scope for reform for 2012.

It is unclear to us why the Government already in the 2011 Spring Fiscal Policy Bill chooses to so explicitly specify proposals that it

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[76] The 2011 Spring Fiscal Policy Bill, p. 32.
[77] Ibid.
[78] Finansdepartementet (2011c).
[79] The 2011 Spring Fiscal Policy Bill, p. 61.

intends to present first in the 2012 Budget Bill. The detailed description of planned reforms has the character of commitments that in practice are likely to oblige the Government to implement them. This limits the possibilities of taking new information into consideration and making fresh judgements while the budget work is under way. It is difficult to see the merit in this.

The more positive estimate of the scope for reform in the 2011 Spring Fiscal Policy Bill than in the 2011 Budget Bill is largely due to a more optimistic view of how the Government's labour market reforms affect the labour market. Our conclusion in Section 7.1 is that this estimate is not unreasonable. But there is also considerable uncertainty. The risk is probably greater that the estimates are too optimistic rather than too pessimistic. For example, NIER estimates that equilibrium unemployment in the next few years will be about 6 per cent, i.e. one percentage point higher than the Ministry of Finance estimate.[80] Even if the Government's estimate of the long-term effects of the labour market reforms is correct, there is considerable uncertainty about the pace at which these will be realised. All in all, there are strong arguments for making a cautious assessment of the future scope for reform. The scope estimated should not be fully used before there are clear indications that the labour market is actually functioning better. Model calculations alone are not enough.

In the strong economic upturn now under way, the Government sees no reason for taking further measures to stimulate demand.[81] We share this opinion. We even see a risk that the reforms of the size envisioned by the Government in the Spring Fiscal Policy Bill might contribute to too rapid an economic upturn and thus make excessive demands on monetary policy. To avoid an overheating, it may prove desirable, with the Government's current measure of structural net lending, to let it increase to substantially more than two per cent of GDP until 2014. It may be a difficult challenge for the political system in an economic upturn to refrain from costly reforms of a size that that might overheat the economy.

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[80] Konjunkturinstitutet (2011b).
[81] The 2011 Spring Fiscal Policy Bill, p. 32.

General government net financial position

In the public debate, the question is often asked why the Government should use surpluses to continue to reduce its debt when it has now come down to a low level.[82] This objection is often based on a misunderstanding.

At the end of 2010, the public sector had a *net financial worth* of 21.6 per cent of GDP (Table 2.4).[83] If general government net lending is positive, net financial worth in kronor will gradually increase. But this is not true of net worth as a percentage of GDP. If GDP in current prices increases an average of five per cent a year (two per cent inflation plus three per cent real growth), net financial worth, given average net lending of one per cent of GDP per year, will vary around 20 per cent of GDP in the long run. The surplus of one per cent of GDP is just sufficient to offset the decrease in net worth as a percentage of GDP that would otherwise occur when GDP grows. If GDP grows more slowly, financial worth as a percentage of GDP will converge towards a higher number, but even then, the percentage will not always increase. If, for example, the annual nominal growth rate instead averages four per cent (two per cent inflation and two per cent real growth), general government net financial worth will in the long run vary around 25 per cent of GDP.[84]

Table 2.4 shows that net financial worth is expected to be almost 30 per cent of GDP in 2015. This is because the forecasts in the Spring Fiscal Policy Bill only take policy that has been adopted or announced into account. The forecasts thus make the technical assumption that the scope for reform that emerges in the next few years will not be used. Thus in the coming period, net lending will exceed one per cent of GDP according to the Government's forecasts.

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[82] See, for example, Pålsson (2011).

[83] Box 1.1 summarises various net worth and debt concepts.

[84] Finanspolitiska rådet (2008), Section 2.2.2 and Appendix 1 explain the connection between the change in net financial worth, government net lending and nominal GDP growth.

Table 2.4 General government financial position, per cent of GDP

	2010	2011	2012	2013	2014	2015
Consolidated gross debt	39.8	36.8	33.4	28.8	23.7	19.0
Net financial worth	21.6	21.3	22.1	23.7	26.3	29.6

Note: See Text box 1.1 for a definition of consolidated gross debt and net financial worth.
Source: The 2011 Spring Fiscal Policy Bill.

Consolidated general government gross debt came to 39.8 per cent of GDP at the end of 2010. According to the Government's forecast in the 2011 Spring Fiscal Policy Bill, it will fall to 19 per cent of GDP by 2015. About three percentage points of the forecast decline of over 20 percentage points between 2010 and 2015 can be explained by an assumption about sales of state holdings of shares totalling SEK 100 billion, which will be used for repayment of the government debt. But the Riksdag has revoked the authorisation that it gave in spring 2007 for the Government to sell state shares in Nordea, SBAB, Posten and Telia Sonera. Because of this limitation, the sales may be less than SEK 100 billion.

The Government has justified the planned sales of shares on the grounds that a lower public debt reduces the vulnerability of public finances during crises.[85] This argument is difficult to understand. A reduction in the gross debt matched by an equally large reduction in financial assets does not change the real financial position. There is also reason to believe that the return to state shareholdings is higher than the interest costs the state would avoid if the revenue from privatisations was used to pay down the government debt.[86] This conclusion could possibly be questioned if one believes that the state is much less effective as an owner than the private sector. But the argument is less relevant if the state is only a minority shareholder.

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[85] After the Riksdag's decision to limit the Government's ability to sell state-owned companies, Peter Norman, Minister for Financial Markets, commented that "the revenue from privatisations would have been used to pay down the government debt and thus reduce our exposure in the event of future crises" (Dagens Nyheter 2011b).

[86] Research has indicated that there is an *equity premium*, whereby the return to shares in the long run exceeds the 'risk free' interest on government bonds. This 'excess return' could be viewed as compensation for the risk inherent in shareholding (see, for example, Mehra and Prescott 1985, 2003 and Dimson et al. 2003).

2.2 The expenditure ceiling

The expenditure ceiling is set in nominal terms (i.e. in kronor) and refers to all central government expenditures, including pensions, except interest payments. Under the amendment to the Budget Act passed in 2010, it is now mandatory for the Government to propose an expenditure ceiling. It is to be set for at least the next three years. The expenditure ceiling has sometimes been seen as the most important budgetary constraint and thus even more important than the surplus target. This is because the expenditure ceiling is more binding than the surplus target in the sense that the Government is obliged to propose measures should there be a threat that the ceiling will be exceeded. (But there are no *formal* barriers to prevent the Riksdag from deciding a change in a previously approved expenditure ceiling).

Experience in Sweden and other countries suggests that deficit problems tend to occur mainly as a result of growing public expenditure. Likewise, budget consolidations that primarily focus on cutting public expenditure appear to be the most successful.[87] Research on fiscal rules has found that rules that limit public expenditure seem to be particularly effective in achieving sound public finances, particularly when combined with targets for net lending.[88]

The expenditure ceiling is designed with a safety margin, *a budget margin*, for expenditures already adopted and announced. The budget margin is intended to provide space for both discretionary decisions ('reforms') leading to increased expenditures and unexpected expenditure increases that result from a weaker-than-expected economic cycle and other negative 'surprises'.

2.2.1 The expenditure ceiling during the crisis

During the crisis there appeared to be a conflict between the *stabilisation policy* target to counteract the economic downturn and the *budgetary* target to respect the expenditure ceiling. In both the 2009 Spring Fiscal Policy Bill and the 2010 Budget Bill, the Government estimated the remaining budget margin for 2010 at SEK 17 billion.

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[87] Fiscal Policy Council (2010), Section 2.3. See also Hauptmeier et al. (2010).
[88] See, for example, the European Commission (2006), Broesens and Wierts (2009) and IMF (2009).

In order not to risk (formally) exceeding the 2010 expenditure ceiling, the Government therefore opted to pay the extra local government grants of SEK 13 billion for 2010, which had already been approved for cyclical reasons, in December 2009. Thus these grants were booked as expenditures for 2009 when there was such a large budget margin that there could not be any conflict with the expenditure ceiling.

In retrospect, this was unnecessary as the business cycle had already turned upwards in the third quarter of 2009 and government spending then began to increase much more slowly than expected. The outcome of the budget margin subsequently reported for 2010 was SEK 35 billion. But the incident raises important questions of principle. The Government's actions were justified by the view that that it was important for credibility to *formally* respect the expenditure ceiling even though it had to be done using an accounting technicality.

We have previously maintained that this action was unfortunate since it showed that the Government was prepared, if deemed necessary, to use creative accounting to comply with the expenditure ceiling even though it was contrary to the intentions previously expressed.[89] The problem with this way of doing things is that there then is no longer any critical line marking how far one can go. In some situations this would create major credibility problems. But this was not the case this time since the public finances developed far better than expected.[90] There are strong arguments, however, for trying to avoid similar situations in the future.

This incident should be seen as a logical consequence of deficiencies in the rules for the expenditure ceiling. There are in principle three alternatives for avoiding potential conflicts between the expenditure ceiling and stabilisation targets in deep economic downturns: (1) to work with considerably larger budget margins than previously; (2) to introduce a well-defined *escape clause* that allows the expenditure ceiling to be exceeded in crisis situations, and (3) to split the current budget margin into a *reform margin* and a *cyclical margin*.

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[89] The 2008 Spring Fiscal Policy Bill, p. 77. For further details see Fiscal Policy Council (2009a, b) and Calmfors and Flodén (2009).
[90] See Section 1.1.2.

2.2.2 Larger budget margins

Under the Government's guidelines, the budget margin should be at least 1 per cent of the expenditures subject to the ceiling for the current year (year *t)*, at least 1.5 per cent for year *t+1,* at least 2 per cent for year *t+2* and at least 3 per cent for year *t+3*.[91] These benchmarks correspond to 0.3, 0.4, 0.6 and 0.8 per cent of GDP.

The seemingly simplest solution would in general be to work with larger budget margins than before. With a sufficiently large margin, public expenditures can increase sharply in an economic downturn without exceeding the expenditure ceiling. The automatic stabilisers on the expenditure side then have free rein and can be supplemented with discretionary initiatives if they are deemed to be effective. But much larger budget margins go against the intentions behind the expenditure ceiling. According to these, the surplus target is not enough to secure long-term stable public finances and should be supported by the expenditure ceiling.[92] The intent is to prevent temporary increases in tax revenue (or temporary decreases in certain public expenditures) from leading to permanent expenditure increases. Our conclusion is that wide budget margins are an inappropriate method for preventing conflicts between the expenditure ceiling and stabilisation targets. Prudence suggests that the expenditure ceiling should be preserved as a strong constraint on fiscal policy.

2.2.3 An escape clause

But there are good arguments for an *escape clause* in the expenditure ceiling framework. An escape clause would allow the ceiling to be exceeded in *exceptional* circumstances. In that case, such situations would as far as possible be specified in advance. This type of clause would enable strict adherence to the expenditure ceiling in normal circumstances, whereas flexibility would be permitted in extreme circumstances. There is a debate in economic research on the merit of thus combining rules that are normally fixed with the option of deviating from them under specified conditions.[93]

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[91] The 2011 Spring Fiscal Policy Bill, p. 198.
[92] See, for example, Rikrevisionen (2010b, 2011a).
[93] Lohmann (1992), who analyses escape clauses in monetary policy, is a basic reference.

There is a practical example of an escape clause like this in the EU Stability Pact. It allows budget deficits over three per cent of GDP when output falls or when very large negative output gaps have accumulated.[94] The Stability Pact's fiscal rules have generally functioned poorly, but this particular escape clause has not been abused. A similar escape clause could be designed for the expenditure ceiling in Sweden.

A common objection to an exception clause is that it is better in an acute situation to act as the circumstances require should a conflict of objectives arise. This is, for example, the implication of the Government's argument in the 2009 bill on a mandatory expenditure ceiling.[95] It is always possible for the Riksdag to decide on a higher expenditure ceiling if the cyclical situation is thought to justify it. But the risk that such an ad hoc decision will be interpreted as a permanent deviation from the budget rules is considerably higher than with a well-defined escape clause which specifies in advance clear principles on when the expenditure ceiling can temporarily be exceeded.

We argued in the 2009 report for a Riksdag decision on an escape clause. The OECD makes a similar recommendation in its latest Sweden Report.[96] The Report appears to imply that the Fiscal Policy Council could be given a role in deciding whether an escape clause should be triggered. In our opinion, this would be inappropriate as it would lead to a policy-making role for the Council that might conflict with its evaluation role. But it would of course be reasonable for the Council to review the Government's opinion of whether a possible escape clause should be triggered.

2.2.4 Separate cyclical and reform margins

A third possibility is to decompose the current budget margin into a *reform margin* and a *cyclical margin*. The reform margin would be used for decisions on permanent expenditure increases ('reforms') and would allow for unforeseen expenditure increases not related to the cyclical situation. The cyclical margin would only be applied in economic downturns. It would primarily be used to permit cyclically

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[94] See, for example, Calmfors (2005, 2011).
[95] Government Bill 2009/10:5, p. 19.
[96] OECD (2011), p. 30.

dependent expenditures to vary with the business cycle. But the cyclical margin could also be set so that there is scope for discretionary decisions on *temporary* expenditure increases in deep economic downturns.

The STEMU Committee (the Committee for Stabilisation Policy in the Event of Participation in the Monetary Union) in 2002 proposed a split into two margins.[97] We made a similar recommendation in our 2008 report.[98] The main argument for a split is that the margin that can be used for active decisions on permanent expenditure increases can then be set relatively narrowly. Thus it avoids the risk that otherwise exists that a large total budget margin for cyclical reasons will be used for permanent expenditure increases. This was a recurring problem in the early 2000s.[99]

The Government has denounced the proposal to have double budget margins, arguing that "it might lead to classification problems since it is not at all obvious that an expenditure arises for one reason or another".[100] The reason why such a classification problem may arise is that the use of a cyclical margin presupposes an assessment of the cyclical situation that is always associated with uncertainty (see Chapter 3). Classification problems with double margins must, however, be weighed against the risk that having only one large budget margin will result in too much of it being tied up in permanent expenditure decisions. One way of trying to prevent a cyclical margin from being misspent on permanent reforms would be to establish a procedure for when it should be used that includes an external verification of the Government's cyclical assessment. The Government could, for example, need a special decision by the Riksdag on whether the cyclical margin may be used and if so, how much of it. The Fiscal Policy Council could be given the task of reviewing proposals of this kind from the Government.

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[97] SOU 2002:16.
[98] Finanspolitiska rådet (2008), Section 2.5.5.
[99] See, for example, Per Molander and Gert Paulsson's background paper for the Council in 2008 (Molander and Paulsson 2008).
[100] Government Bill 2009/10:5, p. 19.

2.2.5 The expenditure ceiling rules should be changed now

Possible conflicts between the requirement to respect the expenditure ceiling and the objective of stabilising the economy arise in economic downturns. Our discussion may therefore be seen as less relevant in the current situation. But it would be a mistake to conclude this. Changes in the fiscal framework aimed at greater flexibility in an economic downturn may be difficult to implement when actually in a downturn because it may then jeopardise credibility in long-term budget measures.[101] Changes like this should instead be made in a more normal situation. The current conditions are favourable since Swedish fiscal policy enjoys a high level of credibility.

We recommend either splitting the budget margin into a reform margin and a cyclical margin or introducing an escape clause. Both solutions would enable the expenditure ceiling to be made more binding vis-à-vis expenditure growth in upturns, which is the main objective of the ceiling. An explicit prohibition of booking expenditures in a year other than the year to which they refer should be inserted in the Budget Act.

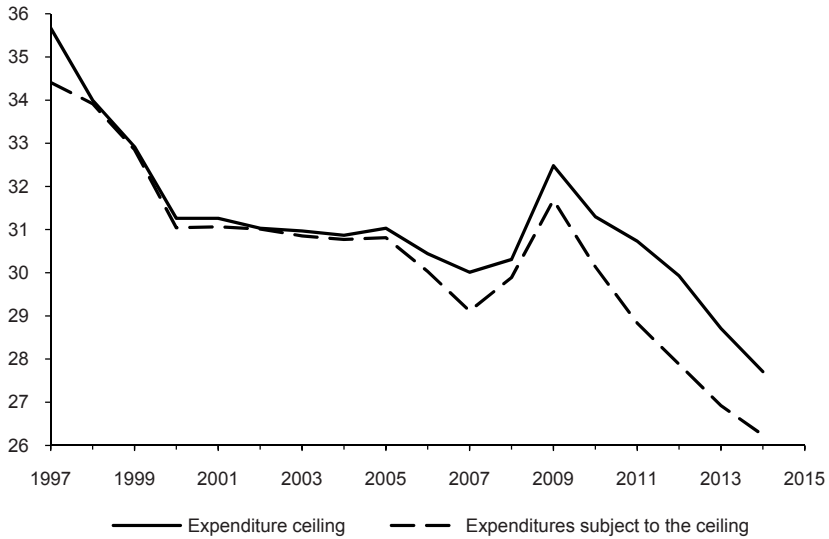## 2.2.6 Expenditure ceilings and budget margins, 2011-2015

Figure 2.1 shows that both the public expenditures subject to the ceiling and the expenditure ceiling relative to GDP have gradually declined since the late 1990s. They increased only in the recession year of 2009 but have since resumed a downward trend.

Table 2.5 shows the expenditure ceiling and budget margins for 2010-2015. The expenditure ceiling has been approved through 2014. Although the Budget Act only provides for expenditure ceilings for three years ahead, the Government in the 2011 Budget Bill chose also to propose a ceiling for the fourth year, 2014, "to clarify how a return to a surplus in the public finances is to be accomplished".[102] For 2015, there is still only the Government's estimate in the 2011 Spring Fiscal Policy Bill of the expenditure ceiling that may be proposed in the autumn Budget Bill.

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[101] See, for example, Hansson (2009).
[102] The 2011 Budget Bill, p. 95.

Figure 2.1 Expenditure ceiling and expenditures subject to the ceiling, per cent of GDP

Source: The 2011.Spring Fiscal Policy Bill.

The budget margins for 2011-2012 are considerably larger than the Government's own guidelines provide for: in 2012 the margin is as large as 7.4 per cent of the expenditures subject to the ceiling and then gradually declines to 5.3 per cent, compared with 1.5-3 per cent under the guidelines.[103] These budget margins are also considerably larger than previous margins.

The Government uses the uncertainty in the expenditure forecasts to justify the large margins. It points out that, in addition to the difficulties in analysing macroeconomic developments, uncertainty is particularly high because of "the sharp drop in the volumes in the transfer systems that the expenditure forecast is based on" and that there is a risk that the reduction in ill-health may slow down more rapidly than expected.[104]

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[103] See Section 2.2.2.
[104] The 2011 Spring Fiscal Policy Bill, p. 211.

Table 2.5 Central government expenditure ceiling

	2011	2012	2013	2014	2015
Expenditure ceiling	1 063	1 083	1 093	1 103	1 123
Expenditures subject to the ceiling	997	1 009	1 025	1 045	1 066
Budget margin	65.8	74.3	67.9	58.3	57
per cent of expenditures subject to the ceiling	*6.6*	*7.4*	*6.6*	*5.6*	*5.3*
per cent of GDP	*1.9*	*2.1*	*1.8*	*1.5*	*1.4*
General government expenditure, per cent of GDP	49.8	48.5	47.4	46.6	45.9

Source: 2011 Spring Fiscal Policy Bill.

Because of the large budget margins, in the coming period, the expenditure ceiling will be less binding on fiscal policy than before. This has been pointed out by the Swedish National Audit Office (SNAO) which recommends lowering the expenditure ceiling so that the budget margins will be smaller.[105] As shown in Table 2.5, this is actually being done but at a very slow pace. The high margins under the current expenditure ceiling forecast imply that the surplus target will be the most binding fiscal constraint. This also seems to be the Government's argument. The 2011 Spring Fiscal Policy Bill states that "the scope for reform is determined by the Government's assessment of the scope for reform in relation to the surplus target and the trade-off between revenue and expenditure reforms, given the limitation on the expenditure side".[106]

That the Government no longer thinks it needs to rely to the same extent as before on the expenditure ceiling to maintain budget discipline may be due to the surplus target's strengthened position. Formally, this has come about because under the Budget Act, it is now mandatory to establish a surplus target. The small budget deficits in Sweden during the economic crisis were, however, probably of much greater importance. This has strengthened the credibility of the surplus target. In Section 2.1.1 we also drew attention to the importance of the process itself in identifying the scope for reform.

But it should be noted that the conditions that made budget discipline possible in the past may not necessarily exist in the future. It is questionable whether the sickness insurance reforms implemented are politically sustainable: in the Spring Budget Bill, the

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[105] Riksrevisionen (2010b, 2011a).
[106] The 2011 Spring Fiscal Policy Bill, p. 207. See also the 2011 Budget Bill, pp. 97-98.

Government announced changes to these reforms and further such changes may come later. The ceiling and the basic benefit in unemployment insurance are likely to be adjusted eventually, thus also affecting the level of activity support in the labour market programmes. More resources may be put into such areas as education, research, health care and elderly care as well as infrastructure investments. One interpretation of the large budget margins may be that the Government wants to hold open the possibility of significant increases in public expenditure.

In the Spring Budget Bill, the Government estimates that until 2014 there will be scope for reform that (by how much is unclear) will exceed SEK 48 billion. Since the budget margin will come to SEK 58 billion in 2014 (SEK 57 billion in 2015 according to the Government's estimate), making use of the entire margin would probably not be compatible with the surplus target even if no tax cuts were implemented.

Nonetheless the Government plans substantial tax cuts. As pointed out in Section 1.2.3, the special tax memorandum published by the Government in connection with the Spring Budget Bill discusses net tax cuts in 2012 of about SEK 16 billion.[107] In addition there may be a reduction in the value-added tax on restaurant and catering services from 25 to 12 per cent, which in the Alliance's election manifesto, was estimated to cost about SEK 6 billion. There has also been talk of a sixth earned income tax credit as well as other tax cuts. It therefore seems realistic to expect total tax cuts during the Government's term of office of up to SEK 30-40 billion. *If* such large tax cuts were implemented, and *if* the entire budget margin was used, there would be a budget weakening of SEK 85-100 billion. That compares with the Government's estimate in the Spring Budget Bill of a slightly larger scope for reform up to 2014 than the scope of SEK 48 billion estimated in the Budget Bill.

The above calculation is a worst-case scenario. But it points to the risk of a conflict arising between the Government's ambitions to reduce taxes and the wish for expenditure increases. It is well known from research that such conflicts are particularly difficult for coalition and minority governments to deal with.[108] Fiscal constraints are particularly important for such governments. The less binding effect

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[107] Finansdepartementet (2011c).
[108] See, for example, Roubini and Sachs (1989).

of the expenditure ceiling due to the large budget margins may make it more difficult to meet the surplus target in the future if the Government simultaneously implements the tax cuts it has in view.

The tension between tax cuts and expenditure increases can be seen in the forecasts of public finances in the medium term (to 2020) made by NIER (Konjunkturinstitutet 2011b). The Government's forward projections of net lending for the next few years are based only on changes already adopted or announced. As discussed in detail in Section 2.1, it is thus assumed that, in the absence of active decisions, a number of public expenditures decrease in proportion to GDP. NIER's medium-term forecast instead assumes that the replacement rate in various transfer systems remains constant (and does not decline over time) and that public consumption and investment develop in line with demographics and GDP. According to NIER, public expenditure will increase until 2015 by SEK 35-45 billion more with these assumptions than with unchanged rules. There may very well be a strong political realism in these assumptions.

The view of the expenditure ceiling expressed by the Government in the 2011 Spring Fiscal Policy Bill, as in the Budget Bill that preceded it, implies a radical change from the previous view that the expenditure ceiling should be a support for the surplus target. [109] The Government's new approach seems instead to be that it is the surplus target that should support the expenditure ceiling. In our opinion this change is risky. We see a risk that a situation might arise where *both* expenditure increases *and* tax reductions were implemented and the surplus target had to cede way. If there are substantial tax cuts, it is our opinion that expenditure ceilings already approved should also be adjusted downwards.

Our conclusion does not lead to any recommendation for a lower expenditure ceiling. The issue of how the scope for reform that emerges should be divided between tax reductions and expenditure increases is a political matter that we do not take a position on. We wish only to point out that the expenditure ceiling now in effect until 2014 (and announced for 2015) allows spending increases that are

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[109] In the Committee on Finance's open hearing on the Fiscal Policy Council's report in 2009, Finance Minister Anders Borg said, "Before I became Minister of Finance it was my understanding that the surplus target in some way must be the core because it is what determines what we have in the way of long-term debt development.... As Finance Minister, it is my firm belief that just the ceiling and how it is designed in Sweden... is what will be binding" (Finansutskottet 2009, p. 229).

not compatible with large tax cuts. It is of course entirely possible, if preferred, to implement substantial expenditure increases, but if so, the tax cuts need to be smaller than we calculated above. We would like to caution that the combination of large tax cuts and large budget margins under the expenditure ceiling may lead to increased tensions that could threaten budget discipline.

2.3 Public Investment

Public investment is another issue. The surplus target is a target for government *net lending*. But public sector *real* savings in the form of net investment in real capital are not included.

There is a long-standing discussion in economic research about whether targets and rules for net lending cause investment to be crowded out.[110] The theoretical argument is that current generations have less incentive to make public investments that will also benefit future generations if the investments have to be financed by taxes rather than by borrowing. Tax financing means that current generations have to bear the full cost of the investments, while they only receive some of the return. (But the empirical research confirming such displacement effects is not extensive).[111] The disadvantage of a target for public sector *total* net lending (also including net investment) instead of a target only for net lending, a *golden rule*, is that it presents opportunities to circumvent the rules by classifying expenditures for public consumption as public investments.

In our 2008 report, we proposed that a Government commission should look into the question of whether a golden rule should be formulated for the surplus target.[112] The Government has rejected this proposal. In last year's report, it was our opinion that there was then no reason to raise the matter.[113] The crises in public finances in many countries have put the focus on the general government *financial* position. In this situation, earlier golden-rule formulations for fiscal policy have been abandoned in both Britain and Germany. In our view, how budgetary targets should best be formulated in the

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[110] See Fiscal Policy Council (2009a), Sections 1.2.3 and 2.3.3.
[111] See, for example, Turrini (2004).
[112] Finanspolitiska rådet (2008), Section 2.3.
[113] Fiscal Policy Council (2010), Section 4.1.3.

long run remains an open question, but from a short-term perspective, a focus on government net lending may be preferable.

But there is cause for concern that the focus on net lending will lead to serious neglect of public investment. Thus, for example, the major problems with railway traffic in Sweden in recent years have revealed neglect of investments. In earlier reports, we have pointed out the Budget Bills' inadequate reporting of both public investment and the public sector real capital stock.[114] For example, in the 2011 Spring Fiscal Policy Bill, there is no analysis at all of public investment developments. Reporting is limited to one row in three tables in the Bill's tables appendix showing investment for 2006-2015 in SEK billions for the entire public sector, the central government and local governments.[115] The growth in the public sector real capital stock is shown in one table and one figure in the text,[116] for which there are two sentences of comments. The reporting is equally rhapsodic in the 2011 Budget Bill.

In the 2010 Spring Fiscal Policy Bill, the Government announced that it would develop public sector reporting of its real assets and investments, and that the intention was to report on this work in the 2011 Spring Fiscal Policy Bill.[117] But this bill does not contain any information on this matter. We are very critical of this. It appears to reflect a continued low priority in the Government Offices for developing adequate analytical materials on public sector investment and real capital stock. This is difficult to understand in light of the significant improvements that should be possible with little analytical effort.

Better reporting of public sector investment and real capital stock should include a breakdown into various types of investment to make it possible to follow developments in different areas. This reporting should be accompanied by a thorough analysis that includes the valuation of real capital stock and the assumptions used in calculating the depreciation taken in different areas. Such improvements require a better statistical basis, which Statistics

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[114] Finanspolitiska rådet (2008), Section 2.2 and Fiscal Policy Council (2009a), Chapter 4 respectively.
[115] Appendix 2, Table 20 (p. 14) presents total public investment, Table 21 (p. 15) the central government's total investment and Table 23 (p. 16) local government total investment.
[116] Table 9.13 (p. 186) and Figure 9.4 (p. 186).
[117] The 2010 Spring Fiscal Policy Bill, p. 92.

Sweden should develop.[118] Estimates should also be made of how different investments may affect future public sector revenue and expenditure.

To ensure that the development of public sector investment and real capital stock gets sufficient attention, it may be useful to present an annual special report to the Riksdag. At the very least, there should be a special chapter devoted to public investment in either the Spring Fiscal Policy Bill or the Budget Bill (or in both). Explicit commitments of this kind are probably necessary if any reporting in this area is going to happen.

2.4 Conclusions

It is of great value that the fiscal policy debate be based on an estimate of the *scope for reform*. It is, however, a shortcoming that the budget bills do not provide a clear explanation of why there normally is scope for reform. This is because tax revenue automatically grows at approximately the same pace as GDP. But without active decisions, public expenditure grows more slowly than GDP. This is because only some expenditures are tied to wages (which in the long run grow with GDP). Other expenditures are only partly indexed to wages or are indexed to prices. Some expenditures are not indexed at all, so they decline in real terms when prices rise.

The Government should clearly report how the scope for reform comes about. It should be broken down into contributions from reductions in the real value of public expenditures that are not indexed to the price level, from other expenditures that do not follow GDP, from demographic changes, from changes in the number of benefit recipients in different social insurance systems as a result of various changes in the rules and from deviations from the surplus target that may be desirable in different cyclical situations. Such reporting would enable the voters to weigh the tax cuts and expenditure increases that the scope for reform is used for against the financing created by the emergence of the scope for reform.

The decision-making system based on estimates of the scope for reform is well suited to gradually reduce taxes and public

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[118] A first attempt at a more advanced analysis of public investment was made in our 2009 report (Fiscal Policy Council 2009a, Chapter 4). The Ministry of Finance should have been able to build on this analysis.

expenditures as a percentage of GDP. But a policy like this can in the long run lead to a build-up of tensions that jeopardise budget discipline. A gradual dilution of different transfer payments in relation to the wage and price levels may prove to be politically unsustainable. There may be political pressure in the future to restore the replacement rate in various transfer systems to earlier levels. This pressure may be difficult to resist, even if some of the previously estimated scope for reform has been used for tax cuts.

In the 2011 Budget Bill, the Government made a preliminary estimate of the scope for reform for 2012-2014. It was estimated at SEK 48 billion. For 2012, the preliminary scope for reform given was SEK 15 billion. In the 2011 Spring Fiscal Policy Bill, no new number was specified, but the scope for reform is now expected to be "somewhat greater" than that specified in the 2011 Budget Bill.

In connection with the Spring Fiscal Policy Bill, the Government presented concrete plans for tax cuts in 2012 amounting to at least SEK 16 billion net. It is unclear why the Government already in the 2011 Spring Fiscal Policy Bill so explicitly specifies proposals that it intends first to present in the 2012 Budget Bill.

The more positive estimate of the scope for reform in the 2011 Spring Fiscal Policy Bill than in the 2011 Budget Bill is largely due to a more optimistic estimate of the effects of the Government's labour market reforms. The Government's view is not unreasonable. But there is also considerable uncertainty. There are therefore strong arguments for not using all of the estimated fiscal space before there are clear indications that the labour market has actually improved in line with the Government's expectations.

We share the Government's view that there is currently no reason for using fiscal policy to stimulate demand. On the contrary, there is a risk that reforms on the scale envisaged by the Government in the Spring Fiscal Policy Bill may contribute to too rapid an economic upturn. It may be a difficult challenge for the political system to refrain from excessively large and costly reforms in an economic upturn.

The high budget margins under the expenditure ceiling will make this ceiling less binding on fiscal policy than before. This implies a change in the Government's earlier view of the expenditure ceiling as a support for the surplus target. The Government's new approach

seems instead to be that the surplus target is to be a support for the expenditure ceiling. This is a risky change.

The Government currently enjoys very high credibility for fiscal discipline. But it should not be assumed that the situation that made this possible will necessarily continue.

If the entire budget margin were to be used, and the Government also implemented major tax reductions, the budget weakening would exceed the estimated scope for reform by a large margin. This points to a potential conflict between the Government's ambitions to reduce taxes and possible expenditure increases. If the Government implements major tax cuts, the expenditure ceiling should be adjusted downwards. If the Government wants to retain the current budget margins, major tax cuts should not be implemented.

A frequent objection to the surplus target is that the Government should not continue to reduce its debt when it has now come down to a low level. This objection is often based on a misunderstanding. At the end of 2010, the public sector had a *net financial worth* of more than 20 per cent of GDP. With surpluses in net lending, net financial worth in kronor will keep on increasing. But this does not apply to net worth in relation to GDP. Net lending of one per cent of GDP will stabilise net financial worth as a percentage of GDP at about the current level.

We have previously pointed to the risk that inadequate reporting of public sector investment and real capital stock in the Budget Bills does not provide the Riksdag with a sufficient basis for decision-making. We are very critical of the absence of any improvement in this reporting. One way of ensuring that the development of public sector capital stock gets sufficient attention would be via an annual special report to the Riksdag. At the very least, there should be a special chapter devoted to public investment in either the Spring Fiscal Policy Bill or the Budget Bill.

3 Dating business cycles

This chapter makes an attempt to date business cycles in Sweden. We calculate when there have been upturns or downturns and attempt to determine turning points in the business cycle.[119] There are a number of reasons why business cycle dating is important. First, such dating is useful in the general economic policy debate. Second, an assessment of the cyclical situation is important in the Riksbank's effort to meet the inflation target. Third, identification of business cycles is necessary to determine whether fiscal policy is well balanced. Fourth, business cycle dating can be used to show how well the surplus target for the public finances has been met. Different indicators (structural net lending and averages over different periods) described in Section 2.1.2 are used to evaluate whether the target has been met. Business cycle dating can be used to examine how well these indicators reflect the key target for net lending which applies over an entire *business cycle*.

The international literature on business cycle dating is extensive.[120] The best-known dating of the turning points is the dating of the U.S. business cycle conducted on an ongoing basis by the National Bureau of Economic Research (NBER) since 1978.[121] This dating attracts considerable interest and is reported extensively in the media. It is used as a yardstick by which all other methods are compared. A method that cannot identify the same turning points in the business cycle as the NBER is usually met with scepticism. The Centre for Economic Policy Research (CEPR) dates business cycles in the euro area.[122] Against this background, it is surprising that there is no established dating of Swedish business cycles.[123]

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[119] The chapter is based on Michael Bergman's background report to the Council (Bergman 2011). The background report also discusses how business cycle dating can be used to estimate when the cycle will turn in the future.

[120] See, for example, Harding and Pagan (2003), Artis et al. (2004), Chauvet and Piger (2008) and Stock and Watson (2010). Massmann et al. (2003) gives an overview of the most important empirical methods used to date the business cycle.

[121] The NBER is a non-profit research organisation with the remit to conduct economic research focusing on the U.S. economy.

[122] CEPR is a network of researchers in economics who are mainly active at European universities.

[123] There are only a few attempts to date business cycles in Sweden: Christoffersen (2000), Edvinsson (2005) and Holm (2007). However, there is an extensive literature on the Swedish business cycle and its foreign dependence: see Bergman et al. (1992, 1998), Englund et al. (1992) and Bergman and Jonung (1993, 1994).

What principles should serve as a guide for dating the business cycle? Above all, the method used should be transparent and easy to replicate. This means that it should as much as possible be based on an objective methodology. Subjective assessments should therefore be avoided. The methodology should also not be sensitive to the number of observations used so that the dating is not changed when new data are added. In addition, there should not be a significant lag, so that a turning point can only be identified long after it has occurred.[124]

3.1 What is a business cycle?

The most widely used definition of a business cycle is as follows:

> Business cycles are a type of fluctuation found in the aggregate economic activity of nations that organize their work mainly in business enterprises: a cycle consists of expansions occurring at about the same time in many economic activities, followed by similarly general recessions, contractions and revivals which merge into the expansion phase of the next cycle; this sequence of changes is recurrent but not periodic; in duration business cycles vary from more than one year to ten or twelve years; they are not divisible into shorter cycles of similar character with amplitudes approximating their own. (Burns and Mitchell 1946, p. 3)

Fundamental to Burns and Mitchell's definition is that a business cycle can be divided into different phases: an upturn when economic activity increases and a downturn when it decreases. The business cycle represents short-term ups and downs in economic activity, for example, GDP. Good times are succeeded by bad times. At the same time, it should also be stressed that these phases can be observed in several sectors and that there is a correlation between them. This means that a turning point in the business cycle occurs when a large number of sectors simultaneously go from an upturn to a downturn or vice versa. The definition also provides guidance on the periodicity in cyclical swings. Empirical studies often find that the average length of a business cycle is about five years.

Burns and Mitchell's definition states what a business cycle is but does not provide any method for identifying the turning point. There are two different approaches. The first approach (the classical

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[124] These conditions coincide with the requirements the literature usually specifies for estimating the GDP gap: see Hjelm and Jönsson (2010) for a discussion.

business cycle) defines the cyclical phases as *absolute decreases or increases in the level* of GDP or other macroeconomic variables. The second approach (growth cycles) defines cyclical swings as *deviations in economic activity from a long-term trend.*

There are two ways of measuring the length of a business cycle: either from peak to peak or from trough to trough. The estimated duration will not necessarily be the same for these two different methods of calculation. The reason is that all business cycles are not alike. It is well known that downturns are usually shorter in duration than upturns. All in all, the duration of the business cycle thus varies not only over time but also depending on whether we measure it from peak to peak or from trough to trough.

3.1.1 The classical business cycle

To illustrate how the turning points in a classical business cycle are identified, Figure 3.1 shows a principled outline of GDP. Under the classical business cycle definition, turning points are identified as that point in time when the absolute declines or increases in the GDP level begin. These turning points are called cyclical peaks and cyclical troughs. Cyclical peaks mark the beginning of a downward phase, which is stopped when the cyclical trough is reached. The period which is required for the economy to move from one peak to the next peak (or from one trough to the next trough) represents the length of the business cycle.

The classical approach is used by the NBER and CEPR, when they date the business cycle in the United States and the euro area respectively. The NBER uses the following definition of the turning points in the business cycle:

> A recession is a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real GDP, real income, employment, industrial production, and wholesale-retail sales. A recession begins just after the economy reaches a peak of activity and ends as the economy reaches its trough. Between trough and peak, the economy is in an expansion. Expansion is the normal state of the economy; most recessions are brief and they have been rare in recent decades.[125]

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[125] Please note that the NBER uses the term 'recession' to designate the downturn. In the following text, we will use the term downturn instead of recession.

Figure 3.1 A principled outline of a classical business cycle
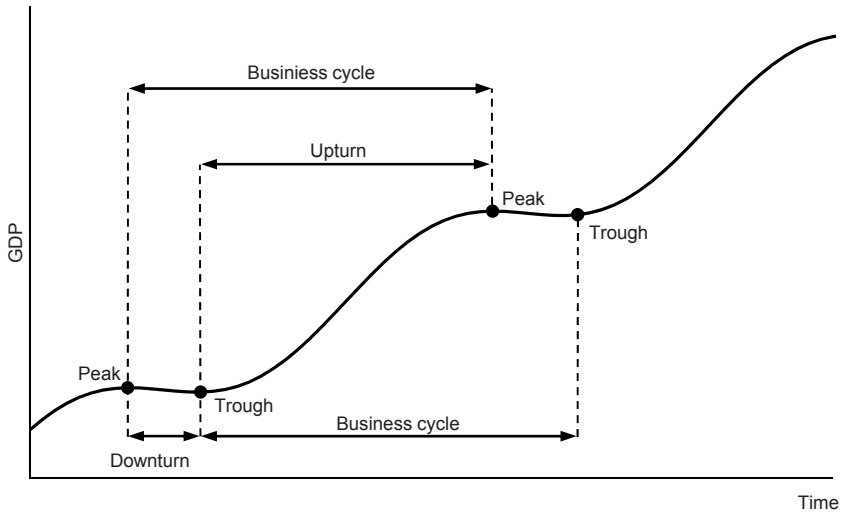
CEPR defines the turning points in the following way:

> A recession is a significant decline in the level of economic activity, spread across the economy of the euro area, usually visible in two or more consecutive quarters of negative growth in GDP, employment and other measures of aggregate economic activity for the euro area as a whole; and reflecting similar developments in most countries.

The difference between both these definitions is that the NBER is somewhat more specific as to the choice of indicators and identifies the exact month when the turning point occurs, while CEPR identifies the quarter when a turning point occurs. There is little difference in practice.

The NBER's Business Cycle Dating Committee consists of eight university economists. Once the committee has decided on a turning point, the classification does not change if and when the data series used in the decision are revised. The time lag may be significant: for example, the economic troughs dated to March 1991 and November 2001 were identified with a two-year lag although the dating is intended to be done in real time. A lag like this limits the method's value as a basis for economic policy. Similar criticism can also be directed at CEPR dating of the European economy. The CEPR classification committee consists of nine academic economists. At its meeting on 31 March 2009, it decided that economic activity had

peaked in January 2008, which was thus identified as a turning point. With classical business cycles, as noted in the NBER definition, an economic upturn is the norm for the economy. Economic downturns occur less frequently and only for shorter periods.

Statistical methods for dating a classical business cycle

A number of statistical methods can replicate the more informal approach used by the NBER and CEPR. One approach is the Bry-Boschan-method (1971) (the BB method) which identifies the turning points in GDP.[126] Another statistical method is the Markov models (MS models).[127] Hamilton (1989) analysed GDP in the United States and found that this model could identify turning points which mostly coincided with the NBER classification.

The advantage of the MS model is that it can be used at each point in time (in real time) to calculate the probability of a cyclical turning point. As new data become available, the estimates of this probability are updated. Thus, it is possible to determine more exactly where in the business cycle the economy is. The method is also objective in the sense that it is based on the statistical estimate of a model instead of the assessments made by a committee. The method can also be reproduced. But the approach is difficult to explain. It may also imply an asymmetry with the result that the economy on average is either in an economic downturn or upturn.

3.1.2 The growth cycle

A growth cycle is defined by the deviation in GDP from its trend. Figure 3.2 is a principled outline of a growth cycle. Peaks and troughs occur when cyclical deviations from the trend are the greatest. The period from peak to trough represents a downturn and the period from trough to peak an upturn.

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[126] One alternative is to use the BB method for several different macroeconomic variables where the different turning points in each macroeconomic variable are weighed together (see Harding and Pagan 2006).

[127] This method is used in Michael Bergman's background report to the 2010 Fiscal Policy Council report empirically to estimate the duration of Swedish unemployment (Bergman 2010).

Figure 3.2 A principled outline of a growth cycle
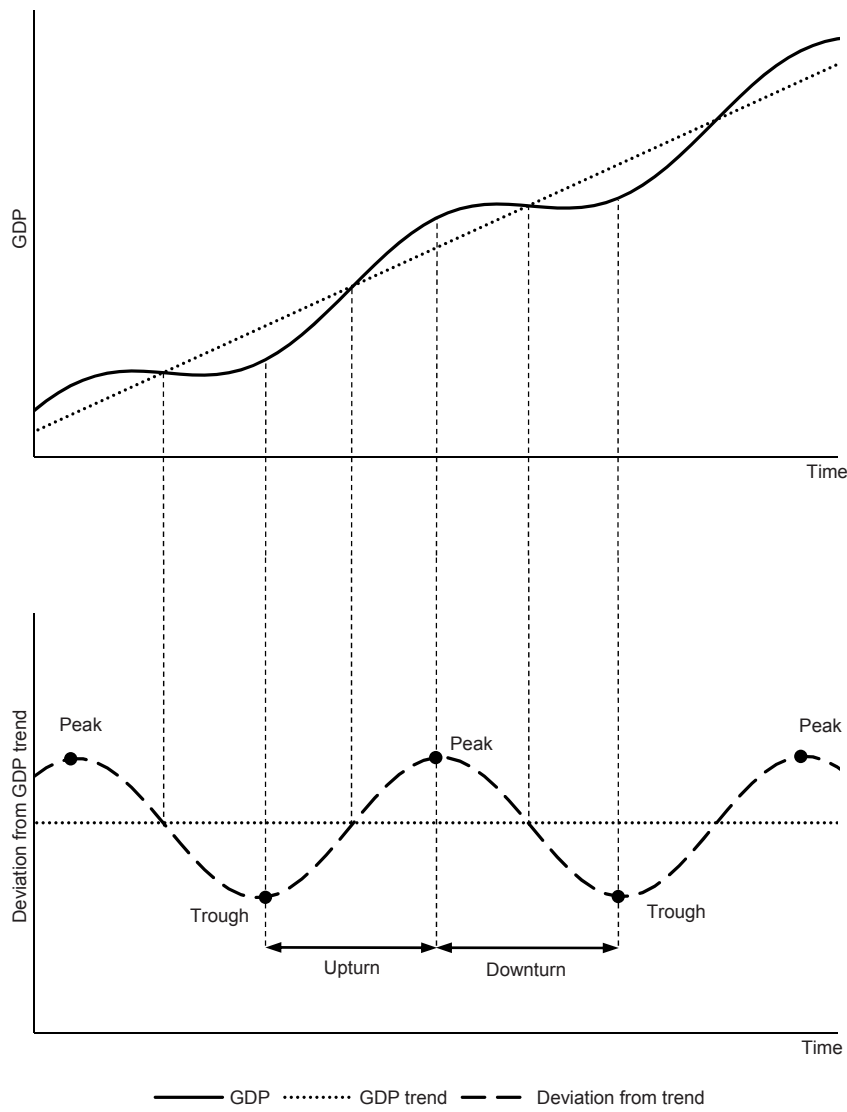
Classical cycles and growth cycles measure two completely different types of business cycles. They therefore generally identify different turning points. This is because the first method measures the fluctuations in the GDP level, while the second measures swings relative to the long-term GDP trend. The differences between the two approaches are discussed further in Box 3.1.

Statistical methods for estimating a growth cycle

The most common method of estimating a growth cycle is the HP filter (Hodrick and Prescott 1997), according to which GDP is divided into a slowly changing trend and a cyclical component. These two components cannot be observed; they have to be calculated. A *precise* definition of what constitutes a business cycle is required for these calculations, i.e. how variable the cycle is in relation to changes in the trend.

Box 3.1 Classical business cycles and growth cycles

This box illustrates why the two definitions of the business cycle, the classical business cycle and the growth cycle, generally give different turning points. GDP for year t (y_t) can be divided into two components: a trend component (τ_t) and a cyclical component (c_t),

$$y_t = \tau_t + c_t.$$

A turning point in a classical business cycle is reached when the change in GDP is equal to zero, i.e. when $y_t - y_{t-1} = \Delta y_t = \Delta \tau_t + \Delta c_t = 0$. The turning point thus occurs when the change in the trend compensates for the change in the cyclical component. But the turning point in a growth cycle is defined as when the change in the cyclical component is equal to zero, i.e. when $\Delta c_t = 0$. The trend plays no role here in dating the turning points. This difference in how a turning point is defined affects the dating. It is only when there is no trend in GDP that the two approaches lead to exactly the same turning points and thus to the same business cycles.

Other filtering methods assume that the average duration of the business cycle is calculated first so that the filter both excludes seasonal variations and excludes the trend in GDP. The Baxter-King (BK) filter (Baxter and King 1999) and the Christiano-Fitzgerald (CF) filter (Christiano and Fitzgerald 2003) are examples of such methods. There is obviously a built-in arbitrariness as to which fluctuations in GDP should be attributed to the business cycle and which should be attributed to changes in the trend. A standard in the research has grown up according to which the estimated business cycle has an average length of 1-10 years, which coincides with Burns and Mitchell's definition of a business cycle.

The methods described are relatively easy to understand. The cyclical component shows at each point in time what phase the business cycle is in: an upturn or a downturn. This leads to a dating of cyclical turning points. The methods are designed so that the average deviation from the trend is zero. In some cases, this is an advantage, for example, when evaluating the surplus target.[128] These advantages must be weighed against the disadvantages. The main disadvantage is that the dating is strongly influenced by the latest observations.[129] The turning points identified towards the end of the sample are therefore uncertain. Furthermore, the computed business cycle, including its turning points, will change each time GDP is revised. If the business cycle is asymmetric, i.e. if the deviations from the trend are negative on average, this is not captured by the filters described.

It is possible to offset these disadvantages to some extent by either basing the classification on the first published measurements of GDP, or extending the sample by appending observations on the ends of the series using 'projections' of GDP before (because the data are then unavailable) and after the last observation in the sample . Thus the first and the last observations will not have as strong an influence on the estimated trend. This approach is used below when the Swedish business cycle is dated.

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[128] See Section 1.2 for a detailed discussion.
[129] An appendix in Bergman (2011) describes in more detail what the HP filter entails and how the cyclical component is calculated. In addition, the problems with the filter's start and end points are illustrated, which give the first and the last observations a disproportionate influence over the estimated business cycle. The HP filter is particularly sensitive to these problems but the other two filters, the BK filter and the CF filter, are likewise affected.

3.2 Dating Swedish business cycles

This section identifies business cycles in Sweden employing the methods described above. The dating is based on quarterly data for Swedish real GDP since 1970.[130] First, three filters are used to calculate the cyclical component of GDP: the HP, BK and CF filters. For the latter two, all the fluctuations in GDP between one and a half and eight years are extracted.[131] These three filters measure the deviation of GDP from its trend, i.e. the growth cycles of the kind discussed in the previous section. By comparison, the BB method, previously shown to replicate the informal method used by the NBER and CEPR, as well as a variant of Hamilton's Markov model (MS model) is used.[132] These two methods measure the classical business cycle.

Table 3.1 shows the periods when the Swedish economy was in an economic downturn. The business cycles estimated using the three filter methods correspond well with each other in most cases. But the CF filter identifies an economic downturn in the mid-1980s (from the third quarter of 1984 to the second quarter of 1988) that none of the other filter methods find. The two methods that identify turning points in classical business cycles both give approximately the same results before 1990, but completely different timing after 1993. There are more similarities between the three filter methods than between the two methods classifying classical business cycles. Since 1993 the BB method has identified only one turning point, while the MS model detects a number of changes from one cyclical phase to the other. In this regard, results from the MS estimate coincide more with those obtained using the filter methods.

The starting point for the recent recession also differs somewhat between the methods. According to the filter methods, the economic downturn began either in the last quarter of 2007 or the first quarter of 2008. The BB method indicates a turning point in the last quarter of 2007 and the MS model in the second quarter of 2007.

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[130] Data are from the OECD and include the national accounts published by Statistics Sweden on 1 March 2011. The sample stretches from the first quarter of 1970 through the last quarter of 2010.

[131] See Section 3.1.2 above. For the HP filter, the parameter λ is set to 1600, which is the default value for quarterly data. As the field of observation is shortened both at the beginning and at the end when we use the BK and CF filters, we increase the number of observations using the 'projections' of GDP before 1970 (since there are no data before this year) and projections after 2010 so that the business cycle and the dating obtained cover the entire field of observation (see Bergman 2011).

[132] More details about this model and how it is calculated can be found in Bergman (2011).

Table 3.1 Swedish economic downturns identified

Growth cycle			Classical cycle	
HP filter	BK filter	CF filter	BB method	MS method
1970 Q3-1972 Q1	1970 Q3-1972 Q1	1970 Q3-1972 Q1	1970 Q4-1971 Q2	1971 Q2-1971 Q3
1976 Q1-1977 Q4	1976 Q1-1977 Q4	1975 Q4-1977 Q4	1976 Q2-1977 Q3	1975 Q4-1977 Q3
1980 Q1-1983 Q2	1980 Q1-1983 Q2	1980 Q1-1983 Q2	1980 Q3-1981 Q2	1979 Q4-1981 Q3
		1984 Q3-1988 Q2		1984 Q4-1985 Q3
1990 Q1-1993 Q2	1990 Q2-1993 Q2	1990 Q2-1993 Q2	1990 Q2-1993Q1	1990 Q1-1993Q4
1995 Q4-1997Q1	1995 Q3-1997 Q1	1995 Q3-1997 Q1		1995 Q3-1997 Q1
2000 Q2-2003 Q2	2000 Q2-2003 Q2	2000 Q3-2003 Q3		2000 Q3-2003 Q4
2007 Q4-2009 Q1	2008 Q1-2009 Q3	2008 Q1-2009 Q2	2007 Q4-2009 Q1	2007 Q2-2009 Q3

| Christoffersen (2000)	Edvinsson (2005)	Holm (2007)	
1971 m1-1972 m1		1971 Q1-1971 Q2	
1974 m6-1978 m7	1976-1978	1976 Q4-1977 Q4	1976 Q2-1977 Q2
1979 m12-1982 m11	1979-1981	1979 Q4-1982 Q2	
1985 m8-1986 m5			
1989 m1-1993 m1	1990-1993	1991 Q2-1993 Q2	1990 Q2-1992 Q3
	2000-2001		

Note: Christoffersen's (2000) dating is based on monthly data for manufacturing output for the period 1960-1998, while Edvinsson (2005) uses GDP on an annual basis for the period 1800-2001. Holm (2007) reports two different datings: the upper left column is based on four macroeconomic time series, while dating in the right column is based solely on GDP. She uses quarterly data for the period 1969-2006. Economic upturns are not reported in the table.
Sources: Own calculations and Christoffersen (2000), Edvinsson (2005) and Holm (2007).

All the methods show that the cyclical trough occurred in 2009 even though they disagree among themselves about the exact time. According to the BK filter and the MS model, the turning point occurred in the third quarter, while the BB method and the HP filter identify the first quarter of 2009 as the turning point. Dating the economic downturns that occurred in connection with the crisis in the 1990s shows that the downturn began in one of the first two quarters of 1990. The various methods differ as to the turning point. The MS model shows the turning point in the fourth quarter of 1993, while the BB method shows the first quarter of that year.

Table 3.1 shows the economic downturns identified in earlier studies. While Christoffersen (2000) uses the BB method, both Edvinsson (2005) and Holm (2007) follow completely different methods than those we have used and also other macroeconomic indicators to a large extent. Despite this, our dating and theirs largely agree.

Figure 3.3 GDP's cyclical component according to the filter methods and downturns according to the BB method and the MS model
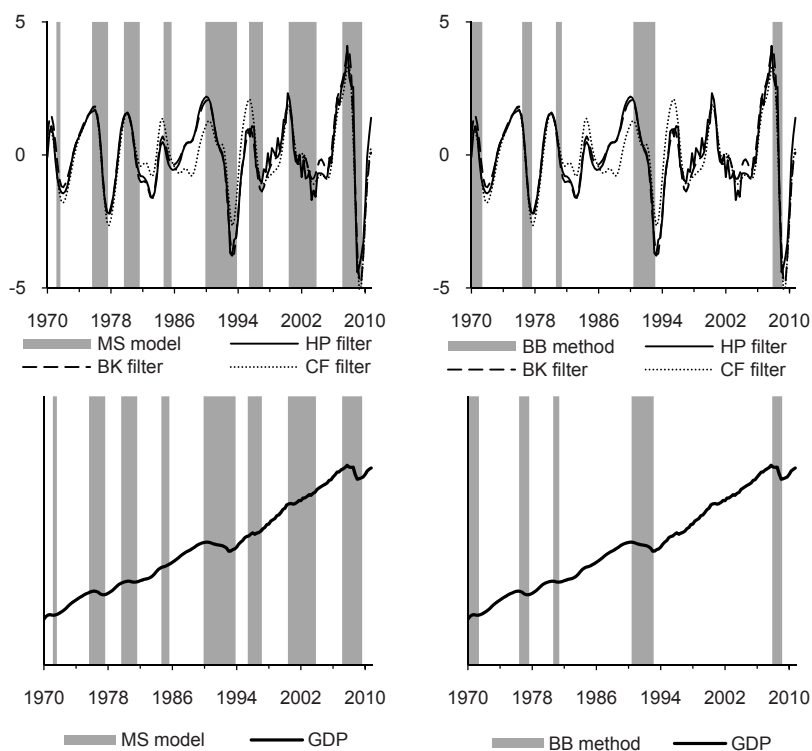
Sources: OECD and own calculations.

Figure 3.3 shows the cyclical components according to the filter methods and the downturns identified using the BB method and the MS model. The diagram also illustrates the differences between the downturns identified using the BB method and those identified using the MS model. The MS model identifies considerably more downturns than the BB method which only identifies five such phases during the period.

Table 3.2 Average length of a business cycle in quarters for Swedish GDP

	Growth cycle			
	Upturn		Downturn	
HP filter	16		9	
BK filter	16		9	
CF Filter	11		10	
	Classical cycle			
MS model	11		9	
	P-P	T-P	T-T	P-T
BB method	37	32	38	5

Note: P-P stands for cyclical peak to cyclical peak, T-P for trough to peak, etc.
Source: Own calculations.

Table 3.2 shows the average length of upturns and downturns. It is clear that upturns last much longer than downturns. Only the CF filter deviates from this pattern. The cyclical component in GDP is symmetrical when this filter is used. For the other two filter methods and for the MS model, an economic upturn lasts longer than a downturn. For the BB method, we find even greater differences when we measure the time from trough to peak (32 quarters) and from peak to trough (five quarters).

3.3 The business cycle and the surplus target

Chapter 2 discusses how well the surplus target has been met. The Government's follow-up is based on a number of indicators: structural net lending and various averages for longer periods. These indicators are used because of the difficulties identifying the business cycle. It may be of interest to see how well the surplus target is met over the business cycles that we have identified in this chapter. This should not be construed as meaning that we recommend evaluating the surplus target in this way; on the contrary, in Section 2.1.2 we have argued for an evaluation using a simple average of net lending over a number of years. But to judge the value of the indicators used by the Ministry of Finance, it is worthwhile to examine the level of net lending over the business cycle, measured in different ways.

Since the surplus target was adopted back in 1996, the period studied is 1996-2010, even though the target was not fully implemented before 2000. Thus we have a maximum of two business cycles in the period (see Table 3.1). Table 3.3 shows average general

government net lending as a percentage of GDP over the span of each business cycle since 1996. The length of a cycle is measured either from one peak to the next or from one trough to the next. As the business cycle turning points in principle are common to the three different filtering methods we use, these are reported together.[133]

Table 3.3 Average government net lending over a business cycle, per cent of GDP

	Classical cycle		Growth cycle	
	Business cycle	Average government net lending	Business cycle	Average government net lending
Peak to peak	2000-2007	1.3	2000-2008	1.4
Trough to trough	1997-2003	0.4	1997-2003	0.4
	2003-2009	1.2	2003-2009	1.2

Note: The growth cycle is the dating of the business cycle given by the three filtering methods while the classical business cycle is the dating obtained using the MS method; see Table 3.1. The figures reported in the table are averages over a business cycle and as a per cent of GDP.
Source: Own calculations.

According to the table, the surplus target was exceeded in the last business cycle. Using the filter methods, the surplus averaged 1.4 per cent of GDP if measured from peak to peak (2000-2008) and 1.2 per cent of GDP if measured from trough to trough (2003-2009). If we instead use the MS method, the surplus is 1.3 per cent from peak to peak (2000-2007) and 1.2 per cent from trough to trough (2003-2009). These results can be compared with the backward-looking average indicator which was discussed in Section 2.1.2 and which showed an average surplus of 0.8 per cent of GDP for the latest ten-year period. The surplus is thus greater for the last business cycle – no matter how we measure it – than for the latest ten-year period.

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[133] Under the BB method, there is only one full business cycle in the period if we measure from peak to peak. But this cycle had already started in 1990. When we measure the length of the business cycle from trough to trough, we do not find any full cycle. Therefore no results are shown for this dating method.

4 Fiscal sustainability

The demographic trend towards an ageing population represents a challenge for public finances in the future. The question of fiscal sustainability is closely related to questions about intergenerational distribution, which is the argument used to justify the surplus target for the public finances. Fiscal sustainability is currently estimated on a regular basis in many countries and is an important basis for fiscal policy decision-making.

This chapter discusses various aspects of fiscal sustainability. Section 4.1 describes the concept of fiscal sustainability and discusses intergenerational distribution. Section 4.2 provides an overview of methods for analysing these issues, while Section 4.3 considers the calculations made by the Ministry of Finance. The most recent estimate of fiscal sustainability from the 2011 Spring Fiscal Policy Bill is discussed in Section 4.4. Section 4.5 analyses the role of the pension system in sustainable public finances.

4.1 Intergenerational distribution

The Government in a communication on the fiscal framework recently presented to the Riksdag states that "Long-term sustainable public finances are a prerequisite in order to achieve the overall objectives of fiscal policy".[134] This is considered a basic requirement for consistency over time between the trajectories for the revenue and expenditure generated by the rules for taxes and transfers and the provision of public services.

The fiscal sustainability requirement is also closely related to the intergenerational distribution of resources.[135] In its communication, the Government states that one

> motive for the surplus target ... [is] an equitable distribution of resources between generations[136]

and that

> the Government's presumption is that fiscal policy is sustainable in the long run if it is designed in such a way that the intertemporal budget constraint is

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[134] Finansdepartementet (2011a), p. 4.
[135] Finanspolitiska rådet (2008) discusses the basis for the various parts of the fiscal framework and how the emphasis on different aspects has changed over time.
[136] Finansdepartementet (2011a), p. 19.

> met without leading to inequity between generations, the need for future tax increases, higher inflation or higher risk premiums.[137]

In addition to emphasising fiscal sustainability as an overall objective, this communication specifies further constraints, particularly avoiding future tax increases.

Although there are numerous references to equal distribution and intergenerational equality, these concepts are not defined in the Government's communication. Among other things, it asserts that, "for example, the constraint is met if current generations incur large debts on condition that future generations finance them. But such financing would result in intergenerational inequality".[138]

This assertion is by no means self-evident. Since productivity (and hence revenue) rise over time, there is an argument for smoothing consumption between different generations. The argument is that consumption is usually assumed to have diminishing marginal utility. If so, the social utility (the sum of utility over generations) is maximised if each generation has the same consumption level.[139] It can therefore be argued that future 'rich' generations should contribute to better consumption possibilities for current – poorer – generations. This can be achieved with current budget deficits, which result in borrowing, that have to be funded by future generations.

The Government in its communication argues that such a path is risky and can result in excessive exposure to the financial markets. This view is highly relevant, but it and the question of intergenerational distribution are two separate issues. The 2010 Spring Fiscal Policy Bill has quite a detailed discussion of how life expectancy, and thus the increased demand for public services, should be handled. It argues that this development is a benefit for future generations and hence the financing should be passed on to them.[140] But these arguments need not be inconsistent with the conclusion that growing productivity provides an argument for a front-loaded consumption path and thus for current budget deficits.[141]

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[137] Ibid, p. 13.

[138] Ibid, p. 12. This argument is repeated on p. 44.

[139] This argument assumes a utility function that includes all future generations. It also assumes that the market interest rate and subjective discount rate coincide.

[140] See previous discussions of these issues in the Fiscal Policy Council (2009a, 2010).

[141] See, for example, Andersen and Gestsson (2010).

It is not at all obvious what is meant by intergenerational equality. It is a serious deficiency in the fiscal framework that the generational argument plays a dominant role without any clarification of what is meant by intergenerational equality. The Government seems to assume that intergenerational equality is guaranteed if government debt does not build up but this is too simple an argument for several reasons.[142]

Intergenerational equality cannot be decided only by what net contributions different generations make to the public sector. The welfare of various generations depends on many more factors. The intergenerational distribution of income is obviously of great importance, but other aspects such as the environment (natural resources, pollution), availability of services from the public sector real capital stock etc. must be taken into consideration in order for us to be able to compare living standards between generations.

Even a comparison of income between generations is problematic. Productivity increases give future generations a choice between higher consumption and more leisure time. If they choose more leisure time, they receive a lower income. A simple comparison of income between generations will therefore not capture differences in the generations' opportunity set.

A related question is whether the incomes of different generations should be compared in absolute or relative terms. If absolute terms apply, then an argument can be made for the consumption smoothing discussed above. But this view is questionable if it is the relative incomes, that is the consumption possibilities compared with other countries that are important.

Attempts to smooth absolute income levels between different generations may have the result that future generations' consumption possibilities will be lower than in other countries. Such an income development can thus be questioned both from a fairness and a feasibility perspective.[143] Income is therefore often adjusted for productivity growth in analyses that compare the consumption

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[142] The 2011 Spring Fiscal Policy Bill (p. 237) argues that: "A basic principle is thus that each generation should pay its own way and be treated neutrally by the public sector", but it later also states that it may be appropriate to deal with the consequences of demographic change via the public budget.

[143] If future generations are expected to repay a large debt, then some may choose to abandon the implicit contract by emigrating. The greater the differences in consumption possibilities (living standards) are, the stronger the incentives will be to do so.

possibilities between different generations.[144] Such issues need to be clarified in order to be able to make balanced choices about the intergenerational distribution. It is not clear what the Government's view is.

The discussion on intergenerational distribution is often limited in practice to how net lending develops over time. But the consequences for different generations may be difficult to identify. Changes that do not affect net lending may also have a major impact on the distribution. One example is a reduction in the real estate tax financed by higher taxes on labour.[145] Under the reasonable assumption that the real estate tax is capitalised in house prices, a 'budget neutral' policy like this will favour older people due to higher house prices and be unfair to young people who have to pay a higher tax on earned income.

In the Government's communication to the Riksdag on the 2011 fiscal framework, it provides the following policy statement:

> In order to maintain fairness between different generations, the Government also regularly supplements its sustainability calculations with intergenerational analyses. These indicate whether there is a systematic intergenerational redistribution via the public sector. In cases where reforms can be expected to have major consequences for intergenerational income distribution, the intergenerational analyses should be done as part of the preparation of the proposal.[146]

As stated in our previous reports, there is a need for a clearer analysis of intergenerational issues. Only one such analysis has been made by the Ministry of Finance and it had a backward-looking perspective (see below).[147] One single publication is not an analysis performed on a regular basis. Nor have we been able to identify a single reform proposal where the consequences of intergenerational distribution have been explicitly analysed.

4.2 Analysing fiscal sustainability

An analysis of fiscal sustainability is essentially a projection of public revenue and expenditure trends. One important reason for making

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[144] See, for example, Cardarelli et al. (2000) and Økonomisk Råd (2004).

[145] The example is equivalent to using the scope for tax cuts to reduce the real estate tax instead of the tax on earned income.

[146] Finansdepartementet (2011a), pp. 44-45.

[147] Petterson et al. (2006).

projections of this kind is to evaluate whether future policy is sustainable in light of the coming demographic changes. The starting point in this evaluation is an interpretation of current policy, which, together with population projections, is used to project trends in public finances. Identifying possible sustainability problems is an important part of the political debate. But the calculations can also be used to illustrate the consequences of increased demand for public services (health care) or leisure (a downward trend in hours worked). Analyses of this kind are being done with increasing frequency and help make it possible to set political priorities. The medium-term budgetary targets (the surplus target and the expenditure ceiling) should be set so that they conform to a path for public finances consistent with long-term sustainability.

4.2.1 Methods

The standard approach to fiscal sustainability calculations is to extrapolate public revenue and expenditure (the *extrapolation method*). The calculations are based on a breakdown of expenditure and revenue according to the demographic composition of the population in a given base year which is then combined with a population forecast.[148] The approach is based on the basic assumption that the relevant socio-economic conditions remain unchanged; for example, that the proportion of a given demographic group using a particular public service remains the same. This is interpreted as an unchanged policy and unchanged behaviour. In addition, assumptions are made about wage and productivity developments. How detailed the analysis is depends on the extent to which expenditure and revenue can be broken down by demographic characteristics such as age, gender, country of birth and so forth. The final calculations show public expenditure and revenue trends and thus also the trend for net lending.

    Generational accounts are a variant of sustainability calculations.[149] These accounts can also be used to evaluate intergenerational

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[148] Not all expenditure and revenue items can be broken down in this way, defence spending being one example. An expenditure like this is usually assumed to remain unchanged as a proportion of GDP.

[149] Lundvik et al. (1999) is an early analysis of the situation in Sweden. Petterson et al. (2006) analyses the intergenerational distribution in Sweden. While generational accounts look ahead, their focus is more backward-looking. But the two methods are closely related and the data underlying them are of the same type.

distribution.[150] By comparing accounts for current and future newborns, a measure of intergenerational distribution is obtained (see Box 4.1).

If the *net* lifetime tax payments are higher for future generations than for current newborns, this indicates that different generations will be treated differently. The current policy is then not fiscally sustainable as net taxes will have to be raised. Since questions about intergenerational distribution are important in the economic debate, and often given as reasons for a particular policy or strategy, it is important that these intergenerational analyses be done.


Box 4.1 Generational accounts

Generational accounts estimate each generation's revenue, tax payments and benefits from transfer payments and services over the entire life cycle. Generational accounts are usually a forward-looking calculation with a focus on net payments to the public sector. The first generational accounts were developed in the early 1990s.[151] One insight from these analyses is that a given debt and deficit trend may over time reflect very different developments for different generations.

The basic idea behind generational accounting is explained in Figure 4.1, which shows a simplified structure with overlapping generations. The average person is a net beneficiary from the public sector when young and old and a net taxpayer during his or her working life. A breakdown of expenditures and contributions based on age and other socio-economic background variables makes it possible to calculate the net contribution to the public sector at a given age and time. The total balance for a given generation can be calculated as the present value of its net payments to the public sector. The typical generation calculation at time T as shown in Figure 4.1 is forward looking. The balance of all living generations (generation A and B in Figure 4.1) can be calculated for the remainder of their lifetimes. It is also possible to calculate the net contribution for those just born (generation C) and later generations (D) under assumptions about future economic policy. The standard assumption is that the policy is unchanged.

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[150] See Cardarelli et al. (2000) and Deeg et al. (2009).
[151] Auerbach et al. (1991).

Figure 4.1 Overlapping generations and generational accounts

T-4   T-3   T-2   T-1   T   T+1   T+2
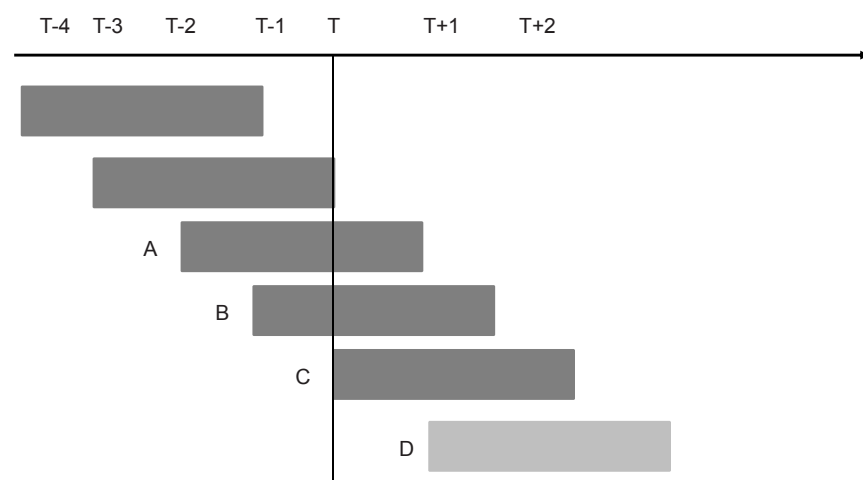
Two approaches can be chosen for assessing whether current policies are sustainable. The first is to calculate the present value of net contributions from current and future generations and add this to existing net worth. If this sum is negative, there is a *fiscal gap* in the public sector. This debt level thus reflects the effects of the current policy, assuming that it continues in the future. An implicit debt, which must be dealt with at some future date, constitutes a sustainability problem for fiscal policy.[152]

One alternative is to calculate the present value of the net tax payments as well as the initial wealth for all generations currently alive (A and B) and for the generation about to be born (C). The net tax payment required from all future generations (D) to ensure that the intertemporal budget constraint holds (i.e. that the public sector manages either to pay the interest on its debts or repay them) is then estimated. The assumption is thus that the entire burden of adjustment falls on generations not yet born. By comparing the net tax payments of newborns with those of future generations, an indicator of the intergenerational distribution is obtained. The newborns' net payments reflect current policy, whereas the net payments of future generations reflect the changes that have to be implemented to maintain fiscal sustainability. If net lifetime tax

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[152] See Fiscal Policy Council (2009a), Section 3.2.3.

payments are higher for future generations than for current newborns, this indicates that different generations will not be treated equally.

The aim of forward-looking generational accounts is to identify fiscal sustainability problems and shed some light on the intergenerational distribution. But analyses like this do not provide a complete picture of the distribution, since in that case, incoming and outgoing payments would have to be compared over the entire lifetime of different generations, i.e. be both backward-and forward-looking.[153]

Intertemporal general-equilibrium models have recently begun to be used to evaluate fiscal sustainability. They take into account how different changes affect individual behaviour. These models are essentially large-scale quantitative models with overlapping generations.[154]

The advantage of extrapolation methods is that they are relatively easy to apply. But one serious problem is that the projected path might not be consistent with reasonable assumptions about behaviour (see Section 4.3 below). This can distort the fiscal sustainability estimates in an unknown direction.

The main advantage of a general-equilibrium approach is that it explicitly takes into consideration that developments can precipitate different adjustments in behaviour. A general equilibrium model presupposes the development of a detailed model and therefore requires large resources. These models are also based on a number of questionable assumptions, but the extrapolation methods' assumptions are often implicit. General-equilibrium models make assumptions explicit and are therefore easier to evaluate. Moreover there are more possibilities of studying alternative scenarios. For these reasons, we recommend that the Ministry of Finance develop more explicit intertemporal general-equilibrium models. The two different methods do not need to yield very different results with respect to fundamental public finance developments. But a general-equilibrium model is much more useful than the extrapolation

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[153] Økonomisk Råd (2004) is one example of this kind of analysis.
[154] See, for example, the DREAM model for Denmark (DREAM 2010a,b) and the GAMMA model for the Netherlands (Draper and Armstrong 2007).

method in analysing how fiscal sustainability is affected by various economic policy changes.

4.2.2 Indicators

It is difficult accurately to report a fiscal sustainability analysis. One way to summarise the calculations is to calculate the *implicit debt* (initial government debt plus the difference between the present value of future government expenditure and revenue as a percentage of GDP).[155] Another measure is the permanent change in net lending as a percentage of GDP that is necessary to comply with the intertemporal budget constraint (the *S2 indicator*). The two indicators give essentially the same information: the S2 indicator is the annuity with the same present value as the implicit debt.

The calculations are based on an assumption of an *infinite* time horizon, which may be perceived as less relevant for economic policy. The alternative is to assume a *finite* horizon. But this is problematic. The choice of an endpoint is arbitrary, and it can have a major impact on the results. A frequently used criterion is that general government debt as a percentage of GDP at some future date should be the same as it is today.[156] A criterion like this might seem to indicate that future generations at the endpoint will be in the same position as current generations are at the starting point. But this is a highly arbitrary basis for forming an opinion. Since most countries with unchanged policies face a trend deterioration in public finances, it follows that the shorter the time horizon of the analysis, the fewer sustainability problems there appear to be. Having the same debt ratio as today does not leave future generations in the same position as current generations if a trend showing a deterioration in public finances can be expected.

Furthermore, the results can be highly sensitive to the choice of endpoint. This is well illustrated in the 2011 Spring Fiscal Policy Bill (Figure 12.18) where the fiscal sustainability indicator is highly dependent on the choice of end-year in the calculations. Figure 4.2 reproduces the figure in the Spring Fiscal Policy Bill. Also, the

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[155] Sometimes the term intertemporal net financial worth is also used (see Fiscal Policy Council 2009a, Section 3.2.3 and Appendix 1).
[156] The European Commission computes an *S1 indicator*, which is defined as the permanent budget change as a percentage of GDP needed to provide a debt to GDP ratio of 60 per cent in 2060.

endpoint has to be changed over time. This can lead to sudden changes in the assessment of fiscal sustainability. Because of these problems, sustainability calculations with an infinite time horizon are the most common. This is usually expressed with the help of the S2 indicator described above.

**Figure 4.2 S1 and S2 indicators for various end point years**
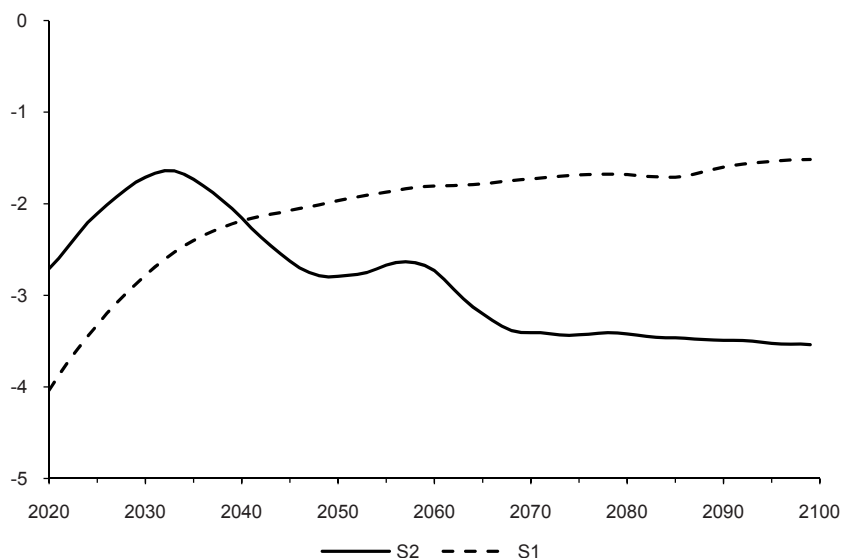
But working with models with infinite time horizons is also not without problems. First, a pragmatic approach has to be followed since it does not make sense to work with a model which is *literally* formulated in infinite time. Therefore it is usually assumed that the economy reaches a stationary state at some point in the future.[157] But sustainability calculations may be highly dependent on the properties that this stationary state is assumed to have. This is particularly the case with a low discount rate because the future then will weigh heavily in all calculations.

There are more problems with the S2 indicator. It can compress too much information into a single figure. In addition, a positive value for this indicator, which shows the annual permanent budget improvement that would be needed for the intertemporal budget

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[157] A stationary state is an equilibrium that repeats itself from period to period.

constraint to be met, is easily interpreted to mean that the best way of solving sustainability problems is through an immediate and permanent change in the policy. Whether this is the most appropriate policy is questionable for a number of reasons.[158]

Figure 4.3 Different trends in government net lending may give the same S2 indicator
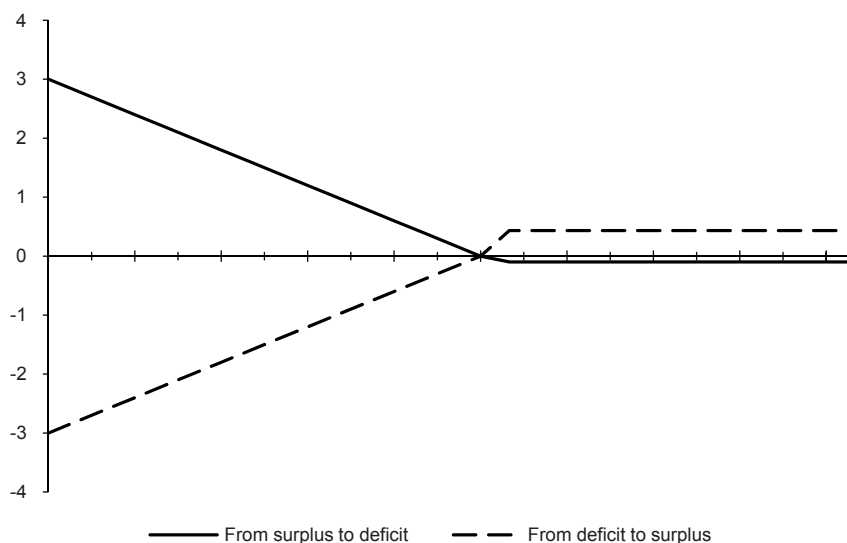
Note: The two curves each show a hypothetical course of government net lending that gives the same value for the S2 indicator for a growth-adjusted interest rate of one per cent. The horizontal axis shows the time period.
Source: Own calculations.

The same value for the S2 indicator may reflect completely different paths for general government net lending. Figure 4.3 shows two completely different paths for net lending, both of which give a value close to 0 for the S2 indicator.[159] This is not only a theoretical curiosity. Estimates for Sweden and Denmark have given S2 values which are relatively similar. Despite this, trends in their public finances differ substantially, since in these calculations Sweden has a trend from surpluses to deficits in the future, while the Danish trend is the opposite, i.e. improvements from the current deficit position to surpluses in the future.[160]

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[158] See Section 2.4.1 in Fiscal Policy Council (2010).
[159] With a growth-adjusted interest rate of one per cent, the S2 indicator becomes 0.14 in this example.
[160] This applies to the sustainability calculations in the 2010 convergence reports for Sweden and Denmark. See Andersen (2010a).

The discussion emphasises that the S2 indicator cannot be interpreted in isolation from the underlying budget path. One key question is what influence budget outcomes extending far into the future should have in the calculations, because these outcomes, for obvious reasons, are associated with a very great uncertainty. They are assigned a large weight if the discount rate (real interest rate adjusted for growth) is low.[161] The time profile of government net lending should be taken into account. Large variations over time - for a given value of the S2 indicator - signify greater risks. If there is a long period of surpluses before deficits occur in the future, it may be politically difficult to avoid large spending increases and tax cuts in the short run. If instead a long period of large deficits precedes a later period with surpluses, the economy will be vulnerable in the event of adverse macroeconomic shocks.

4.3 Ministry of Finance's methods

We can evaluate the Ministry of Finance's sustainability calculations from two different angles. One angle is to assess the analysis based on the resources put into the area. The second is to evaluate the analysis in relation to its significance and to *best practice* internationally. From the first angle, we find that the benefit-cost ratio is rather high. The reporting of the calculations has improved in recent years as has the discussion of the economic policy conclusions. In addition, the calculations include alternative scenarios and sensitivity analysis, which provide a good basis for debate.

From the second angle, we find that surprisingly few resources have been allocated to this work and that the methods have a number of shortcomings compared to what is being done in other countries. The Ministry of Finance puts only limited resources into sustainability analyses. This is surprising in view of their great importance to fiscal policy. There seems to be a growing imbalance between the resources that the Riksbank puts into model development for monetary policy analysis and the resources that the Ministry

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[161] Since the variables are measured relative to GDP, the relevant discount rate is the growth-adjusted one, i.e. the real interest rate minus real GDP growth. With a nominal interest rate of 5 per cent, inflation at 2 per cent and a real GDP growth of 2 per cent, the growth-adjusted interest rate will be 1 per cent. The discount rate used by the Ministry of Finance is somewhat lower, because productivity growth is assumed to be 2.4 per cent for the period 2015 to 2020 and then decline gradually to 2.2 per cent from 2030.

of Finance puts into model development for fiscal policy analysis. There is a great need to invest more in medium- and long-term fiscal analyses.

Below we discuss the approach that the Ministry of Finance uses in its sustainability calculations. The methods have been developed on an ongoing basis. We base our discussion on the analytical framework reported in the 2010 and 2011 Spring Fiscal Policy Bills and in Finansdepartementet (2010c).

The method is recursive and includes various sub-models. A key starting point is Statistic Sweden's demographic forecast. Based on employment rates and the number of hours worked by age, gender and country of birth, a projection is made of the labour supply based on this demographic forecast (sub-model AMOD). The need for labour in the public sector is then calculated. This calculation is based on assumptions about public consumption at the individual level broken down by age and gender in combination with population projections (sub-model CMOD). Private employment is calculated as the difference between the labour supply and the demand for labour in the public sector. Private employment and productivity growth are used in determining total production. This and the following steps are calculated using the sub-model LMOD. Total production is dis-tributed among different components of demand based on an assumption that each component's share of GDP is constant. Since aggregate activity is determined from the supply side, equilibrium in the product market requires that aggregate demand adjusts and that is ensured by assuming exports to be the adjustment variable (residually determined).

Last, public revenue and expenditure growth are estimated, where public consumption follows from step three above, expenditure on pensions is calculated in the sub-model SESIM and transfer pay-ments are estimated by population projections and an assumption that these are wage indexed. Tax revenue is calculated from forecasts of five different tax bases and the assumption that taxes are propor-tional.

In sustainability analyses, it is customary to extrapolate based on assumptions about constant ratios and frequencies (see above). But the extrapolation can be made at different levels of aggregation, and this is crucial for the results. One important question is whether the employment rates for different groups should be held at the last ob-

served level or adjusted in some way to better capture structural changes. The Ministry of Finance has not discussed the latter issue in any detail.

Private consumption is one example of a variable that is determined at a relatively aggregated level in the calculations. It is assumed to be 50 per cent of GDP. This assumption is questionable for several reasons. First, it would be more reasonable to assume that the ratio of private consumption to disposable income is constant. Since private disposable income is likely to be affected by the demographic structure, this may be important. Second, the ratio of private consumption to GDP has varied considerably over time. The fundamental life cycle hypothesis of individual consumption assumes that savings behaviour varies over a lifetime. Therefore demographic changes should be expected to affect the aggregate savings and consumption ratios.[162] Failure to take this effect of the changes in age structure into account may have major consequences for the calculations.

The Ministry of Finance bases its forecasts of general government transfer payments to households on the composition of the population. But tax revenue is not likewise calculated by taking the age structure into account.[163] This may be a potential problem because revenue from consumption taxes is likely to depend heavily on the age structure (cf. the discussion of consumption above). The forecasts of public consumption are based on gender and age-dependent frequencies of the utilisation of individual public consumption (for example, schools and health care). These show, together with the population projections, how volumes may develop. Equally important is how the costs of producing these services change. More discussion on both the volume and price assumptions is needed (see Section 4.4). Sustainability calculations are very sensitive to the assessment of both volume and price trends in public consumption. Changes in public consumption have a direct impact not only on public spending, but also on private sector activities and thus on the tax base.

Higher public consumption leads to a greater need for workers in the public sector. Given the model structure used, this implies a cor-

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[162] Current empirical data for Norway shows that the age composition has a significant effect on private consumption (Erlandsen and Nymoen 2008). This effect is also included in general-equilibrium models (see, for example, Velfærdskommissionen 2006).

[163] It may be misleading for a reader that while the 2011 Spring Fiscal Policy Bill in Figure 12.2 shows an age-related curve for tax payments in 2008, the sustainability analysis is not based on such an analysis.

responding decrease in private employment. This shows that changes in public consumption have a dual effect on general government net lending: a direct effect via public expenditures and an indirect effect via private employment and thus the tax base. The calculations are therefore very sensitive to forecasts of public consumption. Given the importance of these issues it would be useful with a more careful and detailed discussion of how to project public activities, and sensitivity analyses associated with this. Assumptions concerning the developments of costs for public activities is clearly also crucial, and the approach taken here has changed over time; see the discussion in the next section. Labour supply and employment play a key role for fiscal sustainability. If the forecasts of labour market developments do not come true, sustainability calculations may be seriously misleading.

The fact that exports are determined as a residual in the sustainability calculations (so that they are consistent with GDP growth; see above) results in quite a remarkable path for the balance of trade. It is assumed to show permanent surpluses. This implies a sharp build-up of foreign assets. It is not quite clear whether the systematic surplus path can be given a good economic explanation or whether it reflects a problem in determining the various aggregate demand components. Since the errors in the trade balance accumulate in the net worth position vis-à-vis the rest of the world, this may be of great importance. This raises questions about the underlying path for the terms of trade and possible adjustment herein, as well as whether such a path for net-wealth accumulation is consistent with a reasonable modelling of private consumption.

We have above raised a number of questions about the methods used by the Ministry of Finance in its sustainability calculations. It would be desirable if the Budget Bills included a discussion of more of the considerations on which the model is based. The 2011 Spring Fiscal Policy Bill has an appendix supplementing the analysis of fiscal sustainability. Although this is intended to provide a more technical description of the analysis, the appendix is largely a repetition of the main chapter.

4.4 The 2011 Spring Fiscal Policy Bill

The 2011 Spring Fiscal Policy Bill contains a new sustainability assessment. It comprises a base scenario and eleven alternative scenarios. In the base scenario, the S2 indicator is -3.4 and the S1 indicator is -1.7 (see above). The implication is that fiscal policy is sustainable by a wide margin. According to the calculations, general government net lending will be on an upward trend (see Figure 4.4).

Table 4.1 Breakdown of the S2 indicator

	S2	Initial net debt	Primary balance up until 2099	Primary balance after 2099
2010 Spring Fiscal Policy Bill	0	-0.1	-0.3	0.4
2011 Spring Fiscal Policy Bill	-3.4	-0.2	-1.4	-1.8

Note: The S2 indicator is broken down into initial net debt, primary net lending through 2099 and primary net lending after 2099. The starting year is not the same in the two calculations.
Sources: The 2010 and 2011 Spring Fiscal Policy Bills.

According to the calculations, general government net financial worth will rise from 21.6 per cent of GDP in 2010 to 446 per cent of GDP in 2099. This assumes an equilibrium unemployment rate of 5 per cent and an employment rate in the long run of 78 per cent.

This assessment differs radically from that in the 2010 Spring Fiscal Policy Bill where the S2 indicator was 0. This is evident from Table 4.1. The change is mainly due to the revision of the budget profile (government revenues minus expenditures excluding interest).[164] In the 2010 Spring Fiscal Policy Bill, primary net lending was positive through 2090. This gave a contribution of -0.3 percentage points to the S2 indicator. In the 2010 estimate, a deficit emerged in the late 2090s, which gave a contribution of 0.4 percentage points to the S2 indicator. In the 2011 Spring Fiscal Policy Bill, primary net lending is assumed to be positive each year in the future. The contribution to the S2 indicator is 3.2 percentage points (1.4 from 2011 through 2099 and 1.8 after 2099). The contributions from initial net worth differ only by one tenth between the two bills.

The 2011 Spring Fiscal Policy Bill describes how the 3.4 percentage point improvement in the S2 indicator is mainly due to three factors: (i) a change in the population projections which

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[164] The 2011 Spring Fiscal Policy Bill, Table 4.1.

increases net immigration and contributes to a 0.15 percentage point decline in the S2 indicator, (ii) labour market reforms that have resulted in a 1 percentage point decline in equilibrium unemployment, a 2 percentage point increase in the employment rate and a permanent increase of 4 per cent in the total number of hours worked, which improves the S2 indicator by 0.45 percentage points; and (iii) a change in the assumptions about price trends for public consumption that have led to a 3.1 percentage point improvement in the S2 indicator.

Figure 4.4 General government net lending and primary net lending, per cent of GDP
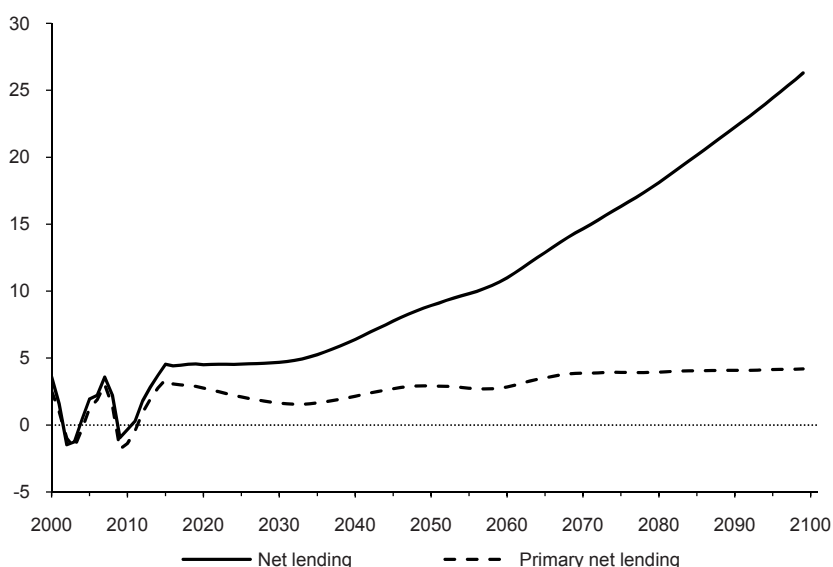
Note: Primary net lending refers to the difference between general government revenue and expenditure excluding interest payments.
Source: The 2011 Spring Fiscal Policy Bill.

The very large change in the estimate of the S2 indicator in the 2011 Spring Fiscal Policy Bill compared to the preceding Spring Fiscal Policy Bill is poorly explained. Given the sensitivity analyses that are reported, it is surprising that the large increase in hours worked did not improve the S2 value more. The explanation of the significant changes in the assumptions about price trends is entirely

inadequate.[165] With the information provided, it is impossible to understand exactly how the calculation of price trends for public consumption is done and thus to form an opinion on whether the method is reasonable. This is most unsatisfactory.

Table 4.2 shows that there have been major changes in the assessment of fiscal sustainability in a short time. One important reason for this has been the changes in the estimate of price trends for public consumption. It is very problematic that assumptions behind such a crucial component in the calculations of fiscal sustainability are changed so often and so much, particularly when the changes are not explained well.

Table 4.2 The S2 indicator in different Budget Bills

2008 Budget Bill	-3.4[a)]
2008 Spring Fiscal Policy Bill	-3.4
2009 Budget Bill	-3.5
2009 Spring Fiscal Policy Bill	0.5
2010 Budget Bill	0.6
2010 Spring Fiscal Policy Bill	0.0
2011 Budget Bill	0.0
2011 Spring Fiscal Policy Bill	-3.4

Note: a) Excluding a technical adjustment equivalent to 3.3 per cent of GDP.
Sources: Respective Budget Bills.

As in previous Spring Fiscal Policy Bills, the 2011 Bill discusses a number of sensitivity analyses. These provide valuable information about how different assumptions affect the assessments. One important result is that the sustainability calculations are crucially dependent on employment in the private sector and public consumption. The Spring Fiscal Policy Bill also discusses the EU Commission's fiscal sustainability calculations and provides a good explanation of why they differ from the Ministry of Finance calculations.

As expressed in our previous reports, the presentation of some of the sensitivity analyses is incomplete. Thus, for example, better integration of immigrants is a rather hypothetical case, since it is not

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[165] The explanation given is: "The assumptions on which the long-term calculations are based are evaluated regularly. These evaluations have led to a revision of the assumption about price trends for public consumption. In the 2010 Spring Fiscal Policy Bill, the price of public consumption increased over time with wages, which is thought to be an overestimate. In this Bill, prices increase at a somewhat slower pace than wages and as a result, sustainability in the scenario is much stronger." (The 2011 Spring Fiscal Policy Bill, pp. 256-66).

clear how this will be achieved and it seems to presume that it can be done without costing anything.

The conclusion in the latest Spring Fiscal Policy Bill that there is fiscal sustainability with wide margins is somewhat unclear. It states that

> public finances thus appear to be sustainable in the long run even when the assumptions vary. There is considerable uncertainty in these calculations and there are several risks that may have an adverse effect on sustainability. If these risks coincide, fiscal policy may be unsustainable.[166]

This suggests that there are mainly downside risks. This may certainly be the case because increased demand for both public services and leisure would worsen sustainability. But it is not clear how these conclusions should be related to the budgetary targets, particularly the surplus target. There seems to be a cautious interpretation in the sentence that the lack of fiscal sustainability seems to be worse than the opposite:

> There is considerable uncertainty in this type of calculation and the results must therefore be interpreted with particular caution. If the public finances, for example, prove to be sustainable with good margins, this cannot automatically be interpreted to mean that there is currently scope for reform. If public finances instead prove to be unsustainable in the long run, it should be interpreted to mean that there are signs of imbalances and that these should be further investigated.[167]

In the 2010 Spring Fiscal Policy Bill, an S2 indicator in the interval between -1 and 1 was interpreted to mean that fiscal policy is sustainable. An indicator between 1 and 3 (or -1 and -3) was interpreted as meaning that the policy probably should be changed, while an indicator over 3 (under -3) was regarded as implying that there is: "a high probability that the policy will need to be changed and it will need to be changed earlier than if the indicator value is smaller".[168]

It thus appears that there is a different interpretation this year. This underlines the conclusion above and in our previous reports that the concepts of equity and intergenerational distribution have not been clearly thought out in the Ministry of Finance. Therefore, it is not clear how to interpret assessments of fiscal sustainability. Nor

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[166] The 2011 Spring Fiscal Policy Bill, p. 256.
[167] Ibid, p. 237.
[168] The 2010 Spring Fiscal Policy Bill, p. 266.

is this made easier by large, frequent and unexplained changes in the assumptions behind the sustainability calculations.

4.5 The pension system and long-term sustainability

The design of the pension system is an important factor that affects the long-term sustainability of public finances. Compared with most other industrialised countries, the adverse effects of an ageing population on public finances are expected to be smaller in Sweden because of the pension reform adopted in 1994 which became operational in 1999. The national pension system is now a defined contribution system, not the defined benefit system it was earlier. If the rules are followed, pensions are kept in line with the fixed contributions. When the number of retirees increases relative to the number of people employed, the pensions paid out will consequently decrease relative to wages. There will still be pressures on public finances because the percentage of the population gainfully employed generating tax revenue will decline while the cost of elderly care and health care will increase.

4.5.1 The Government's argument

The Government has previously justified the surplus target by arguing that pre-funding is necessary to finance the public expenditure that the demographic change will entail. We argued in our 2009 report that the arguments on both intergenerational distribution and tax smoothing over time instead indicated that the generations that will live longer than current generations should also fund it by working longer.[169] In the 2010 Spring Fiscal Policy Bill, the Government in responding to our remark made it clear that pre-funding will not be used to fund either the future costs arising as a result of a steadily increasing life expectancy or future quality improvements in the welfare services.[170] The 2011 Spring Fiscal Policy Bill takes a similar position.[171]

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[169] Fiscal Policy Council (2009a), Sections 2.3 and 6.3.
[170] The 2010 Spring Fiscal Policy Bill, p. 88.
[171] The 2011 Spring Fiscal Policy Bill, p. 238.

In our 2010 report, we welcomed the Government's clarification, but we also noted that it is unlikely that the pension rules will create the right incentives for a sufficient increase in the retirement age from a social efficiency point of view.[172] The private financial incentives in the pension system do not take into account the increase in tax revenue that would occur with a later exit from the labour market.

The 2011 Budget Bill comments on our argument, stating that there "is an incentives structure built into the pension system which, in the Government's opinion, should result in automatic increases in the effective retirement age over time".[173] This is correct but there still remains the problem that the private financial incentives do not reflect the social consequences.

The Government also points out that it has carried out a number of tax measures to increase older people's labour force participation.[174] This probably refers to the 'double' earned income tax credit introduced for people over 65 years and to employers not needing to pay social contributions for older workers other than the statutory retirement contribution of just over 10 per cent of the wage.[175] But this argument is questionable in this context, as more working hours for older people due to tax cuts provide a positive net contribution to public finances only if the self-financing rate is greater than one, i.e. if the increased tax revenue resulting from more hours worked compensates for the decrease in tax revenues due to lower tax rates for older people who already work. Self-financing rates over one are unusual in tax cuts. We know of no calculations showing such results, particularly for the tax cuts implemented to increase the labour supply of older people. Nor have any such calculations been done in the Ministry of Finance: on the contrary, in its microsimulation studies of the effects of the earned income tax credit, the Ministry has refrained from trying to calculate the supply effects for older workers because of methodological problems - too few previous observations of older workers' labour market behaviour. The general tax reductions for people over 65 that have been implemented, like those that according to this year's Spring Fiscal Policy Bill are planned, also counteract an

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[172] Fiscal Policy Council (2010), Section 4.1.6.
[173] The 2011 Budget Bill, p. 260.
[174] Ibid.
[175] For employees under 65, statutory employerlcontributions amount to about 31.5 per cent.

increase in the labour supply of older people through an 'income effect' (the elderly 'can afford' to work less).

In the 2011 Budget Bill, the Government refers to its ambition during its current term of office to raise the age limit for the right to remain in employment (the mandatory retirement age) from age 67 currently to age 69.[176] Such a change would have a decidedly positive effect on public finances. But it is unlikely to be sufficient. It admittedly increases opportunities for those who – on the basis of the private economic incentives in the pension system to work longer when pensions are adjusted to an increased dependency ratio – want to postpone their labour market exit. But the change would not do anything about the basic problem that the private economic incentives do not fully reflect the social efficiency gains of later retirement.

4.5.2 A procedure for regular reviews of the pension rules

The Government recently decided to appoint an inquiry which "given increasing life expectancy and a prospective increase in the number of older people relative to the number of people of working age" is to "analyse the pension-related age limits and identify the obstacles and possibilities for a longer working life". The inquiry will also "present proposals and alternative strategies for dealing with the pension-related age limits".[177] The terms of reference for the inquiry have been drawn up in consultation with the Working Group on Pensions, which includes representatives from the parties which supported the pension reform. We have previously requested such an initiative and therefore welcome it.[178]

Denmark may serve as a model. A system has been introduced there whereby the retirement age is governed by the expected remaining life expectancy for 60-year olds: according to the rules, the expected time in retirement is to be kept constant at 19 ½ years. Decisions on possible adjustments are to be taken every five years and any adjustments will be planned ten years in advance.[179] An automatic system like this cannot be as easily implemented in Sweden because

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[176] The 2011 Budget Bill, p. 260.
[177] Dir. 2011:34.
[178] Fiscal Policy Council (2009a), Section 2.3.6.3.
[179] See Fiscal Policy Council (2009a), Section 2.3.2.

there is no mandatory retirement age; when to retire is instead an individual decision. An automatic system would instead have to apply several parameters in the pension scheme:

1. The minimum age for claiming the national pension. It is currently 61 years.

2. The age at which entitlement to compensation from other social insurance ceases. This age is now 65 years for unemployment insurance. For those over 65 years, the Swedish Social Insurance Administration can withdraw the right to sickness benefits after 180 days. After 70 years of age, sickness benefits can be paid for a maximum of 180 days.[180]

3. The minimum age for receiving the guaranteed pension, currently 65 years. The guaranteed pension is given to those who have little or no earnings-related pension.

4. The statutory minimum age for obligatory retirement, i.e. the age at which employment protection legislation no longer applies. It is currently 67 years.

The advantage of an automatic adjustment of pension rules in accordance with predetermined principles is that it creates greater predictability for individuals. It should also be easier to gain acceptance of decisions that follow an established principle that age limits should be adjusted to life expectancy trends rather than decisions made on a case by case basis, which may then lead to major unexpected one-time changes. This is particularly true in matters involving decisions that are likely to be the most controversial, i.e. those concerning the minimum retirement age (and where the Government has so far not proposed any changes).

A less radical variant would be a broad political consensus that the average retirement age should increase at the same rate as life expectancy and that at regular intervals – for example, every five years as in Denmark – there will be a review of whether this actually is being done. Such an agreement should include commitments to make changes in the retirement rules discussed above if necessary in order to achieve the desired increase in the effective retirement age.

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[180] See also SNS (2011).

**Figure 4.5 Life expectancy and effective retirement age**
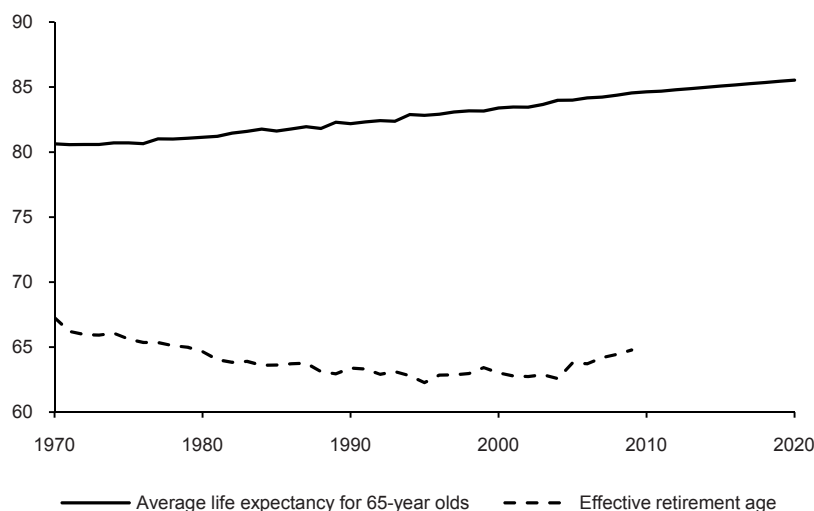
Note: The effective retirement age is defined as the average age of those who are over 40 and leave the labour force to retire.
Sources: SCB and OECD.

As shown in Figure 4.5, life expectancy at age 65 has increased steadily since 1970. At the same time, the effective retirement age declined until the mid-1990s. Subsequently, there has been some increase, particularly in recent years. Figure 4.6 shows how the ratio between the effective retirement age and life expectancy fell from 83.4 per cent in 1970 to 75.2 per cent in 1995. The ratio has since risen to about 76.6 per cent in 2009.

Reviews of how the effective retirement age has changed should consider how they came about. If a later labour market exit age is justified on the grounds that the Government wants the generations that live longer to pay for the costs to the public purse of this, what financing is used obviously plays a role. If later retirement is achieved through tax cuts resulting in lower net tax revenues, these will not have addressed the fiscal problems that an ageing population may lead to. This constitutes a further argument for developing generational accounting of the type discussed in Section 4.2.

Figure 4.6 The ratio between the effective retirement age and life expectancy, per cent
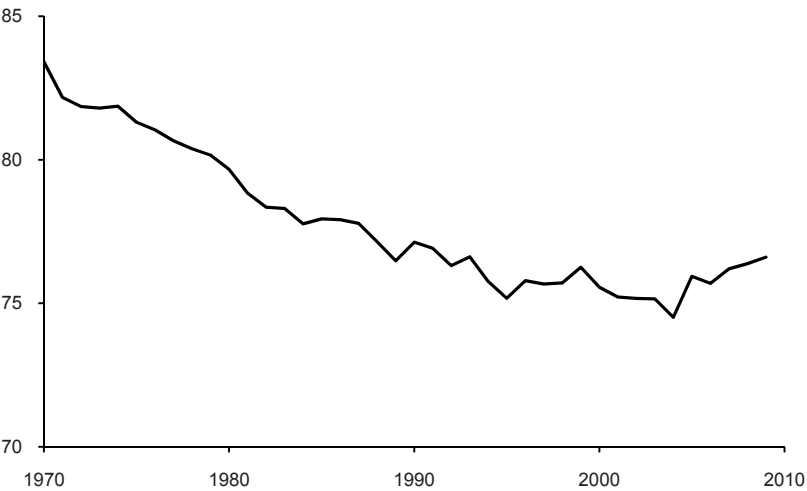
Note: See Figure 4.5.
Sources: SCB and OECD.

Figure 4.7 Hours worked annually per person in the population
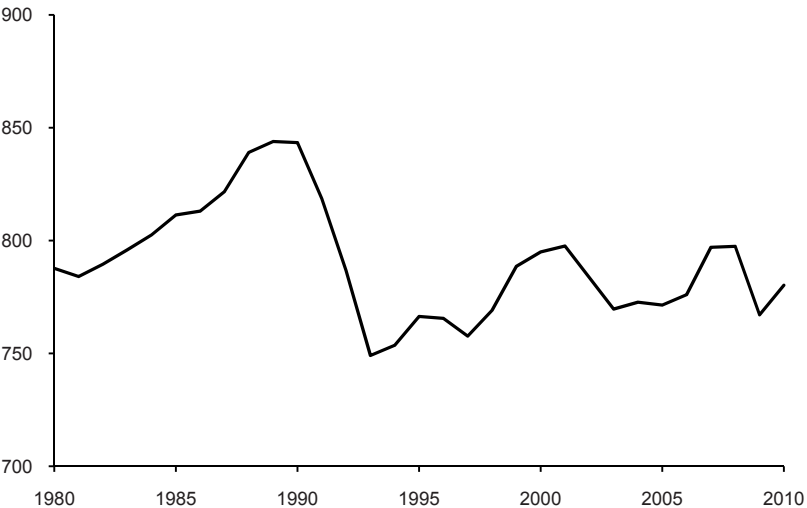
Sources: NIER and SCB.

Regularly recurring reviews of the pension rules should also take into consideration labour market developments in general. An upward trend in the number of hours worked per person in the population is critical to be able to finance an ageing population. An increase in the number of hours worked is affected by several different factors: labour force participation, employment among those participating in the labour force, the number of employed persons who are in work and the hours worked by those who work. As shown in Figure 4.7, the number of hours worked per person fell during the crisis in the 1990s and has since shown only a weak trend increase.

For labour force participation, the labour market entry age is as important as the exit age. It is, for example, well known that by international standards, the average graduation age for university and college students is very high in Sweden (age 29; Iceland is the only OECD country with a higher graduation age). The Long-Term Survey recently analysed this issue and raised the question of changing the student aid system to give stronger incentives to graduate early: the proposal would link the proportion of the student aid that students have to pay back to the graduation age.[181] The more of these measures that are implemented and promote an increase in the number of hours worked per lifetime, the lower the requirements will be for changes in pension rules to meet the demographic changes.

One potential problem in raising the retirement age is the income distribution aspect. Older people's health varies considerably between individuals. These differences appear largely to be related to socio-economic factors, particularly education level.[182] What is relevant in this context, however, is whether – and if so, to the extent to which – changes in life expectancy and health enabling people to continue working later in life differ between different groups.[183] It is likely that rule changes to raise the retirement age will require giving older people with serious health problems generous sick leave and early retirement. The tighter sickness insurance rules may therefore make a policy with the aim of a later retirement age more difficult.

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[181] The Long-Term Survey (2011), Chapter 10.

[182] See Gabriella Sjögren Lindquist and Eskil Wadensjö's background report to Fiscal Policy Council 2009 (Sjögren Lindquist and Wadensjö 2009).

[183] The Velfærdskommission (2006) in Denmark found that rising life expectancy in the mid-1990s was shared about equally among different socio-economic groups.

Not least, it may weaken public support for such a policy. This problem needs to be dealt with if the retirement age is to be raised.

4.5.3 Conclusions

We welcome the Government's appointment of an inquiry with the remit to present proposals on how the average retirement age could be raised. It is good that the inquiry will consider both whether it can be raised automatically by indexing age-related pension limits to life expectancy and whether it can be done by successive political decisions. The first method will presumably increase the likelihood that an increase in the retirement age will actually take place, while making it easier for individuals to foresee how pension terms will be changed. The advantage of successive political decisions is that it is easier to take other factors into account, for example, how the number of hours worked are affected by changes in the labour market entry age, the employment rate and average hours worked.

It is also encouraging that the inquiry will present "proposals for measures in the work environment or other areas that will improve the conditions for working later in life". We have in this connection pointed out the need for coordination with sickness insurance. Rule changes that make it less advantageous to retire early may need to be combined with rule changes in sickness insurance that treat older people with health problems more generously than the current system does.

5 Macroprudential regulation

This chapter summarises the lessons on macroprudential supervision and regulation learned from the global financial crisis and applies them to Sweden. The chapter ends with a clear recommendation: the current framework for financial stability needs to be strengthened. We discuss two options. The first is to give the *Riksbank* greater responsibility for macrofinancial stability. The second is to establish a new authority, a *financial stability council*, with the remit to identify systemic risks to the financial sector and propose measures.

The recent international financial crisis, sometimes called the Great Recession, has triggered an intense discussion about how future crises should be prevented. Those responsible for economic policy, as well as economists and financial economists at universities and international organisations such as the IMF and the OECD, grossly underestimated the systemic risks to the financial sector that had accumulated before the crisis.

After the crisis, a number of proposals for strengthening financial stability have been presented. True, financial stability was an economic policy goal in the past, but it has now emerged as an even more explicit one. Focus has fallen on macroprudential supervision and regulation targeting the *entire* financial system, unlike the traditional approach to financial regulation concentrating on individual financial firms, individual financial instruments or individual markets.[184]

At present an international effort is under way to establish appropriate forms of macroprudential supervision and regulation. One difficult challenge is to define the boundaries of responsibility for financial stability between the central bank, the ministry of finance and the supervisory authority.

Section 5.1 analyses the relationship between government finances and economic crises. Section 5.2 discusses how the financial crisis has impacted on the way economists view the proper design of stabilisation policy. Given that financial stability is now a goal with a higher priority on the policy agenda, the question is how this objective should be defined. There is an answer in Section 5.3. Section 5.4 provides a theoretical framework for analysing financial

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[184] Macroprudential policy covers two aspects: macroprudential supervision (surveillance) and macroprudential regulation. See, for example, Davis and Karim (2010).

stability. Section 5.5 describes the instruments available to achieve the objective of financial stability. Section 5.6 describes the institutional framework for maintaining financial stability in Sweden and discusses the changes that might be appropriate. Section 5.7 provides a summary.

5.1 Costs of crises

The deep crisis that the world economy has just undergone shows a strong relationship between government finances and recessions. The economic slowdown has led to soaring public debt in both the United States and Europe. The crisis, which began in the financial system in the United States in 2007, caused a rapid deterioration in the US federal budget. The banking crisis turned into a budget crisis. The same process is evident in the euro area. Budget deficits in some countries that are euro members have reached unsustainable levels.

The link between government finances and the state of the macroeconomy is evident in all major economic downturns in modern times, particularly in those associated with pronounced financial crises. This is illustrated by the Swedish experience in Figure 5.1, showing general government net lending from 1950 to 2012, and Figure 5.2, showing government debt development in the same period.

Severe economic crises are usually associated with serious problems in the financial system. But a financial crisis, if it is limited, does not necessarily lead to a severe crisis in the real economy. The stock market crash in 2001/02 after the IT bubble caused no major decline in GDP, mainly because the banking system was not exposed to stock market events. But the recent financial crisis – with its links between the real estate market and mortgage loans in the banking system – brought about a downturn in the global economy comparable to the *Great Depression* in the 1930s.[185]

In Figure 5.1, general government net lending in Sweden shows two sharp declines. The first coincides with the two oil price shocks, OPEC I in the mid-1970s and OPEC II in the early 1980s. The second decline was a result of the domestic financial crisis in the early 1990s. The development of central government debt in Figure 5.2 reflects changes in general government net lending in Figure 5.1

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[185] See, for example, Albers and Jonung (2011) and Eichengreen and O'Rourke (2009). Financial crises involving the housing market seem to be the most serious form of financial crisis.

Figure 5.1 General government net lending, per cent of GDP
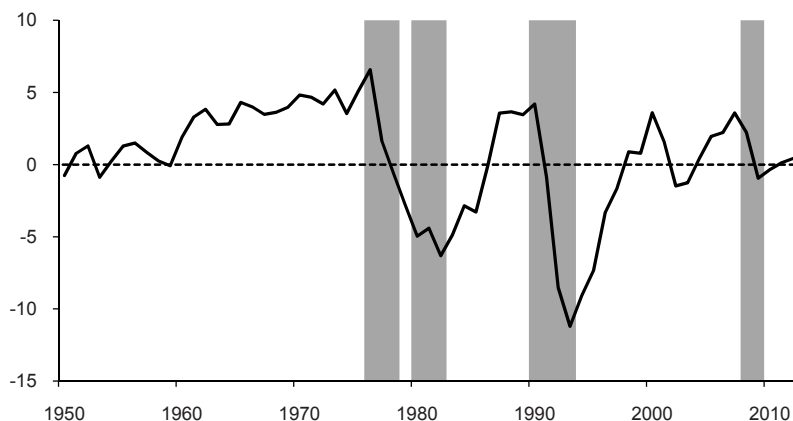
Note: The shaded areas indicate years when there was a serious economic crisis as per the dates in Table 5.1.
Sources: 1950-1993 Statistics Sweden (2008), 1993-2012 NIER.

Figure 5.2 Central government debt, per cent of GDP
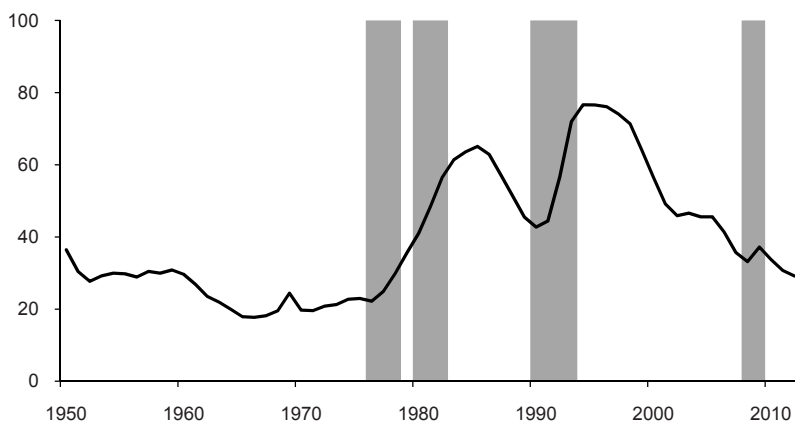
Note: The shaded areas indicate years when there was a serious economic crisis as per the dates in Table 5.1.
Sources: Swedish National Debt Office and NIER.

Table 5.1 Losses in real income, industrial output and employment in severe crises in Sweden, per cent

Crisis year	1877-78	1907	1920-21	1931-33	1976-78 (OPEC I)	1980-82 (OPEC II)	1990-93	2008-09
1. Real income loss	11.3	11.2	9.6	17.7	9.9	1.9	13.0	13.4
Time below trend	1877-78	1908-09	1921	1931-33	1976-78	1980-82	1990-93	2008-09
Loss per year of crisis	5.7	5.6	9.6	5.9	3.3	0.6	3.3	6.7
2. Industrial output loss	14.7	17.3	19.8	30.9	13.5	5.3	17.0	29.7
Time below trend	1877-78	1908-09	1921	1930-33	1976-78	1980-82	1990-93	2008-09
Loss per year of crisis	7.4	8.7	19.8	7.7	4.5	1.8	4.3	14.9
3. Employment loss	3.1	1.2	8.4	10.9	2.1	1.9	16.6	3.0
Time below trend	1877-79	1908-09	1921-22	1931-33	1976-78	1981-83	1990-94	2009
Loss per year of crisis	1.0	0.6	4.8	3.6	0.7	0.6	3.3	3.0

Note: The table is based on calculations in Hagberg and Jonung (2005), which have been updated for the crisis years 2008-2009.
Source: Hagberg and Jonung (2005).

An economic crisis affects government finances through several channels. The automatic stabilisers, i.e. the automatic changes in tax revenue and public spending that are the result of cyclical developments, are one important channel.[186] In the build-up to a financial crisis, the way in which the automatic stabilisers function makes the public finances appear strong: tax revenues commonly grow faster than government spending during the boom. When the boom changes to bust, there is a sharp reversal in general government net lending. The decline in output and employment leads to lower tax revenues and higher spending on unemployment. The sharp swings in the prices of assets such as shares and real estate, a key part of the boom-bust pattern, helps make the government budget outcome strongly cyclical through the taxation of profits and income from capital.[187]

In the event of a financial crisis, governments generally choose to support the financial system in distress. This may be by direct support for banks and other financial institutions to strengthen their capital base, by taking over bad loans and failing institutions, and by various forms of indirect support such as guarantees to institutions. Thus, when financial crises occur, some parts of the losses in the financial system are 'socialised'. The costs of this public sector intervention can be enormous, particularly in the short run, as illustrated by the course of events in Finland, Norway and Sweden in the early 1990s and developments in the United States and several European countries now.[188]

In extreme crises, budget deficits are likely to become unsustainable. In that event, one solution is debt default – partial or total. Argentina is a recent example. Such a course of action cannot be ruled out for some of the most heavily indebted countries in the euro area.

The cost of financial crises was discussed above from the perspective of government finances. But the costs to society are the most serious ones. Table 5.1 shows the losses in real GDP, industrial output and employment in Sweden's seven deepest economic crises

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[186] See Section 2 of Chapter 1.

[187] The relationship between asset prices during boom-bust and the government budget balance in several countries is analysed by Eschenbach and Schuknecht (2004). The pattern in Finland and Sweden during the financial crisis in the early 1990s is discussed in Jonung et al. (2009b).

[188] Government support for the banking sector in the years 1991-1993, measured in relation to GDP, was 8.1 per cent in Finland, 3.6 per cent in Norway and 4.1 per cent in Sweden. See Vastrup (2009).

in modern times: 1877/78, 1907, 1920/21, 1931-1933, the oil crisis in 1976/77 (OPEC I) and in 1980-1982 (OPEC II), 1991-1993 and the most recent crisis in 2008/09.

All the crises in Table 5.1, except OPEC I and II, are closely linked to financial developments. They were either generated by foreign financial imbalances, as the crises of 1877/78, 1907, 1931-1933 and 2008/09 were, or caused by domestic monetary and fiscal policy, as the crises of 1920/21 and 1991-1993 were. The cost of the recent crisis is mainly reflected in industrial output. The loss in GDP and employment is clearly lower than the loss in industrial output. The explanation for this pattern is that the global crisis first and foremost struck Sweden's export-dependent industry.

The large drops in output and employment that go hand-in-hand with serious crises are the main reason for the sharp swings in the public finances. Once a crisis has erupted, it completely dominates fiscal policy – as is the case now in most EU countries and the United States. Thus, there are strong arguments for an economic policy aimed at preventing financial imbalances that may contribute to a crisis.

5.2 The financial crisis and stabilisation policy

A lively debate has ensued as to what caused the global financial crisis that began in 2007.[189] From this debate, it is evident that those responsible for stabilisation policy underestimated the risk of financial imbalances. This neglect may be partly explained by the view of monetary and fiscal policies that prevailed before the Great Recession started.

Before the current crisis, the prescription for a successful monetary and fiscal policy was roughly as follows.[190] Monetary policy should concentrate on maintaining low and stable inflation through the use of the short-term interest rate. This task had been delegated to central banks which were made independent of the political system. Fiscal policy should primarily be based on automatic stabilisers. Discretionary fiscal policy, i.e. discretionary measures taken on a case by case basis, should be avoided. Fiscal policy should

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[189] The literature about the causes of the recent crisis is summarised by Davies (2010), among others. He provides a general discussion of some thirty explanations.
[190] See, for example, Blanchard et al. (2010).

instead be rules-based.[191] Over a business cycle, the general government budget should be balanced or show a surplus.

This consensus on the design of macroeconomic policies, which emerged in the second half of the 1980s and in the 1990s, rested in part on the perception that there was a strong temptation for politicians in power to engage in expansionary short-term fiscal and monetary policies. Their focus on the short term was seen as the cause of rising deficits in public finances and high inflation in the 1970s and 1980s.

Before the recent crisis, most macroeconomists regarded the economy as a dynamically stable system that was not prone to end up in crisis. The financial sector was seen as an important engine of economic growth. The many innovations in the financial system – including those that followed in the wake of financial deregulation in the 1980s and 1990s – were seen as beneficial both for the financial system and for the economy in general. Financial instability and financial crises were not on the economic policy agenda in the United States and Europe and barely on the agenda for researchers in macroeconomics. It was mostly economists interested in developing countries or the historical perspective who were engaged in these issues.

The stabilisation policy prescription, as summarised above, was expected to lead to monetary and fiscal stability – and thus to macroeconomic balance. Macroeconomic developments from the mid-1980s until the current crisis – the *Great Moderation* – with low inflation, relatively good growth and small cyclical swings compared with the pattern of high inflation and stagnation in the 1970s and early 1980s were taken as evidence that the prescription worked.

Mainstream macroeconomic theory as it developed in the 1980s and 1990s was consistent with this interpretation of economic developments. Equilibrium models built on assumptions of rational expectations and rational behaviour occupied a dominant position in macroeconomic research.

The global financial crisis showed in a forceful way that the established view of stabilisation policy was fraught with weaknesses. It shut its eyes to the risks developing in the financial markets. It did not see how excessive expansion of credit to households and

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[191] Discretionary fiscal policy is the opposite of rules-based fiscal policy.

businesses combined with speculation in rising real estate prices laid the foundation for the most serious recession since the 1930s.

Criticism has been directed at central banks around the world for allowing excessive credit growth. In this way, they contributed to the financial imbalances that triggered the global crisis. When central banks in addition had to resort to acute crisis management with the help of extremely low interest rates, unconventional monetary policy (*quantitative easing*) and various forms of assistance to financial institutions, they ended up in a political sphere outside traditional central bank policy. They no longer appeared independent of other economic policies. The crisis has therefore weakened the credibility of the monetary policy strategy based on inflation targeting and independent central banking that prevailed before the crisis. [192]

The crisis also undermined fiscal stability. Automatic stabilisers contributed to a growing gap between tax revenue, which fell as a result of the crisis, and public expenditure, which grew because of the crisis. Discretionary measures were introduced on a large scale to protect businesses and jobs. The Keynesian approach, which had lost credibility in the 1980s and 1990s, soon received attention again at the international level. Fiscal frameworks – such as that in the EU – were swept aside. The consequence has been large budget deficits and growing government debt throughout much of the Western world and in some cases acute fiscal crises.

Governments chose to support the financial system with enormous subsidies to avoid bank failures.[193] Private debts were transformed into public debt - a process that was immediately regis-tered in the larger government debt. Those in charge of both mone-tary and fiscal policy had to act as lenders and buyers of financial assets on a large scale. Thus, they abandoned the existing stabilisation policy prescription based on rules and automatic stabilisers.

The global financial crisis has also unleashed a controversy in the academic world.[194] Many researchers are questioning what they consider to be fair-weather models in macroeconomic theory, which

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[192] See, for example, Leijonhufvud (2010).

[193] See Kim and Kumar (2010) for an international overview of government support to the financial sector during the recent crisis.

[194] See the theme issue of *Ekonomisk Debatt* about the crisis in macroeconomic theory with contributions by Andersen (2010b), Flodén (2010), Leijonhufvud (2010) and Lindbeck (2010). See also the Swedish Economic Association's proceedings in *Ekonomisk Debatt* 2010:3 and Calmfors (2009). The international literature is enormous. See, for example, Buiter (2009), Caballero (2010), Krugman (2009) and Leijonhufvud (2011) for different perspectives.

proved to be misleading. The economics profession, with few exceptions, paid insufficient attention to the risks posed by the financial imbalances that led to the global crisis. Established models in macroeconomics and financial economics – and thus the stabilisation policy prescription – have therefore come under strong criticism.

5.3 Financial stability as a policy goal

The crisis has given higher priority to the goal of financial stability. How does this objective fit into the conventional framework for stabilisation policies where monetary policy is the responsibility of the central bank and fiscal policy is formulated by the government? We provide an answer below.

5.3.1 The goals and instruments of stabilisation policy

In a historical perspective, the goals, the instruments and the institutional framework for Swedish stabilisation policy have been in a constant state of flux, influenced mainly by deep economic crises. The depression of the 1930s is an important crossroads. It opened the way for the Stockholm School as well as the Keynesian prescription whereby fiscal policy had a more active role at the expense of monetary policy.

In the decades immediately following World War II, stabilisation policy had three main goals: full employment, price stability and external balance (balance of payments equilibrium).[195] Sweden participated in the Bretton Woods system from the early 1950s to the early 1970s when the system collapsed. It was based on fixed exchange rates. The Swedish *krona* was pegged to the US dollar. In this way the external balance acted as a central constraint on domestic stabilisation policies. The fixed exchange rate of the *krona* was the top policy priority in this period.

The Bretton Woods system rested on foreign exchange controls, i.e. on restrictions on the flow of capital across borders. Sweden was

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[195] See, for example, Lundberg and Wibble (1970), who defined full employment as an unemployment rate below two per cent and price stability as less than four per cent inflation. Lundberg and Wibble also regarded annual economic growth of more than four per cent as an "important national goal".

thus shielded from the outside world in financial terms. Protected by exchange controls, the domestic financial system was subject to extensive regulations with the Riksbank directly determining interest rates and credit flows. The growth in the volume of credit was decided unilaterally by the Riksbank in this institutional framework.

This system of far-reaching external and internal financial regulations created financial stability. Financial crises in the Bretton Woods period were therefore very infrequent.[196] Financial stability was thus not an issue on the political agenda in Sweden during the Bretton Woods era.

Responsibility over stabilisation policies rested with the Ministry of Finance during this period. With control over virtually all economic policy instruments, the finance minister had a uniquely strong position vis-à-vis the Riksbank.

The collapse of the Bretton Woods system in the early 1970s and the process of financial deregulation in Sweden in the latter part of the 1980s led to a new set of goals, instruments and institutions for stabilisation policy. Deregulation was the start of the boom-bust process that gave rise to the financial crisis in the early 1990s. This in turn paved the way for a floating exchange rate for the *krona*, free capital mobility and a clear division of responsibility between the Riksbank and the Ministry of Finance.

After the 1990s crisis, the Riksbank became independent of the Ministry of Finance. The Bank's primary task was defined as safeguarding *monetary stability*, i.e. low and stable inflation. *Fiscal stability* became the objective of fiscal policy. This latter goal was formulated in a new fiscal framework with a surplus target for the entire public sector, an expenditure ceiling for the central government and a balanced budget requirement for municipalities and county councils.[197] Monetary and fiscal stability are *intermediate* objectives, which, if met, contribute to achieving the overall objective of stabilisation policy, namely, macroeconomic balance, i.e. high and even resource utilisation.

The present framework for monetary and fiscal policy in Sweden is based on experience primarily from the crisis in the early 1990s.

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[196] See Bordo et al. (2001) for a study of the incidence of financial crises in various stabilisation policy regimes.
[197] The concept of fiscal stability is not as well-defined as monetary stability. A sustainable fiscal policy is a key element of fiscal stability.

This is reflected in the Government Communication on the fiscal framework in March this year.[198] However, as with previous crises, there are now new lessons to be learned about stabilisation policy objectives and instruments from the most recent international crisis.[199]

5.3.2 Financial stability – a new goal

The consensus view until the recent financial crisis was that monetary and fiscal stability are sufficient to maintain macroeconomic balance. The global financial crisis has now provided strong arguments as to why financial stability should itself be a goal. Thus a financial policy to achieve this objective is also needed.[200] Monetary stability and fiscal policy stability are necessary but insufficient conditions for macroeconomic balance.

When financial stability is added to the economic policy agenda, it raises questions about what instruments and what institutional framework should be chosen to achieve this objective. Will current regulatory instruments be up to the task? Should a new authority be established with a remit to design financial policy and supervise financial stability? A new policy goal is also very likely to lead to conflicts with existing ones.

This post-crisis approach is summarised schematically in Figure 5.3. Here financial policy is a policy area falling between monetary policy and fiscal policy with financial stability as an intermediate objective of stabilisation policy, along with monetary and fiscal stability.

Monetary policy mainly affects inflation (the unbroken arrow to monetary stability but it also has effects on financial stability (the dashed arrow to financial stability) and on fiscal stability (the dashed arrow to fiscal stability). The same reasoning applies to financial policy. It mainly affects financial stability but it also impacts on monetary and fiscal stability. A similar reasoning applies to fiscal policy. Measures taken in the three policy areas therefore affect other objectives than the direct one.

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[198] Finansdepartementet (2011a).

[199] The role of crises as the driving force behind changes in economic policy in Sweden during the latter half of the 1900s is examined in ESO (1999).

[200] See, for example, Borio (2008) for arguments for financial stability as an economic policy objective by itself.

Figure 5.3 Relationships between financial policy, monetary policy and fiscal policy, a schematic description
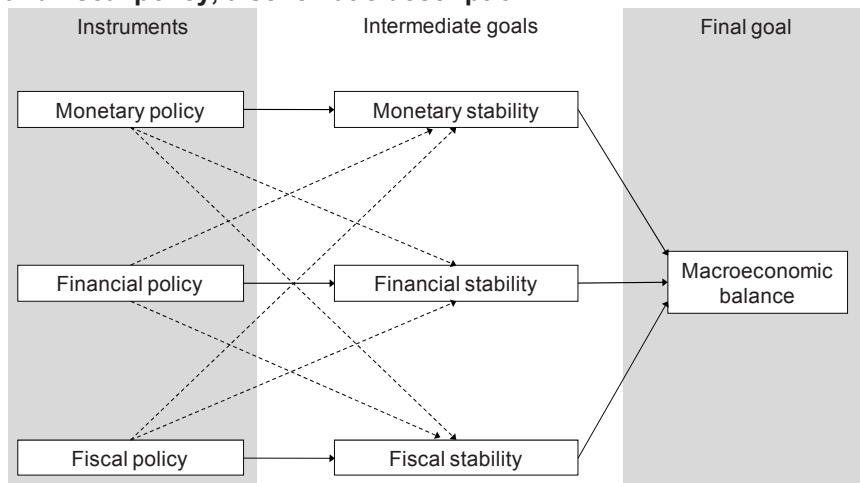
Note: Unbroken arrows represent primary effects, dashed arrows secondary effects. There is thus a hierarchy between the different goals for each instrument.

If financial stability is identified as an explicit goal for economic policy, a clear definition is needed. But no such definition exists. Financial stability is sometimes defined negatively – as the absence of financial instability, imbalances and crises. Another definition is that the fundamental task of the financial system is to allocate credit and risk without creating imbalances that threaten macroeconomic balance. As the financial system affects both the allocation of resources and the overall stability of the economy, both aspects should be taken into consideration. Schinasi (2004) has proposed the following definition:

> A financial system is in a range of stability whenever it is capable of facilitating (rather than impeding) the performance of an economy, and of dissipating financial imbalances that arise endogenously or as a result of significant adverse and unanticipated events.

Schinasi eventually decides on a shorter version that does not mention the financial system:

> Financial stability is a condition in which an economy's mechanisms for pricing, allocating, and managing financial risks (credit, liquidity, counterparty, market, etc.) are functioning well enough to contribute to the performance of the economy.

This view can be found in many explanations of the concept of financial stability.

Under the Sveriges Riksbank Act, one of the tasks of the Riksbank is "to promote a safe and efficient payment system". The task has been broadly interpreted as giving the Riksbank responsibility for financial stability in Sweden. The Riksbank defines financial stability as follows:

> The Riksbank has chosen to define financial stability as meaning that the financial system can maintain its basic functions and also has the resilience to withstand disruptions that threaten these functions.

The fundamental functions of the financial system are mediating payments, converting savings into consumption and investment, and managing risk.[201] The Riksbank observes in this connection that "there is no unambiguous measure of financial stability".

The Riksbank's definition is in line with the interpretations made by other central banks.[202] A common feature is their emphasis that the financial system should be responsible for the allocation of credit and risks between savers and investors and act as a financial intermediary in an effective way, even in the event of adverse shocks.

One way to summarise the discussion above is to define the goal of financial supervision and regulation as *minimising the risk of future financial imbalances and crises, while providing the financial system with a good environment in which to perform its traditional functions and to develop over time in response to new challenges.* Here we have both a macroeconomic objective – financial stability – and a microeconomic objective, namely a well-functioning credit and payments system.

5.4 Theory of financial crises

There is currently no generally accepted theory of financial crises in the same way as there are models of monetary and fiscal policy in introductory economics textbooks. But there is a significant consensus on some key elements in the analysis which provides a sufficient basis for economic policy recommendations. This consensus is a generalisation of the historical experience of financial crises.

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[201] See the Riksbank (2010).
[202] Most central banks have explanations of the concept of financial stability on their websites. No central bank has, from what we have seen, a concise definition of the term.

A common feature of research on financial crises is the emphasis on the volume of credit.[203] The expansion and contraction in the amount of credit, particularly in that part channelled via bank loans, is the key to understanding financial crises.

The driving forces behind a financial crisis are best discussed with the help of the boom-bust pattern of a financial crisis. A positive impulse triggers the process. It may be financial deregulation, more expansive monetary or fiscal policy, technological developments that create expectations about high productivity growth and high profits or a combination of these factors. The impulse sparks increased demand for credit. The financial system responds by expanding the supply of credit. In this phase, financial innovations generally contribute to the credit expansion.

The growing credit volume leads to rising real estate and share prices. Rising asset prices increase the wealth of households and businesses. Balance sheets in the private sector swell. Households and businesses feel richer. These positive wealth effects contribute to increased optimism and increased appetite for risk. Households and businesses have more opportunities to take out loans thanks to the increased value of assets that can serve as collateral. Leverage increases. The demand for credit grows even more, which in turn feeds the increase in asset prices. This yields further positive wealth effects, more optimism and exorbitant expectations. The process becomes self-perpetuating. Psychological factors such as growing optimism and greater risk-taking contribute to this cumulative streak. The volume of credit grows in this phase at a pace far above its trend. At the same time, the perceived real interest rate, i.e. the nominal rate adjusted for expected inflation, is low, which pushes up the demand for credit and contributes to rising asset values.

The self-reinforcing forces are supported by procyclical behaviour in the financial system. The prevailing optimism leads to underestimation of credit risk and poorer credit assessment. Banks reduce their capital ratios when they become more risk-prone. They

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[203] See, for example, Davis and Karim (2010), Jordà et al. (2010) and Reinhart and Rogoff (2009) for descriptions of the boom-bust sequence in which the demand for and supply of credit play the central role.

rely more than before on short-term borrowing to finance long-term lending during the boom phase.[204]

The rapid growth in the credit volume in the financial system has profound effects on the real economy. The positive wealth effects lead to an overheated economy with overfull employment. Households reduce their savings and increase their consumption. At the peak of the boom, the savings ratio is low and sometimes negative. In an open economy, the export sector is crowded out when price and wage increases reduce its international competitiveness. Growth in the domestic sector, particularly in the construction sector, is fuelled by the credit-driven upturn.

The upturn is broken by a negative impulse that spreads through the financial system. It may come from a tightening of monetary or fiscal policy, leading to a sharp increase in the real rate of interest, a large-scale bankruptcy, or an external shock stemming from the global economy.

Boom is now followed by bust with interest rates rising and credit growth slowing. Asset price inflation turns to asset price deflation. Falling asset prices lead to shrinking wealth, while the real value of bank loans rises as loans are determined in nominal terms. In this phase, households and businesses try to reduce their leverage. Pessimism grows. Loans turn bad. Balance sheets in the private sector are undermined when equity is wiped out. The downturn, like the upturn, is propelled by self-perpetuating forces. Savings rise while investment and consumption fall when households and businesses face problems servicing their debts. The real economy is drawn into depression with bankruptcies and rising unemployment.

As noted in Section 5.1, the boom-bust cycle has a strong impact on the financial position of the public sector. During the upswing, government finances strengthen. During the downturn, the Government's task is to take measures to soften the impact of the wealth losses that are created when the value of assets in the private sector is falling, thus weakening government finances.

The boom-bust cycle is not a new phenomenon. It has existed as long as there has been a credit system. Recently Iceland, Ireland, Spain and the United States have undergone this process. Similar

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[204] The maturity transformation, which is one of the basic functions of the banking system, becomes more risky when short-term borrowing, particularly via market financing, is the predominant source of long-term lending.

processes took place in Finland, Norway and Sweden in the early 1990s.[205] The volume of credit is thus the strategic factor in all financial crises. The demand for credit, as well as the supply, is affected by the real rate of interest. Thus, monetary policy has an important role to play in the course of each crisis.

The history of financial crises does not suggest any precise pattern of growth in credit; not all episodes of rapid credit expansion end in deep recessions. Sharp swings in the volume of credit are thus a necessary but not a sufficient condition for a financial crisis.[206]

The boom-bust theory provides clear recommendations for economic policy. Stabilisation policy should restrain the swings in the credit volume, in the real rate of interest and in asset prices. These swings are not due solely to monetary policy and financial regulation. They are also created *within* the financial system through its procyclical behaviour. In brief, the task of economic policy is to dampen the procyclical pattern of the financial sector to avoid both boom and bust.

5.5 Instruments for financial stability

5.5.1 Financial regulation and financial stability

The traditional political response to a financial crisis is to strengthen the regulation of the financial sector. Almost all Swedish banking regulation has developed in this way. The same pattern also applies internationally.

This response can also be observed now. A key lesson from the recent crisis is that more attention should be paid to *systemic risks* in the financial sector.[207] These risks were created by close, but underestimated, links between different institutions, between different assets in the financial system, and between different national financial systems. In this area, the existing financial supervision and regulation were the weakest.

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[205] See, for example, the various contributions in Jonung et al. (2009a) for analyses of the Nordic pattern during the 1990s crisis.

[206] The dynamics behind financial crises can also be described using the credit multiplier, expressing the ratio of bank loans to the reserves of the banking system. The multiplier is strongly procyclical. During a boom, the ratio of bank lending to bank reserves increases, while during a bust, it decreases.

[207] See, for example, Englund (2009).

Therefore, macroprudential supervision and regulation are emphasised in the current debate as a means to reduce the systemic risks that might contribute to future crises.[208] The macroprudential approach is sometimes distinguished from the microprudential approach. The first focuses on the entire financial system, whereas the second focuses on individual financial firms, financial instruments and financial markets. Most of the current financial regulation is microprudential, although it is difficult to make a clear distinction between the two types of regulation. Table 5.2 gives an overview of the differences between macro- and microprudential regulation.

A large number of proposals for re-regulation are currently under discussion internationally such as regulations of derivatives trade, bank capital adequacy ratios, transparency, accounting principles, supervision of credit rating agencies, deposit insurance, liquidation funds, hedge funds, short selling, and liquidation of financial institutions. Most of these proposals are basically of a microprudential character.

Many analysts are of the view that additional microprudential regulation is unlikely to prevent future imbalances. By focusing on individual firms or parts of the financial system, these regulations do not take into account the interdependence between markets and between financial institutions, which made the financial system so vulnerable. Experience shows that microprudential regulation often creates strong incentives for individual financial institutions to develop techniques aimed at circumventing regulation. The whole system of shadow banking in the United States grew up outside the regulated system to enable greater risk-taking than would otherwise be possible. When the crash came, the shadow banking system was one source of the depth of the crisis.

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[208] See Davis and Karim (2010), Galati and Moessner (2010), Ingves (2010), Hanson et al. (2011) for arguments in favour of macroprudential regulation.

Table 5.2 Comparison of macroprudential and microprudential perspectives

	Macroprudential perspective	Microprudential perspective
Intermediary objective	Limit risks of imbalances in the entire financial system (general equilibrium app-roach)	Limit risks of imbalances in individual financial institutions, instruments or markets (partial equilibrium approach)
Final objective	Prevent financial crises that undermine the macroeco-nomic balance	Protect consumers/depositors/investors/other financial institu-tions
Sources of shocks	Shocks are primarily seen as created endogenously in the financial system	Shocks are primarily seen as exogenous
Co-variation of risks and interdependence among financial institutions	Important	Less important or unimportant
The design of regulatory measures	Regulation addressing the entire financial system	Regulation addressing indivi-dual financial institutions, instruments or markets

Source: Borio (2008).

The criticism of microprudential regulation should not be interpreted as implying that this kind of regulation is unnecessary. It is needed and there are reasons for improving it in a number of respects. But microprudential regulation is insufficient for ensuring financial stability. It should therefore be supplemented with macro-prudential measures.

The proposals for macroprudential regulation include two kinds of recommendations: those that concern macroprudential super-vision and those that concern regulation using macroprudential instruments.[209] The strongest consensus seems to be about supervision.

Macroprudential supervision

One possibility in this area is to establish special authorities or bodies (macrofinancial stability councils) with the task of supervising

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[209] See, for example, Davis and Karim (2010) for an overview.

financial stability. The idea is that financial stability councils should assess the total risk, i.e. the systemic risk, for various financial imbalances. These authorities should focus their attention on links between the financial system and other parts of the economy. They should be able to propose measures if the risk of disruption looks threatening.

How stability councils should be positioned in relation to the central bank and the traditional regulatory authority is an open question. There are different solutions. Macroprudential supervision could be the responsibility of the central bank or of the supervisory authority. It could also be run by an independent authority outside existing institutions. There is also a discussion about the appropriate composition of a macrofinancial stability council.[210]

Macrofinancial stability councils have been set up in the EU and the United States. The European Systemic Risk Board (ESRB) was established in January 2011 with responsibility for macroprudential supervision in the EU as a whole. The ESRB is to monitor financial sector risks in all member states and risks associated with cross-border financial links in the EU. The Board is also to survey risk in global developments. In case of potential shocks, which could affect the real economy, the ESRB is to issue warnings and make recommendations. These should be actively followed up. The ESRB consists of representatives from central banks and supervisory authorities in the EU and from the ECB and the EU Commission.[211]

In July 2010 the *Financial Stability Oversight Council* (FSOC) was established in the United States. Its primary objective is to monitor and ensure financial stability. The FSOC is to be consulted on most issues concerning financial supervision and regulation. The Dodd-Frank Act, which is the basis for the FSOC, also established other regulatory authorities and defined the areas of responsibility for existing regulatory bodies. The Act's objective is to create a better system for the liquidation of large financial institutions, protect consumers and investors, increase transparency, prevent excessive

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[210] Sibert (2010) proposes five members for a macrofinancial committee, all of whom should come from outside the public sector and international organisations, in order to get an independent opinion. Sibert explicitly excludes people from supervisory authorities. The committee is to gather information in order to warn of financial imbalances.

[211] Sibert (2010) is of the view that the ESRB has been designed to achieve 'maximum inefficiency'. The Board is too large, its composition is too homogeneous, it has no independence and its members already have more than enough to do elsewhere. See also Andersson (2010) for an overview of EU supervision of the European financial system.

risk taking and generally strengthen the powers of supervisory authorities.

The United Kingdom has recently made two changes to its framework for macroprudential supervision. In 2009 the Bank of England, the Treasury and the Financial Services Authority (FSA) were given joint responsibility for financial supervision by way of the *Financial Stability Committee* (FSC). Shortly thereafter, this arrangement was criticised. It was viewed as weak and ineffective. In 2010, the law was amended. The Bank of England received full responsibility for financial stability when the FSC was associated with the Bank of England. Like the ESRB and the FSOC, the task of the FSC is to identify developments that may threaten financial stability.

Macroprudential regulation

There are a large number of proposals for macroprudential instruments.[212] A common characteristic of these proposals is their link to the stage of the business cycle or the credit cycle. The aim in constructing them in this way is to make regulation more 'dynamic' to counteract procyclical behaviour in the financial system.

Banks and other financial institutions could be required to take the cyclical situation into better account in their risk assessments. Supervisory and regulatory authorities could calibrate their assessments in a similar way. Dividend policies could be made more long term, so that profits in an upturn could be set aside for reserves, to be used in a downturn.

Countercyclical capital requirements for banks have been recommended as a macroprudential instrument. The idea is that the capital requirement, i.e. the ratio between a bank's capital and its assets (lending), should be raised in times of strong credit growth. In a downturn, the requirement would instead be lowered. This would moderate the procyclical pattern in the growth of credit. Counter-cyclical capital requirements may be justified by the theory of externalities: each lender that changes its lending underestimates the impact of its behaviour on other lenders.[213]

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[212] See for example Davis and Karim (2010) and Galati and Moessner (2010).

[213] This argument is taken from traditional welfare theory, where taxes and subsidies are used to equalise the private cost to the individual decision-maker with the social cost. (Jeanne and Korinek 2010). Externalities (network effects, etc.) in the financial system, which drive a wedge between the social and the private costs and benefits, are surveyed by Wagner (2010).

Several proposals concerning household demand for credit have been presented aimed at reducing the risk of imbalances, primarily in the housing sector. They include rules for amortisations, self-financing in home purchases, deductibility of interest on mortgage loans, etc. Such rules may in principle be made dependent on the stage of the business cycle. But in many countries, there is a strong political will to make it possible for households to buy and own their homes. If so, it would be desirable for household expenditure on home ownership to be easy to predict. That would not the case if expenditure changes with the cyclical situation – except for variations caused by interest rate changes.

Other proposals also aim at reducing the procyclicality in the supply of credit. They include the financial sector's remuneration systems. Bonuses, for example, can be based on long-term profits. The bonus payments can be made contingent on long-term owner-ship of shares. The idea is to extend the planning horizon of decision-makers in financial institutions. Another option is to require owners of bank shares to shoulder a heavier responsibility in a banking crisis.

Challenges to macroprudential regulation

There is currently widespread optimism about macroprudential regulation.[214] But there are also objections.

There is a risk that macroprudential regulation would be based on more or less arbitrary case by case judgements as there is no solid theory about when the threats to financial stability have become too great. There are no obvious threshold values indicating when a credit expansion, a mortgage leverage ratio or indebtedness has reached dangerous levels. The same applies to asset prices. We do not know at what point they have deviated too much from values that should be considered fundamental. Assets prices tend to change rapidly, which could be interpreted as a sign of an unsustainable development – without necessarily being that. These difficulties explain to some extent why central banks so far have been disinclined to take asset prices into account in framing monetary policy.

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[214] Representatives of the BIS, for example, argued strongly for macroprudential regulation. See BIS (2010) as well as Borio (2008) and White (2009).

Countercyclical regulation is based on the view that it is possible to acquire good knowledge about the cyclical situation and that the responsible decision-makers use this knowledge with precision, i.e. that they are able to take the right measures at the right time and with the right dosage.[215] This argument takes us back to the long-standing discussion about discretionary fiscal and monetary policy, which so far has led to a rather sceptical view of discretionary policies.

Some proposals on macroprudential regulation might lead to direct controls on the composition of balance sheets in the financial sector, both on the asset and the liability side.[216] In that case, there is a risk that we would end up with a regulatory system similar to what Sweden experienced from the early 1950s to the mid-1980s, i.e. before the financial deregulation. The regulations of that time, which included liquidity ratios, interest rate controls and foreign exchange controls, did result in a high level of financial stability, but it was also associated with arbitrary implementation and efficiency losses. The financial regulations of that time severely curbed financial innovations. [217]

The main argument for expanded macroprudential regulation is that the costs of new financial crises are so great that risks must be taken to avoid such crises. The alternative of not reinforcing macroprudential supervision and regulation is too risky. Also, new macroprudential regulations can be evaluated only after they have been tried in practice. It is hard to predict how effective they will be.

5.5.2 Monetary policy and financial stability

Why would a separate authority be needed for monitoring macro-financial stability when central banks usually see themselves as its guardians and often have been required to fulfil that function? In addition to ensuring monetary stability, many central banks, including the Riksbank, have a mandate regarding financial stability. Central banks also have the option of raising short interest rates enough to stop a rapid growth in credit. Is there not a risk that a macrofinancial stability council would be a second-best solution, which would try to

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[215] See Chapter 3, where we discuss the difficulties in dating business cycles.

[216] The same could be said about some proposals for new microprudential regulations.

[217] Jonung (1993) describes the rise and fall of financial market controls in Sweden in the period 1950-1990.

correct an inadequate central bank policy? Could we not get two central banks – one independent, the other one controlled by the government? In principle, there are two answers to these questions.

The first answer is that monetary policy should focus on only one objective: to keep inflation low. This should be the primary objective. It must not be diluted by financial stability considerations, such as asset price developments. A prominent advocate of this view is Alan Greenspan, the former chairman of the Federal Reserve Board. In his view, financial bubbles cannot be predicted. He therefore argues that a financial crisis should be handled only after it has erupted. In this view, the responsibility for financial stability should not rest with the central bank.

The second answer is that central banks should and can take asset prices and financial threats into account without compromising their fundamental task of keeping inflation low. Economists holding this view use the financial crisis in the United States as an argument that the Greenspan strategy is mistaken. The crisis demonstrates the danger of a policy that takes only consumer prices into account and neglects asset prices. It resulted in an overly expansionary monetary policy in the United States based on low interest rates. According to this view, the Federal Reserve under Greenspan's chairmanship contributed to pushing U.S. housing prices upwards, thus creating large financial imbalances. Had monetary policy paid attention to housing prices, it could have mitigated the forces which eventually lead to the crisis.

Economists have argued that there could be a conflict between monetary stability and financial stability objectives.[218] It becomes obvious when overall inflation is low while at the same time there is a rapid increase in asset prices. Financial market developments during the last decade are used as evidence of this conflict. This interpretation has been advocated by economists at the Bank for International Settlements in particular.[219]

The view that those responsible for monetary policy should take the impact of their actions on credit volumes and on asset prices into better account has gained stronger support after the crisis. However, there is no agreement on how this insight should be transformed into

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[218] See, for example, Bordo and Jeanne (2010).
[219] See, for example, Borio (2008).

practical policy.[220] One way would be to include asset prices among the targets of central banks. Another approach is to view financial stability as a constraint on monetary policy. A third alternative is to give an authority other than the central bank a mandate to safeguard macrofinancial stability.

5.5.3 Fiscal policy and financial stability

As was pointed out in Section 5.1, there are strong links between fiscal policy and financial stability. In upturns, tax revenue grows strongly, potentially hiding underlying weaknesses in government finances. It is therefore important to base fiscal policy on relevant estimates of structural net lending which take into account temporary tax revenue generated by unsustainable financial market developments.[221] This problem is currently illustrated by developments in countries such as Spain and Ireland.

The crisis has also strengthened the arguments for a tight fiscal policy in upturns, which would build room for manoeuvre which can be used to mitigate extreme downturns due to financial crises as well as other types of economic crisis.

Fiscal policy has an impact on financial stability via the design of the tax system. Rules for the taxation of capital income, including deductions for interest costs, for the taxation of property and wealth and for the taxation of income from renting dwellings have direct effects on the demand for credit. These rules may be designed to take account of the situation in the financial sector, i.e. they can be given a macroprudential component.

5.6 Possible systemic changes in Sweden

5.6.1 Experience from the financial crisis

Sweden's financial system coped relatively well with the global crisis, even though the Riksbank and the Government via the National Debt Office had to take a number of measures to improve liquidity in the banking system. Extensive government loan guarantees were issued for parts of the commercial banks' borrowing. A systemic

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[220] See Ingves (2010 and 2011) and Svensson (2010).
[221] This is discussed in more detail in Section 1.2. See also Jaeger and Schuknecht (2004).

crisis like the one in the 1990s did not develop.[222] The threat against Swedish commercial banks from a collapse in the Baltic States was averted by financial support to Latvia and other measures.

In the years before the eruption of the last crisis, the Ministry of Finance did not show much concern for financial stability. This is evident from the low frequency of various terms associated with instability and risk taking linked to the financial system in the Budget Statements for the years 2003-2007 compared with the years 2008-2011 (see Table 5.3). After the crisis, issues of financial imbalances have received much more attention. It is worth noting that bank lending and credit, key propellants of the boom-bust process, are just mentioned a few times in the years 2003-2011.

The most recent Budget Statements reflect hardly any concern about the rapid increase in housing prices or excessive household indebtedness in Sweden. The Spring Fiscal Policy Bill 2011 analyses risks associated with the international expansion of Swedish banks and with the increase in the indebtedness of households and real estate prices.[223] Against this background, the Government is considering increasing capital requirements for banks as a way of safeguarding financial stability. But there is no discussion of strengthening macroprudential supervision in the Spring Fiscal Policy Bill.

Table 5.3 Frequency of words associated with financial markets, financial imbalances and financial crises in the Budget Statements 2003-2011

	2003	2004	2005	2006	2007	2008	2009	2010	2011
Financial markets	3	2	1	4	5	29	54	63	32
Bank lending	0	0	0	0	0	0	5	8	6
The supply of credit	0	0	0	0	0	0	0	1	1
Financial stability	1	0	0	0	3	2	9	27	24
Financial instability	0	0	0	0	0	0	0	0	7
Risk taking	0	0	0	0	0	0	4	2	3
Financial regulation	0	0	0	0	0	0	1	13	1
Total	**4**	**2**	**1**	**4**	**8**	**31**	**73**	**114**	**74**

Sources: The Budget Statements in the Budget and Spring Fiscal Policy Bills.

There are indications of an increased interest in financial stability recently in other official analyses in addition to the 2011 Spring Fiscal Policy Bill. In a report on the reactions of the Riksbank and the Financial Supervisory Authority to Swedish banks' involvement in the Baltic States, the National Audit Office writes:

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[222] See, for example, Chapter 2 in SNS (2011) for an overview.
[223] The 2011 Spring Fiscal Policy Bill, Section 2.5.

> The Government should review and clarify the Riksbank and the Financial Supervisory Authority's mandates and instruments for ensuring financial stability in a broad sense. They should examine whether a framework for macroprudential supervision should be developed and if so, who should be responsible for it.[224]

In February 2011, the Government appointed the Financial Crisis Committee, whose task is to:

> Review the Swedish framework for managing financial crises against the background of the lessons to be learned from the development and management of the financial crisis which hit the world with full force in autumn 2008. ... The Committee is to propose measures aimed at improving the current regulatory framework. ... The primary purpose of the review is to ensure that the regulatory framework is designed in a way to make it possible first to mitigate various kinds of financial crises via preventive measures and secondarily resolve them effectively.

Macrofinancial or macroprudential issues are not mentioned explicitly as an area for the Committee's work. But it would be reasonable to expect the Committee to pay attention to the international debate and the proposals for macroprudential regulation presented there.

Even though Sweden has avoided a domestic banking crisis in recent years, there are strong reasons for discussing macroprudential regulation in Sweden based on the experience provided by the international crisis.[225]

5.6.2 Methods for macroprudential supervision

This section discusses recommendations concerning the Swedish institutional framework as a result of a stronger emphasis on financial stability as a policy objective. We focus on two options for strengthening macroprudential supervision. The first is based on increased responsibility for the Riksbank, the second on a new public authority.

The current framework for financial supervision and regulation

Three public bodies are currently responsible for financial stability in Sweden: the Riksbank, the Swedish Financial Supervisory Authority and the Ministry of Finance. The Riksbank includes financial stability

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[224] Riksrevisionen (2011b), p. 55.
[225] The Norwegian Government appointed the Crisis Commission (*Krisutvalget*) in 2009, which published its final report in 2011 (NOU 2011). The purpose of the Commission was to examine measures that should be taken to strengthen financial stability in Norway.

among its objectives – but this objective has never been made operational. The Riksbank publishes a report on financial stability twice a year. There are few indications that the report has exercised any direct influence on monetary policy.[226] This is also the international experience. Various reports on financial stability have warned about imbalances for several years without central banks reacting.[227] There is a gap between word and deed – and such a gap is likely to exist in Sweden too.

The Financial Supervisory Authority is responsible for traditional microprudential supervision and regulation of Sweden's financial system. Once a year, the authority publishes its report "Risks in the financial system". It surveys the 'overall risk picture' in a review of the situation in various parts of the financial market. The Financial Supervisory Authority has an international panel of experts who report their views on the international financial situation. The report gives a summary of their views.

The Riksbank's resources are by far the largest. Its analytical capacity consists of some 45 economists, several of whom have a doctorate, working on various aspects of financial stability. The Financial Supervisory Authority has less than ten economists working on similar issues.[228]

The Ministry of Finance, via its Financial Markets and Institutions Department and the Minister for Financial Markets, has an extensive responsibility for financial issues, and thus for financial stability. The Ministry of Finance develops proposals for laws covering the financial markets.

The National Debt Office should also be mentioned in this context. The Debt Office is closely linked to the financial markets by its management of the central government debt. The Debt Office is also the Government's crisis management authority.[229]

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[226] This conclusion is based on interviews with current and former Riksbank officials. The National Audit Office comes to the same conclusion (Riksrevisionen 2011b).

[227] It could be mentioned, for example, that the BIS warned about rising imbalances in the world economy for a long time before the global financial crisis. The BIS is also a driving force behind the demands for macroprudential supervision and regulation. See Maes (2009) for a historical exposé of its doctrines.

[228] According to Jackson (2010a) the resources of the Financial Supervisory Authority are small by international standards.

[229] The Debt Office has played an important role in several financial crises by being responsible for the Government's foreign currency borrowing.

Two ways of strengthening macroprudential supervision

There is one major weakness in the existing financial stability framework: there is no public authority with main responsibility for monitoring and assessing the risks of financial imbalances and proposing measures when systemic risks approach a critical level. The division of responsibilities is currently unclear and divided among several authorities. As macroprudential oversight is not a main task for any of them, there is a risk that none of them will sound the alarm in time. This has proved to be a problem in many countries during the global financial crisis.

For this reason, we would like to see a strengthening of the current framework. We see two options.

The first is to give the *Riksbank,* which is already involved in analysing financial imbalances, more responsibility for macrofinancial stability. The second is to establish a new authority, *a financial stability council*, or a council for systemic risks.

There are several arguments in support of the first option. The Riksbank already has a responsibility for financial stability. It currently has the best capacity for surveying and monitoring systemic risks.[230] The Riksbank has close links with the financial markets in its daily work. It has instruments at its disposal for controlling the short-term rate of interest and thus the total volume of credit, which is the key variable in maintaining financial sector balance. In the event of major financial shocks and disturbances, the Riksbank always gets involved. The fact that it must be an actor when problems arise is an argument for making the Riksbank responsible for macroprudential supervision. This responsibility could be clarified by amending the Riksbank Act.

But there are also arguments against an expanded role for the Riksbank. One is that the Riksbank currently has just one instrument, the repo rate, for keeping inflation low. Were the total responsibility for financial stability to be given to the Riksbank, it would need to have a number of macroprudential instruments at its disposal (see Section 5.5.1).

Even if the Riksbank were to be given new regulatory instruments, a conflict could arise between the Riksbank's goal of

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[230] See for example Bodea and Huemer (2010) for arguments for investing the central bank with responsibility for macroprudential supervision and regulation.

maintaining a low and stable level of inflation and the goal of ensuring financial stability. If this were to happen, the Riksbank would be likely to give priority to monetary stability since it is easier to measure and evaluate – it is summarised by the rate of inflation – rather than to financial stability, for which there is no single measure.

The Riksbank's independence is to a large extent based on having one single goal, which is relatively clearly and unambiguously defined, namely low inflation. If it were to be given the additional responsibility of maintaining macrofinancial stability, i.e. two explicit goals, the task of evaluating how well the Riksbank meets its objectives would become more complicated.

Like other central banks, the Riksbank has close relationships with the commercial banks and other financial institutions, which could lead to a shared view on financial developments. This phenomenon, which is reinforced by central bank recruitment of staff from the financial sector, is a factor making it doubtful as to whether central banks are the most appropriate supervisors of the financial sector. Developments in the United States during Alan Greenspan's tenure may be cited as an example. Another objection to giving the Riksbank additional powers is that it is already a powerful institution.

The second alternative to foster macrofinancial stability is a financial stability council. Its task would be to analyse the risks of financial instability, develop techniques for assessing financial imbalances, propose measures and stay in touch with similar institutions internationally. The council should probably not have any mandate other than publishing its analysis and recommendations. The analysis should be published regularly, say twice a year.

One challenge for macrofinancial policy – in addition to early identification of macro risks – is to choose the proper combination of monetary policy, financial regulation and fiscal policy interventions. This argues for a financial stability council with powers to propose measures in several areas. The council should be able to address its recommendations to the Riksbank, the Financial Supervisory Authority, the National Debt Office and other institutions and firms and thus function as an independent financial watchdog. But other institutions should not be required to answer or otherwise react to the council's views. The new authority would thus not threaten the independence of the Riksbank or other authorities.

A financial stability council should only be responsible for identifying threats to financial stability at the macro level, i.e. systemic risks, and for publishing its opinions. The council should have no instruments for managing the financial system directly. But it could recommend new instruments for other authorities.

The stability council should to some extent be able to use the analytical capacity of existing authorities with responsibility for financial stability. Some of this capacity could possibly be transferred to the new authority in order to give it sufficient resources. Academic researchers should be well represented on the council in order to strengthen its independence in relation to existing authorities and contribute to the development of theory and practice. The management of the council should be entirely separate from other authorities in order to ensure the council's independence as supervisor of the entire financial system, including the public bodies currently active there.

There are a number of advantages to this solution. There would be an authority focusing only on systemic risks in the financial sector. It would be able to warn of financial risks more actively than the Riksbank and other authorities involved in the financial sector. Thus, the authority could be more 'alarmist'. A weakness of the current financial policy framework is the tendency to react too late and too little to potential threats. A new authority with the remit to sound the alarm early about imbalances could play a role in this regard. Another advantage would be that such a council would provide one more voice in the economic policy debate.

One objection to a new authority for macroprudential supervision is that there would be a duplication of analytical capacity, particularly in relation to the Riksbank, which has a large department for financial stability. There are already two authorities supervising financial stability, the Riksbank and the Financial Supervisory Authority. One more authority could be excessive. Another disadvantage could be that the Riksbank might not feel the same degree of responsibility for macroprudential issues if a financial stability council were to be established. Also, the recommendations of a stability council could easily be ignored, as it has no powers to back its proposals. The council would then simply be an ineffective addition to existing authorities.

5.7 Conclusions

The global financial crisis has taught us a new lesson: financial stability should be a more prominent economic policy objective. Many countries have now strengthened, or are in the process of strengthening, their macroprudential frameworks. Even though the financial system in Sweden was hardly affected by the crisis, there are strong arguments for paying attention to the international lessons about macroprudential supervision.

Financial stability is not a new policy goal in Sweden. Still, we see a weakness in the existing arrangement: there is no public authority with primary responsibility for supervising the systemic risks in the financial sector and with the remit to propose measures when such risk approaches a critical level.

It is our opinion that the current framework for financial stability should be strengthened. We see two options.

The first is for the *Riksbank* to be given greater responsibility for macrofinancial stability, possibly with an expanded arsenal of instruments to safeguard this objective. The second is to establish a new authority, a financial stability council, with the remit to identify risks to the financial system and propose measures.

We see arguments for both these solutions. The following arguments support giving the Riksbank more authority. With its traditional monetary policy instruments, it has effective tools for managing developments in the financial markets. It is in direct contact with banks and financial institutions. It already has a responsibility for financial stability. It has the best analytical capacity. It publishes a report on financial stability twice a year, being a pioneer in this field among central banks.

There are also objections to giving the Riksbank more powers. A conflict could arise between the Riksbank's objective of maintaining a low and stable level of inflation and the objective of ensuring financial stability. The Riksbank's independence is to a large extent based on it having one single clear and unambiguously defined objective, namely monetary stability as measured by a low rate of inflation. Should the Riksbank be given increased responsibility for macrofinancial stability, it will be more difficult to evaluate whether it meets this goal.

The other option is to establish a financial stability council, i.e. a new public authority with responsibility for macroprudential supervision. In that case, such a council should have the remit to analyse the process and changes in the domestic and international financial system that might threaten financial stability. The authority should be required to publish its analysis on a regular basis. It should have the right to address its recommendations to the Riksbank, the Financial Supervisory Authority and the Ministry of Finance as well as to other public authorities and to financial institutions and financial companies. The recommendations would not be binding. In our opinion, a stability council should not have any policy tools of its own. A financial stability council should be independent of other authorities working on financial stability.

There are a number of advantages to this solution. There would be an authority focusing only on systemic risks in the financial sector. It could actively warn of financial dangers and publicly take the initiative in proposing measures. It would provide one more voice in the economic policy debate.

One objection to a new authority is that there would be a duplication of analytical capacity. The Riksbank and the Financial Supervisory Authority already work on financial stability issues. Another disadvantage could be that the Riksbank might not feel the same degree of responsibility for macroprudential issues if a financial stability council was established.

We thus see two possible options for strengthening macroprudential supervision. The problem is hardly a lack of instruments – even though new instruments should be considered. The problem is to identify the growing risk of financial imbalances in good times. Here current international experience, as well as our own history, proves that existing institutions have lacked the capacity to react in time.

The financial stability objective is a new challenge for economic policy after the global crisis. Financial stability is not as easy to operationalise as monetary stability and fiscal stability. But experience indicates that financial stability should be given higher priority. The largest deficits and the deepest depressions in Sweden have been created by financial imbalances. If the risk of a financial crisis can be reduced, the risk of future budget and government debt crises will also decline.

6 The labour market

Employment in the Swedish economy is now increasing and unemployment is declining. This chapter is an in-depth analysis of labour market developments during the crisis and the outlook for a continued recovery. Comparisons are made with the crisis in the early 1990s and the IT crisis. The aim is to better understand what is driving developments now and why it differs from earlier crises and to estimate the risks of persistent unemployment.

The chapter first describes labour market developments in the period 1987-2011. Next, developments for different groups are analysed. The focus is on long-term unemployment in particular. The following section analyses the flows from one labour market status to another. Finally, matching in the labour market and the risk that the crisis will have persistent adverse employment effects are considered.

6.1 Unemployment, employment and labour force participation

This section analyses how unemployment, employment and labour force participation have developed in different cyclical situations in the period 1987-2011. Box 6.1 shows how different key variables are defined in the Labour Force Surveys (LFS), which are our main sources.

Different variables show somewhat different cyclical patterns. In this section the definition of the business cycle is based on the turning points in the employment rate, i.e. the percentage of the population employed. In the 1990s crisis, the employment rate fell on two occasions: from the first quarter of 1990 to the first quarter of 1994 and then again from the second quarter of 1995 to the second quarter of 1997. We have chosen to focus primarily on the first part of the downturn. The three downturns studied are thus:

- the first quarter of 1990 through the first quarter of 1994

- the first quarter of 2001 through the first quarter of 2005

- the first quarter of 2008 through the fourth quarter of 2009

Box 6.1 The Labour Force Surveys (LFS)

In the Labour Force Surveys, the population distribution over different labour market statuses is estimated as in the following tree structure:

**Figure 6.1 Different labour market statuses**
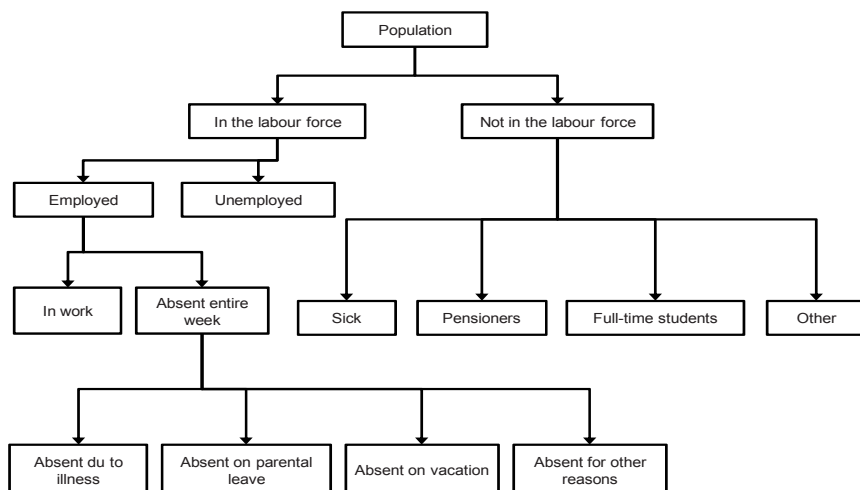
Note: Early retirees for health reasons are included in the group 'Sick'.
Sources: Statistics Sweden, the Labour Force Surveys, Description of the Statistics, AM0401.

We primarily use chained monthly data published by Statistics Sweden for the period 1987-2011 for the 16-64 age group. Monthly data have been converted to quarterly and seasonally adjusted data. The ILO definition of unemployment, under which full-time students looking for work are counted as unemployed, is used throughout. Under the earlier Swedish definition, they were not included in the labour force.

At the beginning of the 1990s crisis, unemployment rose rapidly from about two to over eleven per cent of the labour force (see Figure 6.2). Unemployment subsequently fell slightly but then rose again until the middle of 1997. During the 2008-2009 crisis, unemployment was considerably higher to start with but did not increase as much. Unemployment was 5.9 per cent (seasonally adjusted) in the first quarter of 2008 and peaked at 9.0 per cent in the fourth quarter of 2009. Unemployment declined in 2010 and was 7.8 per cent during the first quarter of 2011.
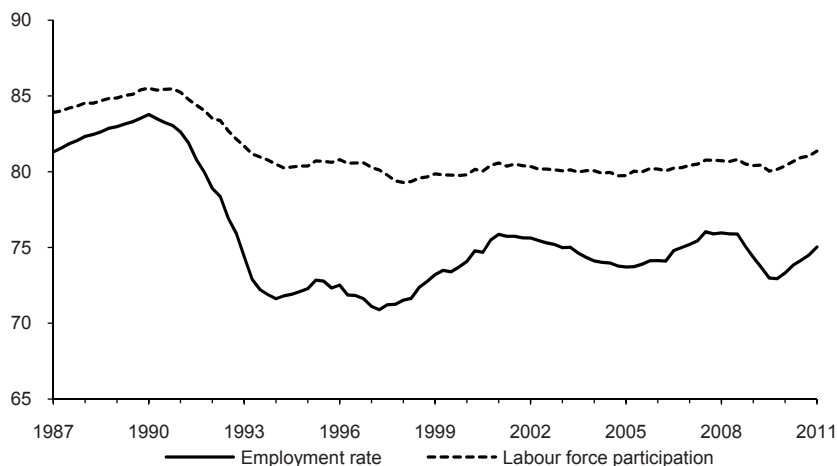
Figure 6.2 Unemployment, per cent of the labour force
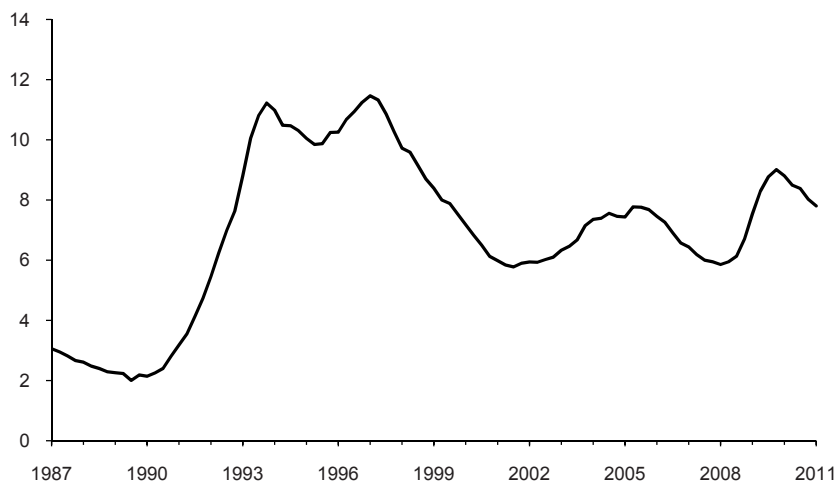
Note: Chained, seasonally adjusted data, ages 16-64, the first quarter of 1987 - the first quarter of 2011, unemployment according to the ILO definition.
Source: Statistics Sweden, LFS.

Furthermore employment deteriorated rapidly during the recent crisis (see Figure 6.3). The employment rate, i.e. the percentage of the population aged 16-64 that is employed, declined from about 76 per cent in the first quarter of 2008 to 73 per cent in the fourth quarter of 2009. The decrease in employment was limited compared with the 1990s crisis. At that time, the employment rate fell from almost 84 per cent in the first quarter of 1990 to a low of just under 71 per cent in the middle of 1997, i.e. by an entire 13 percentage points. By way of comparison, there was only a three percentage point decrease between 2008 and 2009. Since the end of 2009, employment has been increasing at a rapid pace. By March 2011, the entire decline in the number of people employed since autumn 2008 had been recouped. But the employment rate is still lower than before the crisis erupted. It was about 75 per cent in the first quarter of 2011.

Figure 6.3 Labour force participation and employment, per cent of the population

Note: Chained, seasonally adjusted data, ages 16-64, the first quarter of 1987 - the first quarter of 2011, unemployment according to the ILO definition.
Source: Statistics Sweden, LFS.

Labour force participation, i.e. the percentage of the population participating in the labour force, declined sharply in the crisis of the 1990s, when it fell from over 85 to about 79 per cent.[231] During the recent crisis, labour force participation held up better and already in the third quarter of 2010 was at the same level as before the crisis.

6.1.1 Decomposition of the change in unemployment

The labour force is composed of people who are employed and people who are unemployed (see Figure 6.1). Unemployment increases either because more people enter the labour force or because employed people become unemployed. Similarly, un-employment declines when the unemployed leave the labour force or find employment. To better illustrate labour market developments, Table 6.1 decomposes the change in unemployment into the contribution from the change in labour force participation and the contribution from the change in the employment rate.[232]

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[231] The decrease in labour force participation in the 1990s crisis is partly explained by the sharp increase in the number of students.

[232] The change in unemployment in percentage points ≈ (1-Unemployment) × (Percentage change in labour force participation – Percentage change in the employment rate). This relationship is derived in Appendix 4.

Table 6.1 Decomposition of unemployment developments in downturns

Period	Change in unemployment (percentage points)	Percentage change in labour force participation	Contribution from labour force participation (percentage points)	Percentage change in the employment rate	Contribution from the employment rate (percentage points)
Jan 1990-Mar 1994	8.6	-5.5	-5.4	-14.7	14.4
Jan 2001-Mar 2005	1.4	-1.6	-1.5	-3.0	2.8
Jan 2008-Dec 2009	2.9	-0.1	-0.1	-3.3	3.1

Note: Chained, seasonally adjusted monthly data, ages 16-64, January 1987-March 2011. Unemployment according to the ILO definition. Statistics Sweden's seasonally adjusted monthly data are used to obtain consistent series for the decomposition. The changes are cumulative log differences, which approximately correspond to the percentage change in each variable. The contribution therefore does not sum exactly to the change in unemployment.
Sources: Statistics Sweden, LFS and own calculations.

In the 1990s crisis, the employment rate fell by 14.7 per cent. But unemployment rose by only 8.6 percentage points. This was because labour force participation simultaneously declined by 5.5 per cent. The downturn in the early 2000s was considerably shallower. At that time, labour force participation also fell even more in relation to the decrease in the employment rate than in the crisis in the early 1990s.

The recent downturn differs radically from the previous ones. Labour force participation was largely unchanged and the decrease in the employment rate fed almost entirely through in increased unemployment. The contribution from the employment rate was 3.1 percentage points and the contribution from labour force participation was -0.1 percentage points.

Table 6.2 shows the corresponding decomposition for the three most recent upturns. As seen in Figure 6.3, the labour supply did not rebound to its earlier level after the 1990s crisis. The employment growth that occurred late in the 1990s therefore had a major impact on unemployment.

Table 6.2 Decomposition of unemployment developments in upturns

Period	Change in unemployment (percentage points)	Percentage change in labour force participation	Contribution from labour force participation (percentage points)	Percentage change in the employment rate	Contribution from the employment rate (percentage points)
Jan 1994-Mar 2001	-5.2	0.1	0.1	5.8	-5.1
Jan 2005-Mar 2008	-1.4	1.1	1.0	2.6	-2.4
Oct 2009-Mar 2011	-1.0	2.2	2.0	3.4	-3.1

Note: See Table 6.1.
Sources: Statistics Sweden, LFS and own calculations.

The upturn now under way shows quite a different pattern. Since October 2009 labour force participation has increased by 2.2 per cent while the employment rate has increased by 3.4 per cent. As a result, unemployment has not decreased as much as it otherwise would have. This is not intrinsically negative. On the contrary, it indicates that there is considerable potential for employment growth in the coming period.

6.1.2 Employment and average hours worked

When economic activity changes, labour market adjustment can take place in different ways. A distinction is usually made between the *extensive margin*, i.e. the number of persons employed, and the *intensive margin*, i.e. the number of hours worked per person employed (hours worked).

In many OECD countries, the adjustment during the most recent crisis was to a greater extent than in previous crises made through a reduction in the number of hours worked.[233] The reason could be that companies chose to a greater extent to retain staff to ensure that their core competence was available when the business cycle turned upwards again (*labour hoarding*). Many countries have also used public short-time work schemes. In these schemes the state compensates the employed in whole or in part for any shortfall in wages if companies temporarily shorten working hours.[234] Sweden does not

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[233] OECD (2010a).
[234] See, for example, Carcillo and Cahuc (2011) for an analysis of the employment effects of these programmes.

have such a scheme, but the social partners to some extent entered into agreements on shortening hours worked, particularly in manufacturing.[235]

Figure 6.4 Number of hours worked per person and quarter, ages 16-64
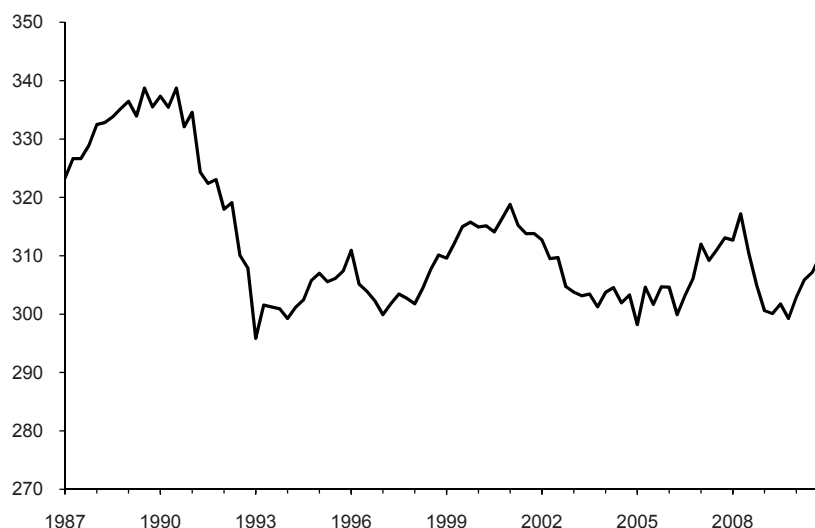
Note: The first quarter of 1987 - the fourth quarter of 2010.
Sources: Total number of hours worked from the national accounts (from the NIER), seasonally adjusted data. The working-age population, aged 16-64, from LFS, chained, seasonally adjusted data.

Figure 6.4 shows the total number of hours worked per person of working age (aged 16-64). In earlier reports, we have argued that it is the most comprehensive measure of the volume of work in the economy.[236] In the 1990s crisis, the number of hours worked per person fell sharply between 1990 and 1993, then recovered slightly and subsequently fell again in 1996. In the IT crisis of 2001-2004, the total number of hours worked per person again declined, but not as much. The downturn in the number of hours worked per person during the most recent crisis took place from the second quarter of 2008 to the fourth quarter of 2009. Thereafter the hours worked turned upwards again and there was a rapid increase in 2010.

To analyse how the adjustment in the total number of hours worked per person was made, we decompose the change into several

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[235] Teknikföretagen (2010).
[236] See Fiscal Policy Council (2009a), Section 2.3.2.

components (see Appendix 5).[237] Table 6.3 does this for the three most recent economic crises. Here the definition of the downturn phases is based on the turning points in the total number of hours worked per person. Several variables, though seasonally adjusted, are unstable, making the results sensitive to the choice of starting and ending quarters, thus complicating the analysis. The result should therefore be interpreted cautiously.

Table 6.3 Decomposition of the change in total number of hours worked per person in downturns

Component	1990 Q3-1993 Q1 Percentage change (Contribution, per cent)	2001 Q1-2005 Q1 Percentage change (Contribution, per cent)	2008 Q2-2009 Q4 Percentage change (Contribution, per cent)
Total number of hours worked per person	**-13.1**	**-6.7**	**-5.8**
Employment rate	-11.9 (91)	-2.9 (43)	-4.0 (69)
of which			
Labour force participation	*-4.6* (35)	*-1.0* (15)	*-0.8* (14)
Percentage of the labour force employed	*-7.3* (56)	*-1.8* (28)	*-3.2* (55)
Hours per person employed	-1.2 (9)	-3.8 (57)	-1.8 (31)
of which			
Percentage of the employed in work	*1.9* (-15)	*-0.2* (3)	*-1.7* (28)
Hours worked per person in work	*-3.2* (24)	*-3.6* (54)	*-0.2* (3)

Note: The changes are cumulated log differences which approximately correspond to the percentage change in each variable. The contribution therefore does not sum exactly to the change in the number of hours worked per person.
Sources: See Figure 6.4.

Between the third quarter of 1990 and the first quarter of 1993, the total number of hours worked per person declined by around 13 per cent. In that crisis, hours worked declined primarily because the *employment rate* fell by nearly 12 per cent. The contribution

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[237] Percentage change in the number of hours worked per person ≈ Percentage change in the employment rate + Percentage change in the number of hours worked per person employed = Percentage change in labour force participation + Percentage change in the proportion of the labour force that is employed + Percentage change in the proportion of the employed who are in work + Percentage change in the number of hours worked per person in work.

corresponds to 91 per cent of the total decline in the number of hours worked per person, while the decline in the number of hours worked per person employed corresponds to 9 per cent. The employment rate decreased both because unemployment increased (the percentage of the labour force employed declined) and because people left the labour force. These contributions correspond to 56 per cent and 35 per cent respectively of the total decrease in the total number of hours worked per person. The adjustment in the two crises in the 2000s, to a greater extent than in the 1990s crisis, was made by a reduction in *average hours worked*, i.e. the number of hours worked per person employed. The contribution was 57 per cent in 2001-2005 and 31 per cent in 2008-2009. In an international context, the contribution from average hours worked during the recent crisis was not particularly large.[238] Rather it was the adjustment in the 1990s crisis that deviated from the normal.[239]

Average hours worked are affected by many factors such as normal working hours for full-time workers, the percentage of part-time workers, sickness absence, other absences (for example, vacation and leave of absence) and overtime work, but the number of hours worked is usually procyclical. When the business cycle deteriorates (improves), firms reduce (increase) the number of hours worked and average hours worked fall (rise). In the 1990s crisis, average hours worked did not follow this pattern. They admittedly declined slightly to begin with, but they then *increased* even though employment had not bottomed out before the middle of 1997.[240] One explanation may be that sickness absence fell from 1994 to 1997 and thus a higher percentage of the employed were in work.[241] Under the most recent crisis, average hours worked displayed a more expected pattern with a larger contribution to the decline in the number of hours worked per person. The adjustment was primarily through a decline in attendance (the percentage of the employed in work) and to a lesser extent by fewer hours worked per person in

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[238] OECD (2010a), p. 39.
[239] See Fiscal Policy Council (2010), Section 1.2.3.
[240] Between the third quarter of 1990 and the first quarter of 1997, average hours worked increased by 4.6 per cent, the percentage in work by 3.8 per cent and the number of hours worked per person in work by 0.8 per cent.
[241] For an analysis of the trends in hours worked in the 1990s, see Konjunkturinstitutet (2004).

work.[242] Since average hours worked are affected by so many factors, it is difficult to draw any definite conclusions about the reasons for this development.

Table 6.3 also shows – like our earlier analysis in Section 6.1.1 – how labour force participation held up better in the most recent crisis than in the crisis in the 1990s. The contribution to the downturn in the total number of hours worked was now 14 per cent compared with 35 per cent in the 1990s crisis.

Table 6.4 Decomposition of the change in total number of hours worked per person in upturns

Component	1993 Q1-2001 Q1 Percentage change (Contribution, per cent)	2005 Q1-2008 Q2 Percentage change (Contribution, per cent)	2009 Q4-2010 Q4 Percentage change (Contribution, per cent)
Total number of hours worked per person	**7.5**	**6.2**	**3.5**
Employment rate	2.0 (26)	2.9 (47)	2.1 (60)
of which			
Labour force participation	*-1.4* *(-18)*	*1.2* *(19)*	*1.1* *(32)*
Percentage of the labour force employed	*3.3* *(44)*	*1.7* *(28)*	*1.0* *(29)*
Hours per person employed	5.5 (74)	3.3 (53)	1.4 (40)
of which			
Percentage of the employed in work	*1.0* *(14)*	*2.0* *(33)*	*1.9* *(53)*
Hours worked per person in work	*4.5* *(60)*	*1.2* *(20)*	*-0.5* *(-13)*

Note: See Table 6.3.
Sources: See Figure 6.4.

Table 6.4 shows the corresponding decomposition for the upturns. Since the fourth quarter of 2009, the total number of hours worked per person has increased by about 3.5 per cent. The increase can primarily be attributed to an increase in employment, which contributed 60 per cent, while the contribution from an increase in

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[242] That the number of hours worked per person in work did not show any significant decline despite the crisis agreements entered into in manufacturing is likely due to the fact that only 80 000 employees were covered (Teknikföretagen 2010).

average hours worked was 40 per cent. The difference compared with the upturn after the 1990s crisis is clear. At that time, the contribution from the increase in the employment rate was only 26 per cent, while the contribution from the increase in average hours worked was 74 per cent. The increasing employment rate in 2010 was due both to lower unemployment and an increase in labour force participation, unlike in the period after the 1990s crisis when labour force participation did not recover.

6.1.3 Conclusions

The labour market is recovering rapidly after the economic crisis. The entire downturn in employment was recouped by March 2011 but the employment rate is still lower than before the crisis. The labour supply has held up much better than in earlier downturns and is now increasing. This causes unemployment to decline more slowly than it would have otherwise.

The cyclical adjustment in the recent crisis to a larger extent than in the 1990s crisis was made by a reduction in average hours worked. One hypothesis is that firms this time, unlike in the 1990s crisis, regarded the downturn as temporary and not caused by structural problems. They may therefore to a larger extent have chosen to retain their labour force in the expectation that the business cycle would turn upwards again. This intention was also evident in the crisis agreements concluded in manufacturing.

6.2 Developments for different sectors and groups

The manufacturing sector was particularly hard hit by the crisis. A sector-specific shock like this may impair the matching between the supply and demand for labour both by occupation and by region. Unemployment that originally was short term may become structural long-term unemployment for several reasons. The unemployeds' human capital may become obsolete. The unemployed may lose contact with the labour market. Their job searching may deteriorate. There is also a risk that in wage formation, insufficient consideration will be given to the unemployed (*outsiders*). Instead, the unions will first take the employed members' (*insiders*) interests into account. If

so, wage increases in economic upturns may be so high that firms' new hiring is limited.[243]

To estimate the risk of persistent adverse effects of the crisis, this section analyses how different sectors and groups in the labour market were affected by recent years' cyclical developments and how long-term unemployment has developed.

6.2.1 Employment and unemployment

According to the national accounts, employment declined during the crisis by 129 000 people between the second quarter of 2008 and the fourth quarter of 2009 (see Table 6.5).[244] The largest decrease was in manufacturing where employment declined by 112 000 (about 15 per cent).[245] Up until the fourth quarter of 2010, the recovery was limited, with an upturn in employment of only 12 000.

The largest increase in the number employed has taken place in the private service sector, where several subsectors grew even during the crisis, and in the construction sector. The upturn in the service sector may also include some industrial employment via temporary staffing agencies. The number of agency workers has increased by over 50 per cent in a year in industry compared with 11 per cent in the rest of the business sector.[246]

Employment in local governments, which has declined since 2007, continued to fall during the crisis. Employment in the upturn is unchanged. One explanation is that local government procurement of services from private-sector providers has increased substantially in recent years.[247] As a result, local government employment is declining while local-government *financed* employment in the private sector is increasing. The number of people employed in the private sector but financed by the local government sector increased by about 27 000 people from 2007-2010. Local-government financed employment in 2010 totalled 1 181 000 people, 133 000 of whom were in the private sector.[248]

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[243] See also Hartman and Svaleryd (2010).
[244] According to the National Accounts, employment was highest in the second quarter of 2008 and lowest in the fourth quarter of 2009.
[245] Industry includes the mining, quarrying and manufacturing industries.
[246] Arbetsförmedlingen (2010b).
[247] See Konjunkturinstitutet (2010b and 2011b).
[248] The 2011 Spring Fiscal Policy Bill, pp. 123 and 173.

Table 6.5 Employment developments by industry, thousands of persons

	2008 Q2-2009 Q4	Percentage change	2009 Q4-2010 Q4	Percentage change
Total	**-129**	**-2.8**	**101**	**2.3**
Business	**-90**	**-2.9**	**103**	**3.4**
Manufacturing	-112	-15.1	12	1.9
Construction	4	1.2	18	6.2
Other goods production	-2	-1.9	5	4.1
Private service industries	22	1.1	67	3.3
of which				
Corporate services	*15*	*2.8*	*24*	*4.4*
Wholesale and retail trade	*-14*	*-2.5*	*14*	*2.6*
Household-related services	*24*	*7.7*	*19*	*5.6*
General government sector	**-43**	**-3.3**	**-1**	**-0.1**
Central government	-2	-0.9	2	1.0
County councils	-7	-2.5	-4	-1.4
Municipalities	-34	-4.1	0	0

Note: Seasonally adjusted data.
Sources: Statistics Sweden, the national accounts (from NIER).

Table 6.6 shows how employment and unemployment have developed for different demographic groups. The employment rate declined more for men than for women between the first quarter of 2008 and the first quarter of 2010 (3.0 compared with 2.3 percentage points). This is because a large part of this decline took place in manufacturing. Many manufacturing jobs require only an upper secondary education and it is in fact in this education group that the employment rate declined the most. Unemployment also rose more among men than among women.

In the upturn, employment has increased at about the same rate among women and men, but unemployment among women has fallen more slowly. People with only a pre-upper secondary education continue to experience high unemployment at 18 per cent, but the employment rate has increased more among them (in percentage points) than among people with more education.

Employment among older workers continued its positive trend even during the crisis, with the employment rate increasing slightly. Unemployment also increased less (in percentage points) in this age group than in other age groups. In 2010 the employment rate for older workers continued to rise. Unemployment has declined slightly, but not as much as in other age groups.

Table 6.6 Employment and unemployment for different groups, per cent of the population and the labour force respectively

	Employment			Unemployment		
	2008 Q1	2010 Q1	2011 Q1	2008 Q1	2010 Q1	2011 Q1
Total	**74.8**	**72.2**	**73.9**	**6.2**	**9.2**	**8.2**
Women	72.3	70.0	71.7	6.4	8.8	8.2
Men	77.3	74.3	76.1	6.0	9.6	8.1
Ages 16-24	42.8	36.3	39.9	19.5	28.6	25.2
Ages 25-54	86.0	84.0	85.3	4.5	6.8	5.8
Ages 55-64	69.8	70.1	71.5	3.8	5.7	5.4
Born in Sweden	77.0	74.5	76.6	5.2	7.9	6.5
Foreign born	63.3	61.0	61.8	12.1	16.2	16.7
Compulsory school education	40.0	36.0	40.5	13.0	18.6	18.0
Upper secondary education	73.2	68.6	70.4	5.5	9.4	7.4
Post-secondary education	79.3	77.3	78.8	4.2	5.4	4.3

Note: So that seasonal variations do not affect the results, the first quarter of 2008 (top) is compared with the same quarter in 2010 (bottom, instead of the fourth quarter of 2009) and 2011 (latest available quarter). Employment and unemployment refer to those aged 16-64 except for the different education levels, which refer to ages 15-74. The availability of data on www.scb.se explains the differences in the age groups chosen.
Source: Statistics Sweden, LFS.

Employment held up slightly better in the downturn for the foreign born than for those born in Sweden, in contrast to previous crises.[249] Unemployment still increased more among the foreign born and kept on increasing in 2010. Employment developments in 2010 were also weaker for the foreign born than for those born in Sweden.

During the crisis, employment declined most in percentage terms among those with temporary employment (see Table 6.7).[250] Employment in this group declined by almost 10 per cent, while the decline among the permanently employed was just over 2 per cent. But numerically, employment declined most for the permanently employed.

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[249] See Fiscal Policy Council (2010), Chapter 6 for a comparative analysis of developments during the three crises for different groups in the labour market.
[250] According to the LFS, seasonally adjusted employment was highest in the third quarter of 2008 and lowest in the third quarter of 2009.

Table 6.7 Employment developments per form of employment, number of persons

	2008 Q3-2009 Q3	Percentage change
Permanent employment	-80 700	-2.3
Temporary employment	-65,600	-9.8
Entrepreneurs and family workers	2 800	0.7
Total	**-143 500**	**-3.1**

Note: Ages 16-64.
Source: Statistics Sweden, LFS.

Young people were hardest hit by the crisis. Unemployment among young people rose by 9.1 percentage points to almost 29 per cent. The employment rate declined by 6.5 percentage points. The reduction in youth employment accounted for almost 43 per cent of the total employment downturn (see Table 6.8) even though the age group (15-24) is small compared to adults (25-64). In the upturn, the employment rate for young people has increased more (by 3.6 percentage points) and unemployment has declined more (by 3.4 percentage points) than for other age groups. Nevertheless, youth unemployment is still high. Since approximately half of the young people have temporary positions, they also accounted for a large part of the reduction in the number of these positions during the crisis.

Table 6.8 Employment trends for different age groups and forms of employment, third quarter 2008 - third quarter 2009, number of persons

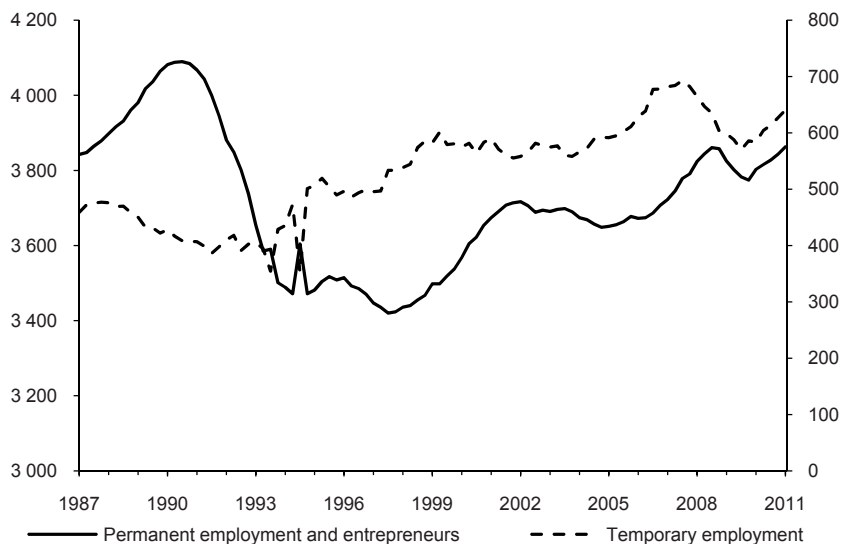|	Permanent employment	Temporary employment	Entrepreneurs and family workers	Total
Ages 15-24	-26 100	-37 400	2 300	-61 400
Ages 25-64	-54 500	-28 000	700	-81 800
Ages 15-64	**-80 600**	**-65 400**	**3 000**	**-143 200**

Note: NB! Ages 15-64 due to limitation in data availability.
Source: Statistics Sweden, LFS.

The steeper downturn in employment in percentage terms for temporary employment than for permanent employment in the latest crisis deviates from previous cyclical patterns. The difference compared with the 1990s crisis is obvious. Then the entire employment downturn occurred among the permanently employed, while the number of temporary jobs was relatively unaffected during the first years of the crisis and then increased (see Figure 6.5).[251]

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[251] Holmlund and Storrie (2002) analyse the trend in temporary employment during 1987-2001.

Figure 6.5 Employment trends, different forms of employment, thousands of persons

Note: Chained, seasonally adjusted data, ages 16-64, January 1987 - March 2011. Temporary employment is measured on the right axis, permanent and entrepreneurs on the left axis.
Source: Statistics Sweden, LFS.

In the recent crisis, temporary employment instead began to decline in late autumn 2007, even before the crisis erupted. Firms' behaviour thus also differs in this respect from the 1990s crisis. Section 6.1 showed that firms held onto their staff to a greater extent and that more of the adjustment was effected in average hours worked. One hypothesis is that firms now expected only a *temporary* downturn in demand (as distinguished from a permanent decline as a result of a deterioration in competitiveness in the 1990s) and therefore wanted to maintain key competencies that were most likely to be found among their permanent staff. Firms first cut temporary positions and reduced the number of hours worked. Another possible explanation is the changes in employment protection that have led to a higher percentage of temporary jobs than in the early 1990s. Because considerably more people had temporary employment at the beginning of the recent crisis, a larger part of the adjustment fell to them. A third hypothesis is that even at the outset of the recent crisis, employers already had slimmed down organisations compared with the beginning of the 1990s crisis and therefore had less need of rationalisation.

In the recovery now under way, employment began to increase at about the same time for both permanent and temporary employment. This is uncommon – temporary employment usually increases first.[252] That employers dared to increase permanent employment so early in the upturn is consistent with Business Tendency Survey indicators, which pointed to rapidly rising confidence in the economy from May 2009.[253]

6.2.2 Long-term unemployment

In the LFS, unemployment that lasts longer than 26 weeks is defined as long-term unemployment. In the recent crisis, long-term unemployment doubled, from about 1.5 per cent of the labour force in the third quarter of 2008 to a peak of almost 3 per cent in the first quarter of 2010. Long-term unemployment is now declining again. Unfortunately it is not possible to compare long-term unemployment trends in the latest crisis with the previous downturns, since Statistics Sweden does not publish data on long-term unemployment for the years 1993-1998 nor from the second quarter of 2005 to the first quarter of 2006. Moreover, the definition of unemployment was changed in 2007 and chained series backwards are not yet available. It is astounding that the development of such a key labour market variable, to which the Government attaches key importance, cannot be analysed over a longer period. It is difficult to understand why this shortcoming in the statistics has not been remedied.[254]

Some groups in the labour market run a greater risk of long-term unemployment than others. Long-term unemployment is three to four times higher among the foreign born than among those born in Sweden (see Figure 6.6). While the trend for those born in Sweden sloped downwards until autumn 2008, long-term unemployment among the foreign born was already increasing before the crisis. The increase occurred despite the favourable labour market,and the difference thus continued to grow. Long-term unemployment among those born in Sweden is now declining, while the high level among the foreign born persists and is even increasing.

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[252] Temporary employment started to increase in the fourth quarter of 2009 and permanent employment in the first quarter of 2010.
[253] Konjunkturinstitutet (2011a).
[254] See also Fiscal Policy Council (2010), Section 6.4.3.

Figure 6.6 Long-term unemployment, more than 26 weeks, those born in Sweden and the foreign born, per cent of the labour force
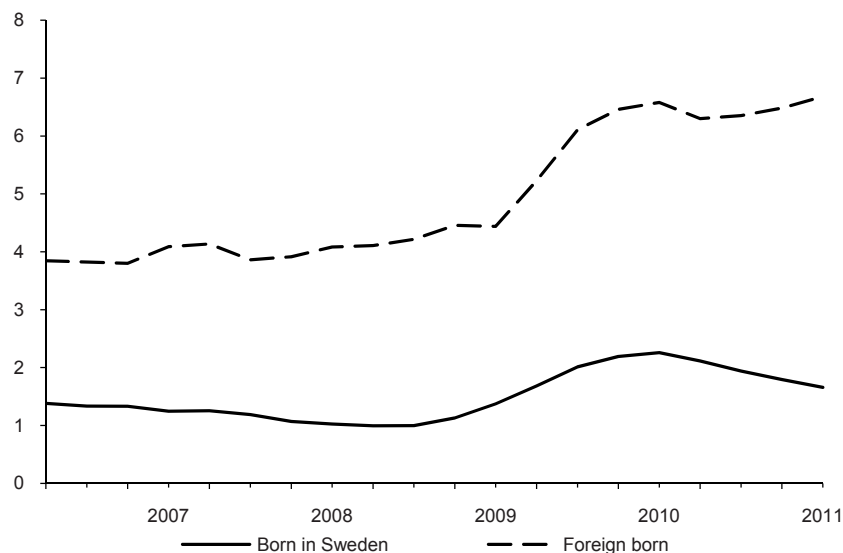
Note: Seasonally adjusted data, the second quarter of 2006 - the first quarter of 2011, ages 16-64. Unemployment according to the ILO definition.
*Source:* Statistics Sweden, LFS.

Figure 6.7 Long-term unemployment, more than 26 weeks, education levels, per cent of the labour force
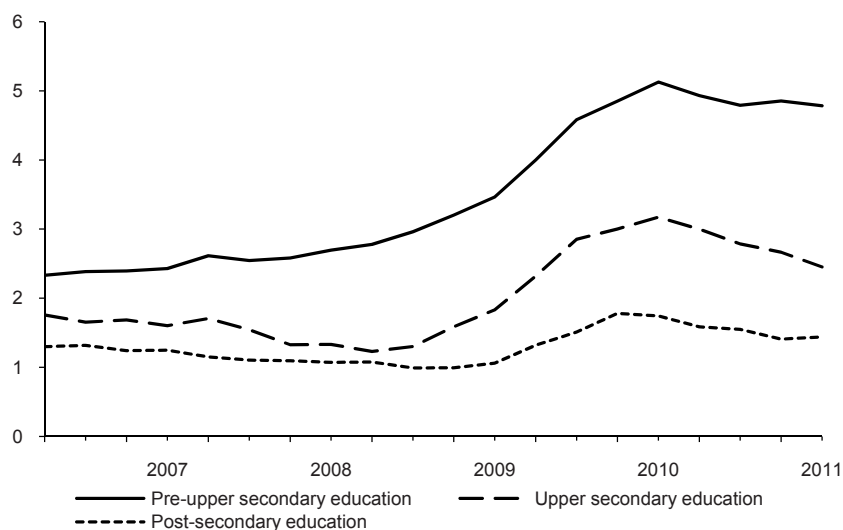
Note: Seasonally adjusted data, the second quarter of 2006 - the first quarter of 2011, ages 16-64. Unemployment according to the ILO definition.
Source: Statistics Sweden, LFS.

Figure 6.8 Openly unemployed and programme participants with activity support with different registration periods, number of persons
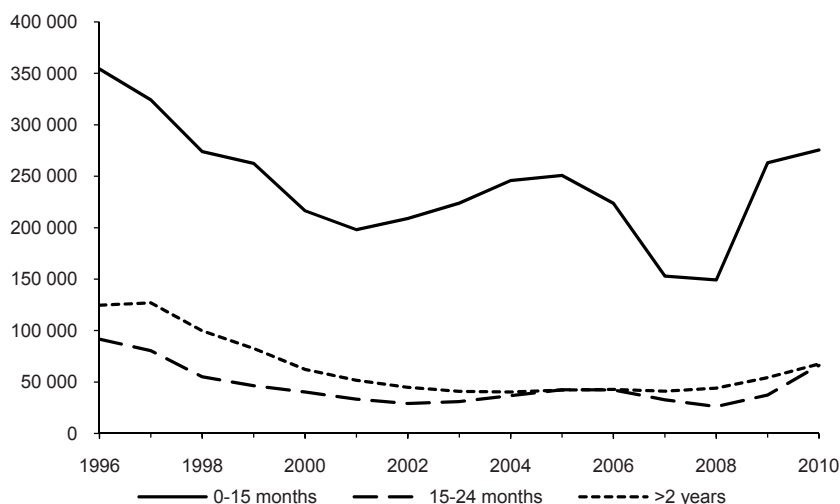
Note: Annual averages, 1996-2010. The category 0-15 months includes an unemployment insurance benefit period of 420 calendar days.
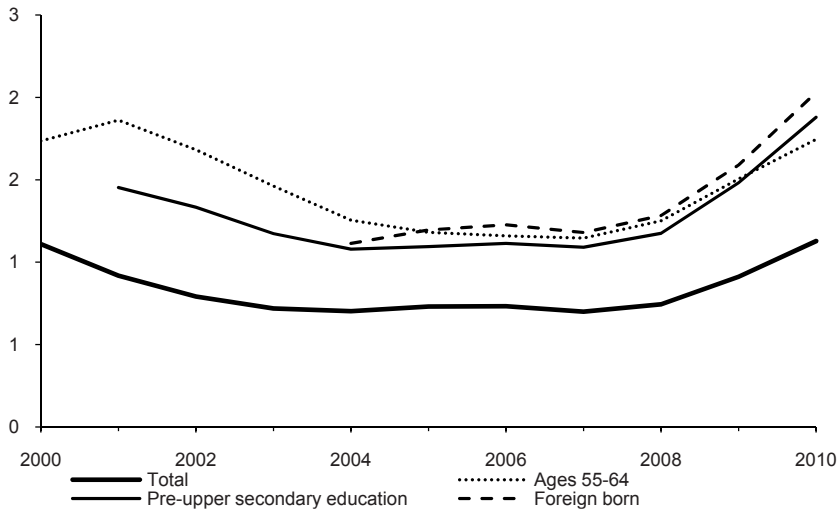*Source:* Public Employment Service.

Long-term unemployment for the unskilled is substantially higher than for people with a higher level of education. The difference between groups was already increasing before the crisis (see Figure 6.7). The high long-term unemployment appears to persist among those with only a pre-upper secondary education, while it is declining rapidly for those with an upper secondary and post-secondary education.

Figure 6.8 shows how the *cumulative registration period* with the Public Employment Service has developed. Those newly registered as unemployed normally begin with a period of open unemployment during which time they look for work on their own with support from the Public Employment Service. When necessary, or when their benefit days have expired, they can be referred to a programme. After a longer unemployment spell, the unemployed may also obtain some form of subsidised employment. Subsequently, they may return to open unemployment. During all this time, they are registered at the Public Employment Service as looking for work. The registration is only terminated when they start a regular job or regular studies or

leave the Public Employment Service for some other reason.[255] Figure 6.8 shows the annual average for the number of people still openly unemployed and programme participants with activity support with different registration periods.

Figure 6.9 Openly unemployed and programme participants with activity support with a registration period of over two years, per cent of the population

Note: Annual averages, 1996-2010.
Sources: Public Employment Service and Statistics Sweden.

The number of unemployed and programme participants with activity support who have been registered for *more than two years* declined from about 125 000 in 1996 to about 40 000 in 2004. Since the beginning of the economic crisis, the group has increased to about 68 000 in 2010. The group registered for *15-24 months* has also increased since 2008 and is now about the same size (66 000). The number of unemployed with *shorter registration periods* declined sharply between 2005 and 2008 with the improved labour market situation. Since then, the number of short-term registered has once more increased rapidly and now is higher than in 2005.

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[255] Those registered who at the time of measurement have a job (with or without support) or have a new start job are not included. If earlier during the registration period a person had a job, but is once again in open unemployment or some programme, the time in work is deducted. The registration time refers only to time in open unemployment or in programmes with activity support up to the time of measurement.

Figure 6.9 shows that registration periods at the Public Employment Service are particularly long for the foreign born and people with only a pre-upper secondary school education. A third category in the labour force at high risk of long registration periods are older workers (55-64) who become unemployed, for example, because of lay-offs in connection with economic downturns. These people may have firm-specific skills that are no longer in demand and out-of-date schooling, which may make it difficult to compete for the new jobs created when demand picks up.

6.2.3 Conclusions

Our analysis of different sectors and groups supports the view that employers responded differently to the recent crisis than to the 1990s crisis. In the earlier crisis, there was a reduction in permanent staff but not in temporary staff. In the latest crisis, employers reduced temporary positions to a greater extent and adjusted the number of hours worked.

In the upturn now under way, both temporary employment and permanent employment are increasing. This is uncommon – temporary employment usually increases first. With employment increasing rapidly, the risk of persistent long-term unemployment is decreasing.

Young people were particularly hard hit by the crisis. Youth unemployment is now declining but it is still at a high level. The employment rate for older workers continued to rise even during the crisis. This is positive in view of the risk of remaining in unemployment, as young people often have short unemployment spells whereas older workers are at risk of persistent long-term unemployment.

Even though unemployment increased more among the foreign born than among those born in Sweden, the former group appears to have come through this crisis better than before. The employment rate declined even a little more among those born in Sweden. In the current upturn, the employment rate for the foreign born is increasing, but more weakly than for those born in Sweden. Unemployment continues to increase despite the improvement in the labour market.

The crisis affected manufacturing in particular and in 2010 the increase in employment was limited even though industrial

production increased by close to 16 per cent.[256] The weak
employment growth is in line with the trend over the past 30 years,
when the number of hours worked in industry as a percentage of
hours worked in the economy as a whole has continued to decline.
According to NIER, this is due to high productivity growth, the
outsourcing of services to external service companies and the use of
temporary agency workers.

Long-term unemployment was a significant problem already
before the crisis. In spite of the favourable labour market situation in
2006/07, 0.7 per cent of the population (16-64) had been registered
with the Public Employment Service for over two years. Among the
foreign born, low skilled and older workers, the percentage of long-
term registrations was even higher. The crisis made the situation for
these groups even worse. While long-term unemployment in other
groups is now declining significantly, there is no evidence of the
same positive trend for the foreign born and low skilled.

6.3 Labour market flows

One way of measuring labour market dynamics is with *flow data*. It
shows how many people have changed status vis-à-vis employment,
unemployment and not in the labour force between two quarters.
But there is no information about what has happened between the
two times of measurement, for example, about a person who is
unemployed at both times but had a shorter temporary job some
time during the quarter. If so, that person is considered as remaining
in unemployment. Nor is there any information about how many
have changed employers during the quarter. They are counted as
remaining in employment, i.e. they are employed at both times of
measurement.

6.3.1 Flows to and from unemployment

Figure 6.10 shows unemployment trends from 2005-2010. The bars
show the inflow and the outflow between two quarters. In each
quarter the inflow into unemployment was 135 000-180 000 people.
At the same time, the outflow was 140 000-180 000.

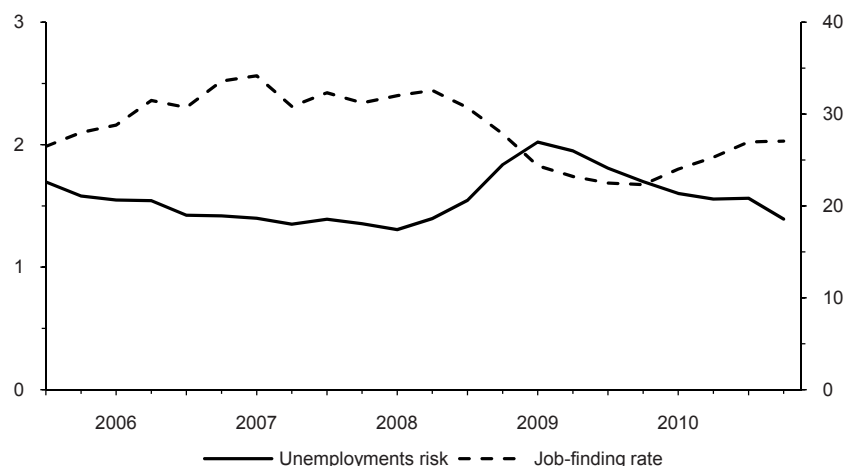
[256] Konjunkturinstitutet (2011b).

Figure 6.10 Unemployment dynamics, thousands of persons
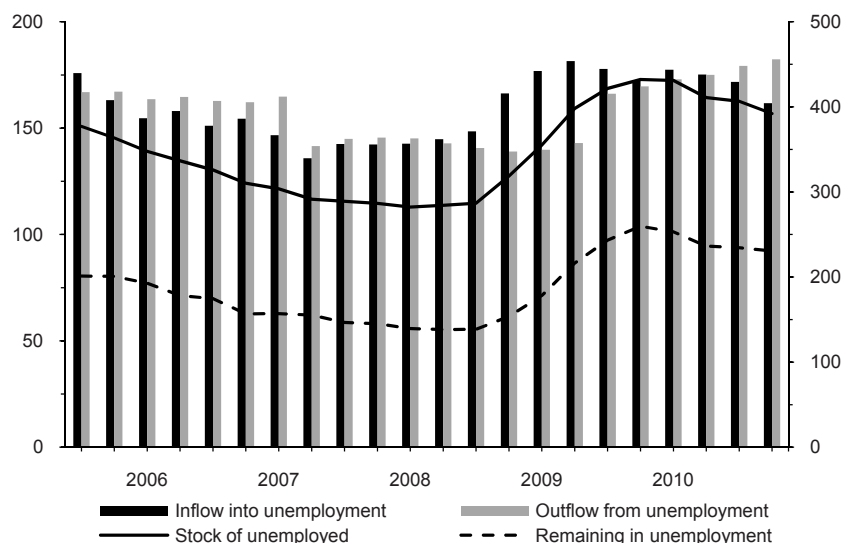
Note: Seasonally adjusted data for the third quarter of 2005 - fourth quarter of 2010, ages 16-64. Quarter refers to flow to this quarter. The remaining unemployed and the stock of unemployed (remaining unemployed plus inflow, i.e. the stock carried forward) is measured on the right axis, the flows on the left axis.
Sources: Statistics Sweden, LFS and own calculations

The inflow into unemployment consists of both people coming from employment and people who are entering or re-entering it (see Figure 6.1). Outflow from unemployment occurs when people become employed or leave the labour force. The number of unemployed (the stock) varied between 280 000 and 430 000. Thus the average inflow and outflow each accounted for more than 46 per cent of the stock each quarter. The cyclical pattern is clear. The outflow from unemployment was larger than the inflow in most quarters up to the beginning of 2008. After that, inflow into unemployment prevailed, particularly from the third quarter of 2008 to the third quarter of 2009. In 2010 unemployment has declined because of an increase in the outflow and a decrease in the inflow.

Figure 6.11 Job finding rate and unemployment risk during the crisis, per cent

Note: Seasonally adjusted data for the third quarter of 2005 - fourth quarter of 2010, ages 16-64. Quarter refers to flow to this quarter. The job finding rate is the percentage of the unemployed who become employed (right axis) and the unemployment risk is the percentage of the employed who become unemployed from one quarter to the next (left axis).
Sources: Statistics Sweden, LFS and own calculations.

Current research has focused on whether labour market adjustment in economic downturns has changed in recent years. Some researchers in the United States maintain that it is not primarily a larger inflow into unemployment that explains upturns in unemployment but rather a smaller outflow.[257] Other researchers have found that both a greater inflow and a smaller outflow play a role and that that the inflow is most important at the beginning of a recession.[258] Figure 6.10 shows that the increase in unemployment in Sweden during the crisis was due both to an increase in the inflow and a decrease in the outflow from unemployment, but that the contribution from an increased inflow was greater.

The unemployeds' *job-finding rate* is measured as the percentage of the unemployed who become employed between two quarters, and the employeds' *unemployment risk* as the percentage of the employed who become unemployed. Figure 6.11 shows that the job- finding rate peaked in the first quarter of 2007, when over 34 per cent of the unemployed became employed. Then the job-finding rate remained at around the same level until the second quarter of 2008, after which

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[257] See, for example, Hall (2005) and Shimer (2007).
[258] See Elsby et al. (2010) for a discussion and references.

it fell dramatically. It reached its minimum in the fourth quarter of 2009 when only 22 per cent of the unemployed became employed. The job-finding rate has subsequently improved and was 27 per cent in the fourth quarter of 2010.

The unemployment risk was lowest in the first quarter of 2008 when 1.3 per cent of those employed lost their jobs. After that the risk rose rapidly to two per cent in the first quarter of 2009 and then fell again. The unemployment risk thus increased one quarter before the large fall in the job-finding rate began. In the last quarter of 2010, the unemployment risk was almost down to the same level as before the crisis (1.4 per cent). But the job-finding rate was still much lower.

6.3.2 Unemployment risk and job-finding rate for different groups

Flow data show whether the differences in unemployment developments between different groups are due to whether they obtained jobs to a lesser extent or whether they moved from employment to unemployment to a greater extent.

Figure 6.12 shows that women and men generally speaking have similar job-finding rates and unemployment risks. But in the latest crisis, men's unemployment risk increased more, and also more rapidly and sooner, than women's. Men's job-finding rate also declined earlier than women's and fell to a slightly lower level. In the upturn, men's unemployment risk declined rapidly and is now lower than women's. Job-finding rates are increasing at the same pace and are approximately the same size.

The job-finding rate is somewhat higher for young people than for all the unemployed (aged 16-64) and follows approximately the same cyclical patterns. But young people's unemployment risk is over three times higher. It also increased considerably more and more rapidly during the crisis. The greater increase in unemployment for young people than for other groups was thus mainly due to the fact that more young people went from being employed to being unemployed, rather than that unemployed young people had more difficulty in finding a new job compared with other groups. The unemployment risk has now fallen in the economic upturn, but it is still not down to its previous level. The job-finding rate is also lower than before the crisis.
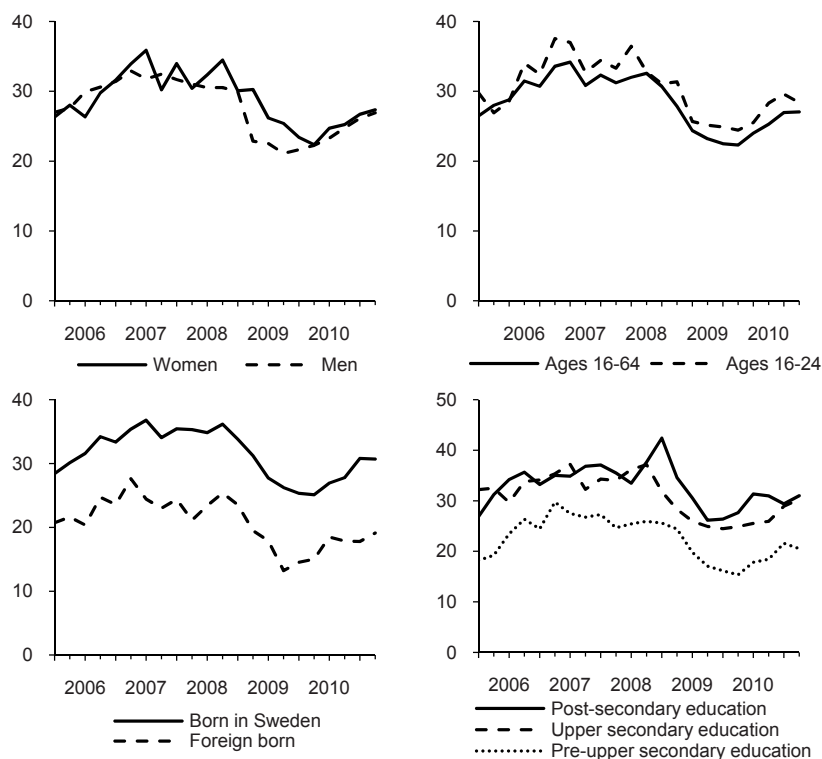
Figure 6.12a Unemployment risks for different groups
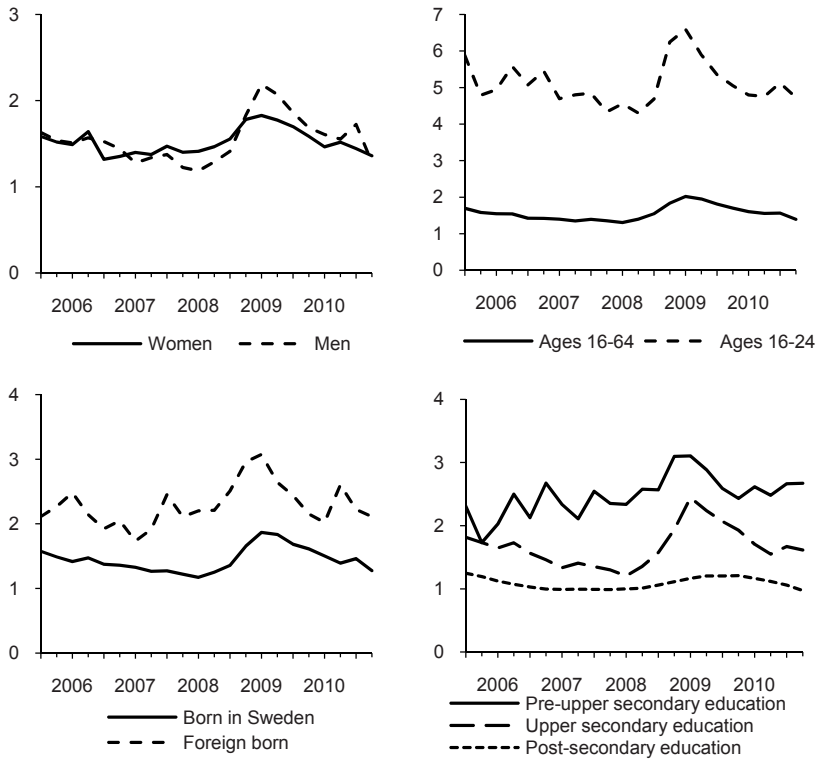
Note: Seasonally adjusted data for the third quarter of 2005 - the fourth quarter of 2010, ages 16-64 except for men and women which refer to ages 15-74. Quarter refers to flow to this quarter. The unemployment risk shows the percentage of employed who become unemployed between the two quarters.

Sources: Statistics Sweden, LFS and own calculations.

The foreign born and people with only a pre-upper secondary education show similar patterns. Both groups have a relatively high unemployment risk and low job-finding rates. The situation looks worst for those with only a pre-upper secondary education, whose unemployment risk after recovering somewhat in 2009 has since risen again.

Figure 6.12b Job-finding rates for different groups

Note: Seasonally adjusted data for the third quarter of 2005 - the fourth quarter of 2010, ages 16-64 except for men and women which refer to ages 15-74. Quarter refers to flow to this quarter. The job-finding rate shows the percentage of unemployed who become employed between the two quarters.
Sources: Statistics Sweden, LFS and own calculations.

6.3.3 Conclusions

Almost half of those who are unemployed in one quarter have left unemployment in the next quarter while about the same number have moved to unemployment from another status. The difference between these flows is the change in the stock of unemployed. The increase in unemployment during the crisis was due more to an increase in the inflow to unemployment than to a decrease in the outflow.

Women and men have approximately the same job-finding rate and unemployment risk. During the crisis, men's situation deteriorated more than women's. Men's job-finding rate and unemployment risk has improved in the upturn and is now

approximately the same as women's. Young people have higher, not lower, job-finding rates than the population as a whole. This is often forgotten in the debate. This is one reason why unemployment may be less of a problem for young people than for older people.[259] But young people have a considerably higher unemployment risk and youth unemployment also increased more and faster than for the population as a whole during the crisis. The greater increase in unemployment for young people than for other groups was thus mainly due to the fact that more young people went from being employed to being unemployed rather than that it was more difficult for unemployed young people to find a job.

Two groups with low job-finding rates and high unemployment risk are the foreign born and the low skilled. The labour market situation has now improved for all groups but the recovery is weakest for those with only a pre-upper secondary education.

6.4 Labour market recovery

GDP has now been growing since the fourth quarter of 2009. There is normally a strong relationship between production on one hand and employment and unemployment on the other. When the economy improves, output increases, initially because productivity improves, next because firms increase the hours worked and only then because the number employed increases. Thus employment and unemployment lag behind output.

The relationship between output and employment (or unemployment) is usually referred to as *Okun's law*. In last year's report, we showed that employment in 2009 decreased considerably less in relation to the fall in GDP than expected from the historical pattern.[260] One possible explanation is that the crisis primarily affected the export sector which is capital intensive, while the labour intensive service sector benefited from relatively strong domestic demand. Nor was the public sector affected in the same way as in the 1990s fiscal consolidation.

The decomposition of the number of hours worked per person in Section 6.2.1 showed that a considerable part of the adjustment in the recent crisis was made by a reduction in average hours worked

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[259] See Fiscal Policy Council (2009a), Section 6.2.2.
[260] See Fiscal Policy Council (2010), Section 1.2.3.

rather than by a reduction in employment. In addition, productivity, which had already started to fall in 2007, continued to decline in the downturn. This could raise fears that improvement in the labour market situation in the upturn would be delayed, i.e. a period of *jobless growth*.[261] Output could initially grow as a result of increases in productivity and average hours worked rather than increases in employment. But this appears not to have been the case. Since the beginning of 2010, employment has increased rapidly. At the same time, productivity in the business sector has risen.[262]

A continuation of the recovery in the labour market presupposes both job creation in the economy and employers' success in recruiting suitable applicants for these jobs. This section analyses the demand for labour and how well matching in the labour market functions.

6.4.1 Rising demand for labour

The total demand for labour at any point in time is the sum of the number of employed and the number of unfilled job vacancies. There are two sources of information on job vacancies: the Public Employment Service's job vacancy statistics and Statistics Sweden's job vacancy survey. Figure 6.13 shows job vacancies since 1987. These are positions that employers have listed with the Public Employment Service and that are still available at month end. The rapid drop in the number of job vacancies during the recent crisis is reminiscent of the decline in the 1990s, but the decrease now was much smaller. In the 1990s crisis, job vacancies dropped by about 45 000 while the decrease in the latest crisis was about 24 000, more in line with the decrease during the IT crisis. Since the third quarter of 2009, there has been a rapid upturn in the number of job vacancies.

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[261] This was pointed out by the OECD (2010b), for example.
[262] Konjunkturinstitutet (2011b).

Figure 6.13 Number of job vacancies still listed with the Public Employment Service at month end
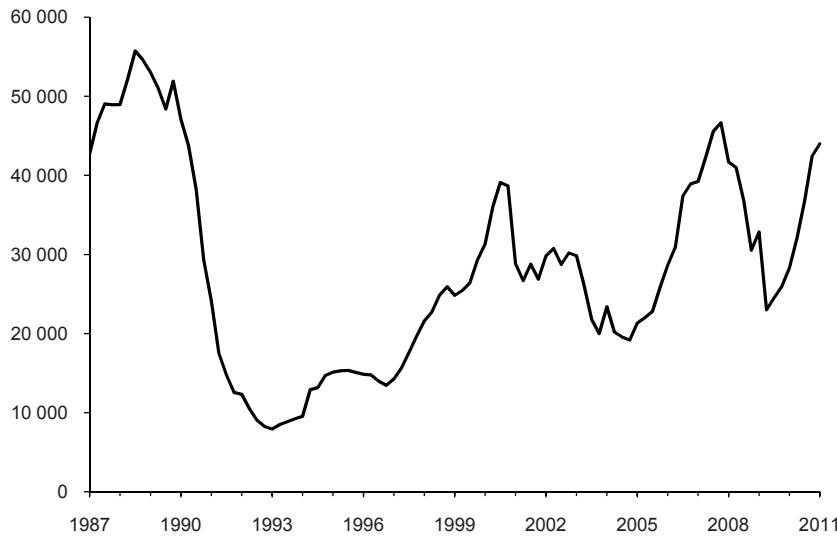
Note: Positions listed at the Public Employment Service by the employer and still available at month end. The first quarter of 1987 - the first quarter of 2011, seasonally adjusted data.
Source: Public Employment Service (from NIER).

Figure 6.14 Number of job vacancies in the economy as a whole
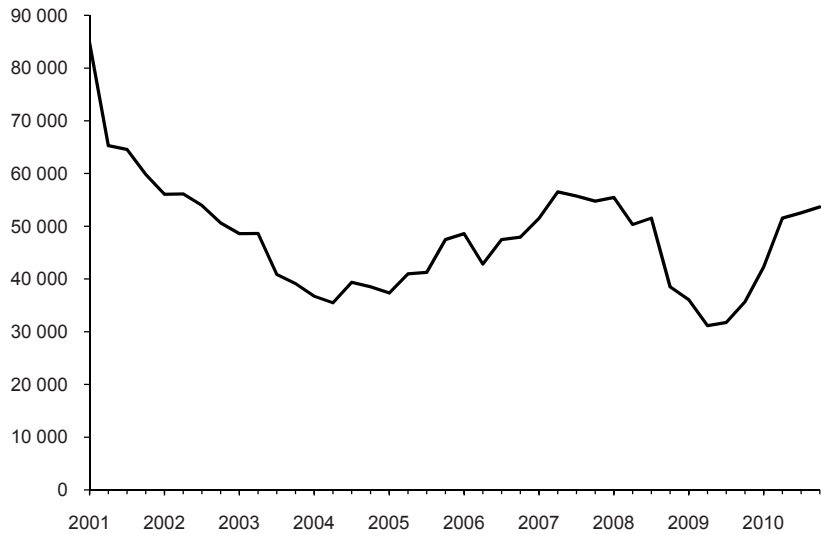
Note: The first quarter of 2001 - the fourth quarter of 2010, seasonally adjusted data.
Source: Statistics Sweden's Job Vacancy Survey (from Eurostat).

One problem with these data is that the Public Employment Service's market share varies over the business cycle. In economic upturns, a larger percentage of job vacancies are listed with the Public Employment Service.[263] Statistics Sweden's statistics on job vacancies are a better source, but they have only been collected since 2001.[264] It confirms the increase in the number of job vacancies since the fourth quarter of 2009 (see Figure 6.14).

6.4.2 How well does matching function?

Now when the labour market is improving, it is important for matching between job vacancies and the unemployed to be as effective as possible. The shorter the recruitment periods and unemployment spells are, the higher employment will be.

Recruitment is the result of a complicated process whereby employers come in contact with jobseekers with the right skills, determine who is the most suitable for the job and negotiate wages and other terms. Similarly, jobseekers must find an appropriate job vacancy as regards the qualification requirements, sector and geographical location. Matching between job vacancies and the unemployed is customarily explained with the help of a *Beveridge curve*. It shows the relationship between vacancies and unemployment. When the business cycle turns downwards, vacancies decrease and unemployment increases. Therefore the Beveridge curve is downward sloping. When the economic situation improves, vacancies increase before employment does. This gives a counter-clockwise loop in the diagram.

When matching works poorly, it takes a long time to pair vacancies and the unemployed and there are therefore more vacancies for a given level of unemployment. The nearer the origin, the more effective the matching is. Figure 6.15 shows the relationship for three different sub-periods between 1990 and 2010.

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[263] According to the Public Employment Service, its market share varies between 30 and 50 per cent of all job vacancies. It was previously obligatory to list all job vacancies with the Public Employment Service, but this requirement was abolished on 1 July 2007 (Arbetsförmedlingen 2009).

[264] Statistics Sweden distinguishes between job openings that are manned or unmanned. An unmanned job opening that can be assumed immediately is the best match for the unemployed who are looking for work and are free to take a vacant job. But there is a lack of information on whether job openings are manned or not in the public sector. Therefore our analysis is based on all job openings so that the entire labour market can be included in the analysis.

Figure 6.15 Beveridge curves 1990-2011
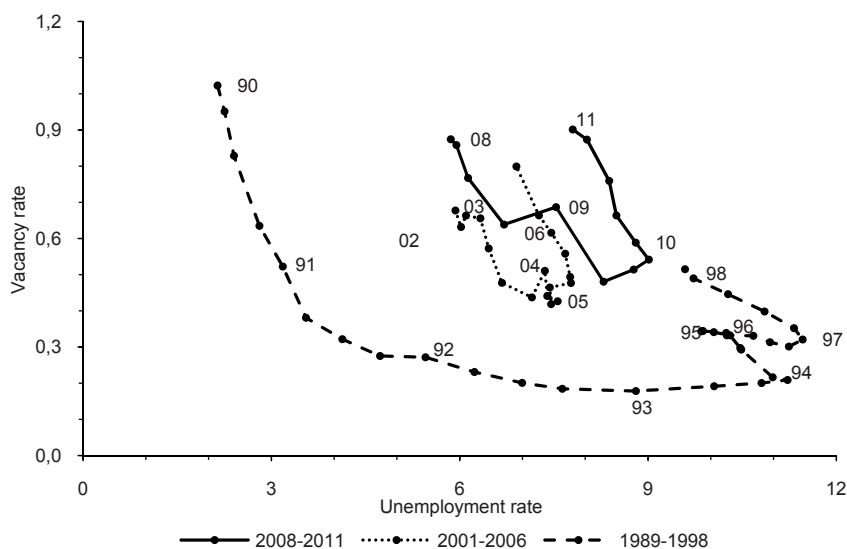
Note: The vacancy rate is the number of job vacancies as a per cent of the labour force. Unemployment is stated as a per cent of the labour force according to the ILO definition. The period covered is the first quarter of 1987 - first quarter of 2011, seasonally adjusted data.
Sources: LFS (unemployment and labour force) and the Public Employment Service (job vacancies).

Sub-periods stretch from the the quarter when unemployment begins to rise through the fifth quarter after unemployment has peaked.[265] After the 1990s crisis the relationship seems to have changed and matching deteriorated. The Beveridge curve appears to have shifted outwards. According to the figure, there may have been a further shift in 2008-2011 compared with earlier years in the 2000s.

As Public Employment Service data on job vacancies do not reflect all job vacancies, Figure 6.16 shows the relationship between job vacancies from Statistics Sweden and unemployment for the period 2001-2010. As expected, the figure shows a downward movement along the curve in the IT crisis from 2001 to 2005. When the labour market situation improved between 2005 and 2007, vacancies increased again and unemployment declined (in a counter-clockwise trajectory).

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[265] The analysis is inspired by Riksbanken (2011). In Figure 6.15 the 1990s crisis is extended through the first quarter of 1997 to include the entire upturn in unemployment.
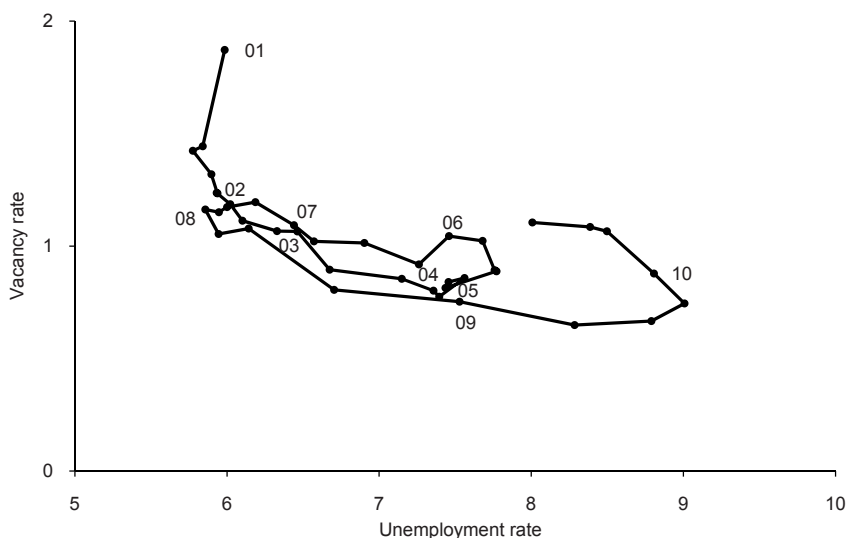
Figure 6.16 Beveridge curve for 2001-2010

Note: The vacancy rate is the number of job vacancies as a per cent of the labour force. Unemployment is stated as a per cent of the labour force according to the ILO definition. The period covered is the first quarter of 2001 - first quarter of 2010, seasonally adjusted data.
Sources: LFS (unemployment and labour force) and Statistics Sweden's short-term employment statistics (from Eurostat).

During the recent crisis, vacancies declined and unemployment increased again. Now a reverse movement is under way. From the beginning of the second quarter of 2010, the curve appeared to shift outwards. This would indicate that matching had worsened, but in the third and fourth quarters, it has shifted back towards the previous relationship. Unlike Figure 6.15, the shift outwards in recent years is not as pronounced. But the data series are one quarter shorter.[266] This makes it difficult to draw a clear conclusion. The increase in the market share of the Public Employment Service in economic upturns is probably a factor in why the increase in the number of job vacancies (in Figure 6.13) does not show the same moderation in pace as Statistics Sweden data on job vacancies in the economy as a whole (Figure 6.14). As a result, developments for the last quarters in 2010 look worse in Figure 6.15 than in Figure 6.16.

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[266] Statistics Sweden has not yet published vacancy statistics for the first quarter of 2011.

The Riksbank notes that as in previous recovery phases, the matching process now appears to be less effective.[267] It also notes that the already high number of firms reporting labour shortages in several sectors despite relatively high unemployment indicate that matching may have worsened. The NIER (Konjunkturinstitutet 2011b) has a different view. They find that the upturn in the labour shortage figures in relation to the increase in employment is not remarkable, and that sectoral and regional imbalances do not appear to have increased. But the crisis seems to have led to greater imbalances between different education levels.[268]

Matching in the labour market can also be analysed with the help of a *matching function*.[269] It describes how the number of job vacancies filled (i.e. matches) depends on the number of jobseekers and the number of job vacancies. The number of matches increases as more job vacancies occur (the probability of a jobseeker finding a job increases) and as the number of jobseekers increases (the probability of employers finding a suitable candidate increases).

Matching is also affected by a number of other factors: how efficiently the unemployed look for work, the fit between the the unemployed and the job vacancies in terms of skills, sector and geographic location,the extent and direction of labour market policy, etc. Search behaviour is influenced by how unemployment insurance is designed, how widespread long-term unemployment is, what the age composition among jobseekers is and how the housing market functions.

There are relatively few studies of the matching function using Swedish data. There are two previous studies focusing on how labour market programmes affect matching. The studies find that programme participation is less conducive to matching than open unemployment is.[270] Forslund and Johansson (2007) find that higher shares of programme participants and long-term unemployed among jobseekers have an adverse effect on matching. This is due to locking-in in programmes and the greater difficulty getting a job

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[267] Riksbanken (2011).

[268] In the Government's opinion, the risk of bottlenecks is limited to particular occupations and employment may increase substantially in the next few years without any major shortage of labour (2011 Spring Fiscal Policy Bill, pp. 88-89 and 121).

[269] See, for example, Petrongolo and Pissarides (2001).

[270] Edin and Holmlund (1991) and Hallgren (1996).

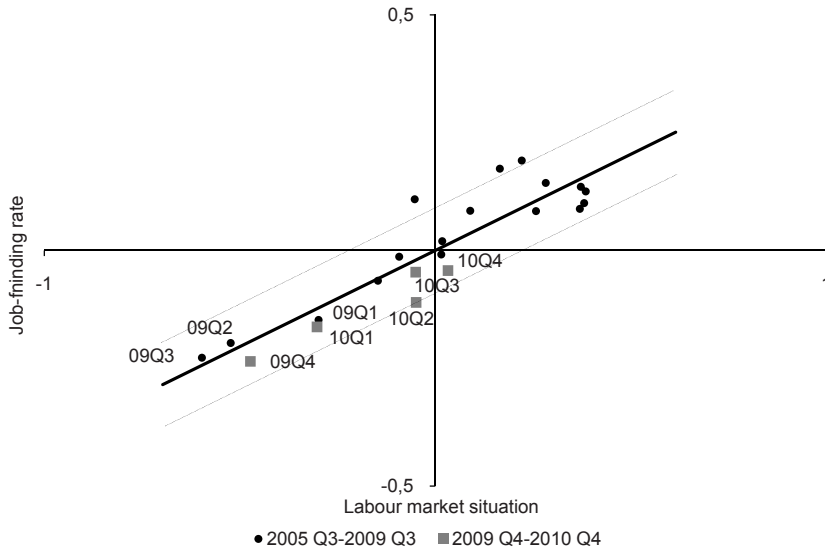when one has been unemployed for a long time (obsolete skills, statistical discrimination, etc.).

Since 2008 the Public Employment Service has reported a matching indicator based on Forslund and Johansson (2007).[271] The analysis shows that the number of matches throughout much of 2009 was lower than expected based on the historical relationship. This could to some extent be the result of a less effective labour market policy. The Employment Service notes that the programme mix, with a large coaching component and limited volumes of subsidised employment and skills improvement measures for those most detached from the labour market, was not optimal in that economic situation. The rapid increase in unemployment, as well as the Public Employment Service's expanded responsibility for newly arrived immigrants, for those whose sickness insurance has expired and for increased procurement of private providers may also have hampered its effectiveness in its traditional employment service. The Public Employment Service analysis referred only to jobseekers registered there. This may explain why the worsening in matching observed in 2009 is not reflected in the Beveridge curve in Figure 6.16 which is based on data from Statistics Sweden covering the labour market as a *whole*.

An alternative way to determine whether matching is worse is to study the relationship between the job-finding rate and the labour market situation.[272] As in Section 6.3, we measure the job-finding rate as the percentage of unemployed who become employed during a certain period. The labour market situation is measured as the ratio between vacancies and the unemployed (*labour market tightness*). Figure 6.17 indicates a stable positive relationship between the job-finding rate and labour market tightness. Unlike in the United States, where the job-finding rate after the economic crisis was lower than expected in relation to labour market tightness, the relationship in Sweden does not appear to have worsened significantly in 2009 or 2010. The outflow from unemployment to employment in the second quarter of 2010 was admittedly somewhat lower than expected, but it was more in line with labour market tightness in the third and fourth quarters.

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[271] See Fransson (2009) and the Arbetsförmedlingen (2010a).
[272] The analysis is based on Shimer (2005) and Elsby et al. (2010).

Figure 6.17 Job-finding rate and labour market situation, 2005-2010

6.4.3 Conclusions

The analysis of the relationship between vacancies and unemployment shows that matching worsened after the 1990s crisis. When Public Employment Service job vacancy data are used in the analysis, there are some signs of another worsening in matching in recent years. With Statistics Sweden data on job vacancies in the economy as a whole, the picture is less clear. Our analysis of how the outflow from unemployment to employment (the job-finding rate) depends on the labour market situation does not show any pattern that differs from developments since 2005. But the short data series limits the value of this analysis.

6.5 Small risk of long-term effects from the crisis

Severe crises often have persistent adverse labour market effects. Equilibrium unemployment, i.e. the unemployment that is due not to the cyclical situation but to the way the labour market functions, increases normally and according to the OECD analysis peaks five years after a sharp downturn in employment has begun (OECD 2010b). According to this analysis, it takes around five years before equilibrium unemployment returns to its pre-crisis level. It is the OECD's view that equilibrium unemployment in most countries will increase less after this crisis than after previous ones. This is because unemployment has risen only moderately in many member countries and in the last two decades, these countries have introduced reforms to increase labour market flexibility. The OECD estimates that equilibrium unemployment in Sweden will rise by less than 0.25 percentage points as a result of the economic crisis.

In our view, the long-term effects of the crisis will be limited. This assessment is based on a number of observations:

- The increase in unemployment and the decrease in employment were limited.
- The crisis hit young people hardest, while older workers have fared relatively well. The latter have historically had greater problems with persistent unemployment compared with young people.
- The increase in labour force participation reduces the risk of persistent exclusion from the labour market.
- The overall picture does not point to any significant worsening in the matching process in the labour market as a result of the crisis.

But there are also causes for concern. Even before the crisis, there were problems with long-term unemployment, particularly among the foreign born, the low-skilled and older workers. The crisis made the situation for these groups of long-term unemployed even worse. The persistently weak labour market situation for people with only a pre-upper secondary education is particularly difficult. The NIER (Konjunkturinstitutet 2011b) finds that the crisis has led to greater imbalances between different education levels. This may justify further labour market and education policy measures. It is also

worrisome that unemployment – and long-term unemployment – are still increasing among the foreign born. This group to some extent overlaps with the low-skilled.

The continued effects of the sharp contraction in employment in manufacturing also need to be monitored. A large number of these jobs are unlikely to return. It therefore requires enough occupational and geographic mobility to enable those who lose their employment in industry to find new jobs in growing sectors.

7 Employment policy

The Government has made "guiding Sweden to full employment and thus reducing exclusion" its top priority.[273] This priority has been used to justify reforms in a number of areas: taxation, unemployment insurance, labour market policy and sickness insurance. We have in our previous reports discussed all these reforms in detail. This chapter focuses on the Government's analysis of the overall effects of the employment measures and the unemployment insurance.

7.1 The Government's analysis

A basic problem in any analysis of the effects of the Government's employment policy is differentiating between cyclical and structural factors. The aim of the labour market reforms is to affect potential employment and equilibrium unemployment, in other words, employment and unemployment in a normal cyclical situation. In recent years, there have been – as Section 6.1 makes clear – large cyclical swings that in the short run have overwhelmed the reforms' structural labour market effects.

Evaluations of what effects the labour market reforms may have in the long run must currently be made with the help of modelling. The ideal would be to use a *quantitative general equilibrium model* of the Swedish economy that can analyse the interaction between the most important mechanisms in a consistent manner. The Ministry of Finance uses a combination of detailed quantitative analysis, particularly to analyse the supply effects of tax changes, and more general estimates based on both international and Swedish research. The disadvantage of this method is that it is difficult to see if the different sub-results actually are consistent with each other. At the same time, in our view, the Ministry's analyses make competent use of existing research.

Prior to the 2011 Spring Fiscal Policy Bill, the Ministry of Finance did an extensive analysis to estimate potential labour supply, potential employment and equilibrium unemployment and examine how these variables are affected by the labour market reforms implemented.[274]

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[273] The 2011 Spring Fiscal Policy Bill, p. 23.
[274] Finansdepartementet (2011b).

Table 7.1 Change in equilibrium unemployment, labour force participation and employment rate according to the Ministry of Finance, percentage points

	Equilibrium unemployment	Labour force participation	Employment rate
Level 2006	**6.6**	**71**	**66**
Demography	0.4	-2.1	-2.2
Unchanged ceiling for unemployment benefits	-0.6	0.1	0.5
Structural reforms	-1.4	2.2	3.0
Previous structural reforms	0.0	0.1	0.1
Level 2020	**5.0**	**71**	**68**

Note: Equilibrium unemployment is according to the ILO definition of unemployment for ages 15–74. Labour force participation and the employment rate (as a percentage of the population) refer to people aged 15-74.
Source: Ministry of Finance (2011b), Table 3.1.

Table 7.1 reproduces the results. The potential employment rate (the number of employed as a percentage of the group aged 15-74) is predicted to rise from 66 per cent in 2006 to 68 per cent by 2020. In the same period, equilibrium unemployment is expected to fall from 6.6 per cent of the labour force to 5.0 per cent. The labour market reforms (including the reduction in the replacement rate in unemployment insurance that is due to keeping the ceiling for unemployment benefits unchanged) is expected to contribute to an increase in the potential employment rate by 3.5 percentage points and to a reduction in equilibrium unemployment by two percentage points. These effects are counteracted by demographic effects (higher proportions of population groups with lower labour force participation and higher unemployment) that tend to reduce the employment rate by more than two percentage points and increase equilibrium unemployment by 0.4 percentage points.

Table 7.2 shows that according to the Government's analysis, the earned income tax credit and the lower replacement rate in unemployment insurance account for the main effects. The earned income tax credit is expected to increase employment by 2.3 per cent and reduce equilibrium unemployment by 0.6 percentage points. The lower replacement rate in unemployment insurance (a combination of decisions on changes and the lack of decisions on ceiling adjustments) is expected to increase employment by 1.8 per cent and reduce equilibrium unemployment by 1.3 percentage points.

Table 7.2 Long-term labour market effects of the Government's policy, per cent or percentage points

	Labour force	Employment	Equilibrium unemployment	Hours worked
Earned income tax credit	1.6	2.3	-0.6	2.9
Unemployment insurance	0.2	1.0	-0.7	1.0
Sickness insurance	0.9	0.4	0.4	0.5
RMI/Household services tax credit	0.2	0.4	-0.2	0.5
Reduced social security contributions	0.2	0.2	0.0	0.2
Labour market policy	0.1	0.3	-0.2	0.3
Income tax threshold	0.0	0.0	0.0	0.3
Total structural reforms	**3.1**	**4.6**	**-1.4**	**5.7**
Unchanged ceiling for unemployment benefits 2006-2011	0.1	0.8	-0.6	0.7
Total effect	**3.3**	**5.3**	**-1.9**	**6.4**

Note: Unemployment is according to the ILO definition. All variables refer to people aged 15-74. Percentage change in the labour force, employment and hours worked. Change in unemployment in percentage points.
Source: Ministry of Finance (2011b), Table 3.2.

The impact of the labour market reforms on equilibrium unemployment estimated by the Ministry of Finance may seem very large. One way of judging the soundness of the estimates is to compare them with developments in other countries that have previously carried out major labour market reforms, such as Denmark, Germany, Great Britain and the Netherlands. This is done in Box 7.1. In a comparison like this, the reduction in equilibrium unemployment expected by the Government does not appear unreasonable. After sweeping labour market reforms, unemployment in the above-mentioned countries has fallen more than the decrease in the Government's forecast for Sweden.

Box 7.1 Labour market developments after major labour market reforms

Figure 7.1 shows the moving five-year average for unemployment in four countries that have already implemented major labour market reforms: Denmark, Germany, Great Britain and the Netherlands. The moving average should be viewed as a rough measure of equilibrium unemployment (unemployment in a normal cyclical situation).

Denmark and Germany's reforms were most like Sweden's in the

sense that major labour market reforms were implemented in a relatively short time. In Denmark the reform period was 1994-1999. The changes included shorter benefit periods and lower benefits in unemployment insurance and more activation initiatives in labour market policy. The biggest changes concerned young people. Figure 7.1 shows a decline in (the moving average for) unemployment from over 8 per cent around 1995 to about 5 per cent around 2005.

Figure 7.1 Unemployment after major labour market reforms
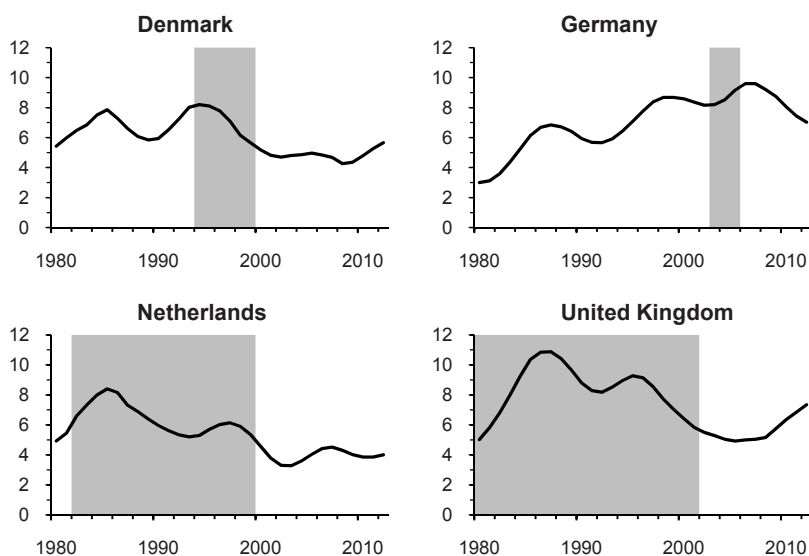
Note: Five-year moving average, per cent of the labour force. The shading shows the periods when major labour market reforms were implemented.
Sources: European Commission and own judgements.

The Hartz reforms in Germany were carried out from 2003-2005. They included a radical cut in unemployment benefits for the long-term unemployed as well as active labour market measures and subsidised employment. It appears that the previous upward trend in unemployment, with successively higher unemployment in each new economic downturn, was broken after the reforms. The moving average for unemployment fell from about 10 per cent in 2006 to about 8 per cent in 2011.

Labour market reforms in Great Britain and the Netherlands were implemented over a considerably longer period: from the early 1980s to the early 2000s. In Great Britain the reforms included

various changes to labour legislation aimed at weakening trade unions and making unemployment insurance less generous (primarily under Thatcher in the 1980s) and implementing more labour market activation initiatives, particularly for young people, and a form of earned income tax credit (in the late 1990s and early 2000s). In the Netherlands there were incomes policy agreements between the government and the social partners on wage restraint as well as stricter requirements for early retirement and sickness compensation, less generous unemployment benefits, more focus on labour market policy targeting weak groups and more opportunities for temporary employment. From the mid-1980s to 2005, (the moving average for) unemployment fell from almost 11 per cent to about 5 per cent in Great Britain and from about 8 to about 4 per cent in the Netherlands.

7.1.1 Ministry of Finance analytical framework

The *search and matching model* developed by Peter Diamond, Dale Mortensen and Christopher Pissarides is an appropriate theoretical framework for analysing the labour market reforms. (These three researchers shared the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel – "the Nobel prize in economics" – for this model).[275] The model emphasises the presence of *search frictions* that make matching job vacancies take time. Firms' decisions to post job openings are assumed to be governed by forward-looking considerations about the profitability of recruitment, which in turn depends on both wage costs and the costs associated with new recruitment. The unemployeds' search intensity is determined by the expected value of looking for work, which in turn depends on the probability of finding a job and the income from it compared with the income from being unemployed. Wages are set in negotiations between employers and employees: the outcome is affected by how much an employer would lose by not filling the position and how much employees would lose by leaving their position.

The search and matching model described is essentially an analytical framework for equilibrium unemployment. This analytical framework can be expanded to explain labour force participation as

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[275] The model is described in Pissarides (2000) and Cahuc and Zylberberg (2004). For example. Englund et al. (2010) is a popular description.

well.[276] The assumption is that this depends on the expected value of being in the labour force compared with the value of not being in the labour force. The value of participating in the labour force depends in turn on the probability of being employed and in that case, the wage received; the value of not participating in the labour force depends on the income obtained in this state.

The Ministry of Finance does not use a uniform model of this kind to analyse the interaction between different mechanisms in the labour market. Instead a detailed *microsimulation model,* which is used to analyse the effects of the earned income tax credit (and other tax changes) on labour force participation and hours worked, is employed in combination with general estimates.[277] The latter are based on an analytical framework of the search and matching type of how the earned income tax credit and changes in unemployment benefits in particular affect equilibrium unemployment. Estimates of how cyclical variations in actual unemployment and changes in the composition of the population may affect equilibrium unemployment are then added. The estimates of the effects of the cyclical variations are based on models, but they are empirical models of a completely different type than search and matching models. The estimates of the effects of the demographic changes are based on more mechanical assumptions about unchanged labour market behaviour (or changes in line with certain trends) for different population groups.

The Ministry of Finance estimates the effects of various changes with the help of different types of models (or mechanical assumptions) and then adds them together. The weakness in this method is that one does not know whether a reform analysed with the help of one analytical model gives rise to adjustment mechanisms on the part of other types of models that weaken (or strengthen) the effects estimated using the first model, and so on. This does not mean that Ministry of Finance estimates are unreasonable, only that there will be considerably more uncertainty than if an integrated general equilibrium model that can address the interplay between all the mechanisms is used.

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[276] See for example Kolm and Tonin (2010) and Fiscal Policy Council (2010), Section 7.1.2.
[277] The microsimulation model uses detailed information at the individual and household level to estimate how individuals' labour market 226ehavior is influenced by various tax changes. The model is described in the Ministry of Finance (2009, 2010b). See also Fiscal Policy Council (2010), Section 7.1.4.

7.1.2 Earned income tax credit

In earlier reports we have criticised both the Government's discussion of the effects of the earned income tax credit in the Budget Bills and the underlying analysis.[278] The estimates of the employment effects reported have generally only concerned the labour supply effects. But the Government has not explained why the demand for labour also increases, with the result that the increased number of people who want to have jobs because of the credit can also get them. Instead of clearly explaining that restraining before-tax wages is an important adjustment mechanism, so that it becomes more profitable for employers to recruit, vague wording about there being "better-functioning wage formation" has been used.[279] In the public policy debate, the Government has chosen not to admit that there would be wage restraint.[280]

The 2011 Spring Fiscal Policy Bill and the analysis underlying it (Ministry of Finance 2011b) are definite improvements in this respect. Now it is clearly explained that the earned income tax credit is assumed to act as a significant restraint on before-tax wages and thus contribute to higher employment and lower equilibrium unemployment.[281] The analysis of the pure supply effects (given unchanged wages) is supplemented with an analysis of the effects on equilibrium unemployment. This is done based on various empirical studies' estimates of the effects of changes in the replacement rate for the unemployed (unemployment benefits compared with the wage if employed) which can be assumed also to reflect the wage formation effects. Most of these studies admittedly concern changes in the replacement rate *before tax*, but it may be a good approximation to assume that changes in the replacement rate *after tax* have similar effects. The Ministry of Finance assumes in its estimates that a one percentage reduction in the replacement rate results in a 0.12 percentage point reduction in equilibrium unemployment, which is a value in the middle of the estimates made on international panel

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[278] See, for example, Fiscal Policy Council (2010), Section 7.1.4.
[279] See, for example, the 2011 Budget Bill, p. 62.
[280] See, for example, Expressen (2009).
[281] In the 2011 Spring Fiscal Policy Bill, this discussion can be found in Section 4.4. But there is no such discussion in the Budget Statement, which is the part of the Bill that most people read.

data.[282] This estimate is reasonable, even though there is considerable uncertainty.

7.1.3 Lower replacement rate in unemployment insurance

The Ministry of Finance's analytical background report for the Spring Fiscal Policy Bill also analyses the labour market effects of the reductions made in the replacement rate (before tax) in unemployment insurance. These reductions are the combined effect of a lower ceiling for unemployment benefits in the first hundred days and a decrease in benefits for the long-term unemployed as of 2007, no change in the ceiling when wages have risen, and a drop in membership in the unemployment insurance funds, which means that fewer of those now employed are entitled to income-related unemployment benefits.[283] The 2011 Spring Fiscal Policy Bill also clearly reports that the lower replacement rate is likely to act as a restraint on before-tax wages. The effect on equilibrium unemployment due to the effects on wage formation is assumed to be twice as large as the effect that arises because the unemployed workers' search behaviour is affected.

The Ministry of Finance estimates of how the unemployment insurance changes affect equilibrium unemployment are based on the same studies as the estimates of the earned income tax credit's effects. But it is surprising that the estimates of the effects of the earned income tax credit and the estimates of the effects of the changes in unemployment benefits do not appear to be synchronised. The former appear to be based on estimates of the change in the replacement rate *after tax* and the latter on estimates of the change in the replacement rate *before tax*. Moreover, the magnitude of the changes in both these replacement rates has been calculated using entirely different methods. According to the theory, there is a relation between the replacement rate after tax and equilibrium unemployment. The most appropriate way of doing the analysis

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[282] Studies of this kind try to explain the differences in unemployment both between countries and over time within countries. On the one hand, a few studies using Swedish data found greater effects on unemployment than under the estimates used by the Ministry of Finance (Fredriksson and Söderström, 2008, and Forslund et al. 2008), while on the other hand, Bassanini and Duval (2006) found that in countries with large labour market programmes, the effects are less and not significant.

[283] See Section 7.2 below.

would therefore be to calculate a change in the after-tax replacement rate and then decompose it into contributions from the earned income tax credit and from changes in the unemployment benefit rules in the way we did in last year's report.[284]

7.1.4 The labour market reforms and wage formation

As noted above, the Government has not before wished to acknowledge that the earned income tax credit and the less generous unemployment benefits are likely to reduce before-tax wages. That link has also been questioned by Henreksson (2010). Previously there were almost no studies that could directly demonstrate a relationship between the replacement rate in unemployment insurance and wage formation. Forslund et al. (2008) and Westermark (2008) are two exceptions. These two studies have estimated the relationship using time series data for the Swedish economy as a whole (and in the former case also data for all the Nordic countries).

   The possible effects of the earned income tax credit and reductions in the replacement rate in unemployment insurance have been investigated by Helge Bennmarker, Lars Calmfors and Anna Larsson in a background paper to this year's report (Bennmarker et al. 2011). The study uses wage data for a panel of individuals for the period 2004-2009 and studies the relationship between individuals' after-tax replacement rate in the event of unemployment and their before-tax wage, while attempting to control for other factors that may affect wages. The study finds a strong correlation between an individual's replacement rate and wage. Most estimates give an elasticity of wages with respect to the replacement rate of about 0.4. This would mean that a 10 per cent reduction in the replacement rate (for example, from 70 per cent to 63) is consistent with a 4 per cent lower wage than would otherwise be the case. The study also examines whether wages increased more rapidly for young people after the selective reduction of social contributions for this group but found no support for this (see also Section 7.1.5 below).

   The results of the study should be interpreted with caution as they only indicate a *statistical covariation* between the wage and the

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[284] Fiscal Policy Council (2010), Section 11.1.

replacement rate which does not necessarily reflect any causal relation. But the result is consistent with the hypothesis that the earned income tax credit and less generous unemployment insurance may have substantial wage-dampening effects. But even if there is a causal relation, the outcomes described cannot be directly translated into effects on the wage level in the economy as a whole. This is because the wage increases for the individuals in the sample used in the estimates also include *career effects* which are due to individuals becoming older and getting promotions. But such effects do not influence the aggregate wage increases for the economy as a whole since there is both a decrease in the number of older workers (with high wages) when they exit the labour market and an inflow when younger workers (with lower wages) enter it. If one scales down the relation found by taking this into account, the reduction in the average after-tax replacement rate that took place from 2007-2009 of about 14 percentage points (with the measure used in the study) according to the estimates would have had a restraining effect on wages of about four per cent.[285] If this can be interpreted as a causal relation, then it is a considerably stronger, and more rapid, effect than we had expected. But it is somewhat smaller than the (least possible) long-term effect on wages found by Bennmarker et al. (2008) based on time series data for the economy as a whole.

7.1.5 Lower social contributions

In the Ministry of Finance's background paper for the Spring Fiscal Policy Bill, there is also an analysis of the effects of the social contribution reductions carried out. These mainly concern a general reduction of one percentage point beginning in 2009 and selective reductions for young people. In its calculations the Ministry comes to the same conclusion that we did in previous reports, namely that the employment effects are small.[286] According to the Ministry of Finance calculation, the cut in the social contributions does not have any effect on equilibrium unemployment and increases potential employment by only 0.2 per cent. The small effects are due to the

[285] But the reductions in the social contributions are likely to have increased wages. Any estimate of the total effects of the Government' s wage policy must also take this into consideration. This is discussed in Section 7.1.5.
[286] Fiscal Policy Council (2009a), Section 7.1.

expectation that the reduction in the social contributions will be shifted on to wages. The employment effect thus arises only because the wage increase is assumed to increase the labour supply.

There is a discussion in the analytical background report about whether the estimates of the employment effects of the social contributions for young people may be too conservative.[287] On the one hand, the labour supply is more sensitive for young people than for older workers; on the other hand, frictions in wage formation may mean that the contributions are not fully shifted on to wages. In our opinion, there may actually be effects of this kind. But it is still fair to conclude that the lower social contributions for young people are not an effective way of increasing employment.

7.1.6 The overall effect on wages

In the Ministry of Finance's background report, there is an attempt made to estimate the overall effects of the labour market reforms on wages.[288] The estimate is also repeated in the Spring Fiscal Policy Bill.[289] The Ministry's conclusion is that the earned income tax credit and the unemployment insurance reforms reduce real wages before tax by 1.1 per cent and 0.5 per cent respectively up to 2015. At the same time, the reduced social contributions are estimated to increase real wages by about as much so that overall, the measures would not affect real wages before tax. The earned income tax credit is expected at the same time to increase real wages *after* tax by 6.1 per cent.

According to Ministry of Finance estimates, the earned income tax credit would thus provide a very favourable 'exchange ratio' between the after-tax wage and before-tax wage: an increase in wages after tax of 6.1 per cent 'costs' only 1.1 per cent in the form of lower wages before tax. It is difficult to judge how plausible these estimates are. The results described may arise for several reasons: (i) the tax cuts associated with the earned income tax credit exert a small *direct* downward pressure on wages (at a given employment level), (ii) lower before-tax wages have a significant impact on job creation, or (iii) higher employment exerts a strong upward pressure on wages. Explanation (i) does not appear to be consistent with the results

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[287] Ministry of Finance (2011b), Chapter 9.
[288] Ibid, Section 3.2.2.
[289] The 2011 Spring Fiscal Policy Bill, Section 4.4.

referred to above in Bennmarker et al. (2011) which point to significant direct downward pressure on wages.

The Ministry of Finance estimates of the wage effects have been made with the help of the National Institute of Economic Research (NIER) KIMOD model, which is a macro model of the general equilibrium type with search and matching frictions in the labour market One major problem is that it is difficult to know if the estimated wage effects are consistent with the estimates made of the employment effects, since these are not made with the help of the same model but have been estimated in other ways (see Sections 7.1.1-7.1.3). This makes it difficult to assess how large the effects on wages should be in order to achieve the employment effects estimated by the Government.

The above discussion underlines once again the need to make all the estimates of the effects of the labour market reforms within the framework of an integrated general equilibrium model. Only then is it possible to determine whether different estimated effects are likely to be consistent with each other. We strongly recommend that the Ministry of Finance be more systematic in using such a model for consistent estimates of the effects of various employment policy measures. This would be an excellent complement to the analytical methods currently used.

7.1.7 Conclusions on the Government's estimates

Our overall assessment of the Government's analysis of the effects of the labour market reforms and the long-term employment trends is that the conclusions are not unreasonable. The analysis does have support in the research literature. But there is also considerable uncertainty due to the broad range of results found in the empirical research. It is also due to the Ministry of Finance's use of different models to assess different aspects of employment policy. This makes it difficult to determine whether the different sub-results summed actually add up. This is particularly true of the employment policy's effects on wages.

The uncertainty is particularly acute when it concerns how long it might take before the reforms take full effect. Here, existing research provides very little guidance. The NIER's estimate of the reforms' long-term employment effects is less optimistic than the

Government's. The great uncertainty about how potential employment and equilibrium unemployment will develop is – as discussed in Section 2.1.3 – a strong argument for making conservative estimates of the future scope for reform which can be used for tax cuts or spending increases.

7.1.8 Another earned income tax credit?

The Spring Fiscal Policy Bill announced a fifth step in the earned income tax credit. A special tax memorandum spelled out the design contemplated for this credit.[290] The assumed cost is SEK 12 billion. Under the design described, there would be an increase in the earned income tax credit of SEK 550 for a worker with SEK 100 000 a year in earned income. A worker with SEK 200 000 annually in earned income would receive an increase of about SEK 1 800. Workers with more than 8.3 base amounts in annual earned income (about SEK 365 000) would receive an increase of about SEK 4 400.

The tax memorandum includes estimates of the labour market effects.[291] But one problem is that these estimates discuss the total effects of both the earned income tax credit described and an increase in the lower threshold for the state income tax (from SEK 383 000 to SEK 415 000). The total long-term effects are estimated to be a 0.3 per cent increase in employment, a 0.5 per cent increase in the total number of hours worked and a 0.1 per cent reduction in unemployment.

A key issue is whether further earned income tax credits have decreasing returns, i.e. whether the employment increases become smaller and smaller each time the credit is expanded. In autumn 2010 the Ministry of Finance published a report that discusses this (Finansdepartementet 2010b). The Ministry's effort in analysing this issue is welcome. The Ministry's conclusion is that there is not any decreasing return from further earned income tax credits of approximately SEK 20-25 billion (compared with existing credits). The calculations are based on the microsimulation models discussed in Section 7.1.1 and thus capture only the supply effects. This is a limitation. At the same time, more general estimates which also take

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[290] Finansdepartementet (2011c).
[291] Ministry of Finance (2011c), Table 3.7.

into account the effects on equilibrium unemployment cannot be made with enough precision to clarify the issue.

The Ministry of Finance's conclusion that more earned income tax credits can be introduced without any decreasing returns may very well be right.[292] Sooner or later there must certainly be diminishing returns: if a large enough credit is introduced that all who can work are already doing so, then the employment effects of any further credit would of course be null. But there may be a broad interval where further credits have unchanged or even increasing returns. Whether or not this is the case depends – in an analysis of individuals' decisions on labour force participation – on how reservation wages (the lowest wage required in order for people to want to work) are distributed across the population. This is in turn explained by individual preferences, economic resources, productivity, and so on. Little is known about this. But a more detailed presentation of how employment changes in various groups, for example, women, men, young people, older people and immigrants, would make it easier to judge the Ministry of Finance's analyses on this point.

One factor that should be taken into consideration is that an increase in the earned income tax credit for the working-age population may not be possible without additional tax cuts. There has been a debate about whether pensions should be viewed as deferred wages and therefore not taxed at a higher rate than earned income for the sake of fairness. The tax cuts for people over 65 implemented from 2009-2011 may have partly been taken in response to this debate. The Spring Fiscal Policy Bill and the tax memorandum have also announced that the special basic allowance for people over 65 is to be increased when a fifth step in the earned income tax credit is introduced.

If the earned income tax credit also leads to tax cuts for pensioners, the *self-financing rate,* i.e. the share of the earned income tax credit that pays for itself because employment, and thus the tax base, increase, will be *overestimated* if they are not taken into account.[293] The Ministry of Finance (Finansdepartementet 2010b)

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[292] The Swedish National Audit Office (Riksrevisionen 2009) reviewed the earlier steps in the earned income tax credits and did not find any diminishing return either.

[293] See Fiscal Policy Council (2010), Section 7.1, for a discussion of how the labour supply among older people can be affected by these tax reductions. See also Section 8.5 below.

calculates a self-financing rate of about 30 per cent for further steps in the earned income tax credit. A very rough estimate suggests that according to these calculations, the self-financing rate would decline by around five percentage points, to about 25 per cent, if any additional earned income tax credit were to be accompanied by equally large tax cuts for pensioners.[294]

The tax memorandum describes a self-financing rate for a combined fifth earned income tax credit and higher threshold for the state income tax of 25 per cent.[295] The total cost of the earned income tax credit and the higher income threshold is SEK 15 billion. According to the Ministry of Finance calculation, this cost is offset in the long run by the SEK 3.8 billion increase in tax revenue from the increase in hours worked. If the tax cut announced for pensioners (at a cost of SEK 2.3 billion) is seen as a political precondition for the expanded earned income tax credit, the self-financing rate (for the combined additional earned income tax credit and the reduction in the state tax) is instead $3.8/(15 + 2.3) = 22$ per cent.

Considering the key policy role played by the earned income tax credit, it is regrettable that the self-financing rate for the credit is not reported separately. Thus the Ministry of Finance does not provide all the relevant information for taking a position on an expansion of the earned income tax credit. According to the Ministry (2010b), the self-financing rate for an increase in the lower income threshold for state tax is higher than the additional earned income tax credit. It is thus likely that the self-financing rate for the fifth step alone in the earned income tax credit is, according to the Government's method of calculating it, less than the stated 25 per cent of the two changes combined. Taking into account our arguments about the impact of the tax on pensioners, the self-financing rate will be lower than the 22 per cent that we indicated above.

It is difficult to evaluate the desirability of additional earned income tax credits based on estimates of whether they are likely to be

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[294] In 2009 pension payments were equivalent to about 17 per cent of the payroll (SEK 222 billion compared with SEK 1 304 billion). Assume that an additional earned income tax credit costing SEK 25 billion (for a given number of hours worked) is implemented. Under the Ministry of Finance estimate of a self-financing rate of 30 per cent, an increase in the number of hours worked would pay for SEK 7.5 billion of this SEK 25 billion. If pensioners are to receive a tax reduction as a percentage of their pension income that is as large as wage earners' reduction as a percentage of their earned income, the tax cut for pensioners must come to $0.17 \times 25 = $ SEK 4.25 billion. In that case the self-financing rate decreases to $7.5/(25 + 4.25) = 25.6$ per cent.

[295] Finansdepartementet (2011c), p. 38.

less (or more) effective than previous credits. An equally important basis for forming an opinion is how to value the reduction of the effective insurance rate (the after-tax replacement rate) offered to someone who becomes unemployed compared to the value of further reductions in unemployment. This is a political issue. But it is reasonable to think that the perceived cost of further earned income tax credits, in the form of lower effective insurance rates in the event of unemployment will rise as the earned income tax credit rises. Similarly, the perceived social benefit experienced in the form of lower unemployment is expected to decline the lower one believes unemployment to be. The arguments for further earned income tax credits thus become weaker as more credits are introduced, even if the credits would not lead to decreasing returns to employment.

7.2 Unemployment insurance

In the past four years, there have been major changes in unemployment insurance. Most have strengthened the incentives for high employment. But the reforms have also created new problems. Further changes are therefore needed. These changes should be analysed within the framework of the sitting cross-party inquiry into social insurance. Our discussion below concerns four points:

- Funding
- Mandatory insurance
- Benefit level
- Cyclically dependent insurance

7.2.1 Funding

Unemployment insurance has two parts: the basic benefit and the income-related benefit. All unemployed people who meet certain minimum requirements on previous work (the work condition) and the requirement of having a will to work (the basic condition) are entitled to the basic benefit. Income-related benefits also require membership in an unemployment insurance fund. There are currently - after a series of mergers - 32 such funds (see Table 7.3). All except the state-run *Alfa-kassan* have union ties.

Table 7.3 Unemployment insurance fund membership fees per month, SEK

	2006	2007	2008	2009	2010	2011
Unemployment Insurance Fund for Graduates, AEA	94	240	170	140	90	90
Alfa Unemployment Insurance Fund	115	366	365	305	410	297
Unemployment Insurance Fund for Service and Communications Employees	122	367	358	211	211	243
Petrol Retailers´ Unemployment Insurance Fund	102	355	361	351	296	295
Building Workers´ Unemployment Insurance Fund	118	381	374	311	430	320
Electricians' Unemployment Insurance Fund	110	326	275	155	180	105
Pharmacy Employees' Unemployment Insurance Fund	100	331	331	225	167	177
Building Maintenance Workers' Unemployment Insurance Fund	105	366	366	340	340	310
Financial and Insurance Employees' Unemployment Insurance Fund	96	244	184	118	90	90
GS Unemployment Insurance Fund				325	420	220
Dockworkers' Unemployment Insurance Fund	112	363	363	280	420	325
Commercial Employees' Unemployment Insurance Fund	117	368	367	307	337	282
Hotel and Restaurant Workers' Unemployment Insurance Fund	113	377	377	405	440	385
Industrial and Metal Workers´ Unemployment Insurance Fund		356	347	226	407	187
Journalists' Unemployment Insurance Fund	110	352	353	205	190	150
Municipal Workers' Unemployment Insurance Fund	118	358	355	238	232	160
Management Staff's Unemployment Insurance Fund	103	336	327	198	120	120
Food Workers' Unemployment Insurance Fund	114	381	381	309	319	309
Teachers' Unemployment Insurance Fund	111	269	186	156	108	108
Musicians' Unemployment Insurance Fund	133	433	433	433	433	444
Pulp and Paper Workers' Unemployment Insurance Fund	115	350	365	239	239	189
Forestry and Agricultural Employees' Unemployment Insurance Fund	111	356	356	231	295	280
Local Government Officers' (SKTF) Unemployment Insurance Fund	114	346	333	200	139	129
Unemployment Insurance Fund for Entrepreneurs	98	331	331	181	181	130
ST's Unemployment Insurance Fund	99	330	330	188	143	143
Commercial and Employers' Unemployment Insurance Fund	107	359	362	348	298	298
Swedish Workers' Unemployment Insurance Fund	105	378	378	365	415	390
Swedish Fishermen's Unemployment Insurance Fund	128	422	433	433	433	433
Salesmen's Unemployment Insurance Fund	135	376	377	377	265	265
Theatre Workers' Unemployment Insurance Fund	124	400	410	430	437	417
Transport Workers' Unemployment Insurance Fund	126	376	376	296	326	326
The Union's Unemployment Insurance Fund			340	216	237	179
Weighted average	129	328	309	219	234	174

Note: The shading shows that a fund has paid the maximum unemployment contribution to the central government at some point during that particular year. Over the period indicated, some funds have merged to form new funds. Therefore data are not given for all years for every fund.

Sources: Swedish Unemployment Insurance Board (IAF) and own calculations.

The income-related benefit from the unemployment insurance funds is financed through a combination of government grants and individual contributions from members. The Government has introduced differentiated individual contributions and the average contribution level has been increased. Under the current system, the central government collects an unemployment contribution from the unemployment insurance funds based on how high unemployment in the fund is. This fee is capped at SEK 300 per member per month, but as long as it remains below this ceiling, it will cover a third of the fund's unemployment compensation expenditures. Individual contributions are to cover both the unemployment contribution and a fund's administrative expenses.

Effects of the differentiation in contributions from a theoretical perspective

If an unemployment insurance fund is connected to a collective bargaining area, small wage increases there will lead to lower unemployment and thus individual contributions can be lowered. High wage increases that increase unemployment lead instead to higher contributions. In a system where wage negotiations are decentralised and unemployment insurance funds and collective bargaining areas overlap, differentiated contributions are likely to strengthen the incentives for wage moderation and thus for high employment.[296] Differentiated contributions may in that case be seen as a substitute for the social considerations that the social partners would have reason to have in more coordinated wage negotiations affecting the economy as a whole.

Differentiated individual contributions may also have other advantages. If higher unemployment in a sector leads to higher individual contributions there, it also strengthens the incentives for those who have a job to move to other sectors. This will reduce the risk of unemployment insurance becoming a permanent subsidy of sectors with high seasonal unemployment or recurrent spells of unemployment for other reasons. Finally, unemployment insurance funds' (and their members') interest in curbing abuse and helping the unemployed actually return to work will be greater if the unemployment rate in each fund affects their individual contributions. But at issue is

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[296] In the theoretical research, this has been analysed successively by Holmlund and Lundborg (1988, 1989, 1999), Calmfors (1995) and Lindblad (2010), for example. Calmfors (1993a,b) and Calmfors and Herin (1993) are more accessible discussions.

how important such effects are, as it is the Public Employment Service that is primarily responsible for monitoring that the unemployed are looking for work and has resources at its disposal to assist them.

Problems with funding reforms

Meanwhile the financial reforms have created new problems. Differentiation has led to an increase in unemployment insurance funds' average contribution (see Table 7.3). Without such an increase, differentiation would mean that the funds with the lowest unemployment, instead of collecting fees from their members, would pay them a grant funded by the central government. The increases in membership fees in 2007 led to a sharp drop in membership in the unemployment insurance funds in 2007/08 (see Figure 7.2).

Figure 7.2 Membership trends in the unemployment insurance funds
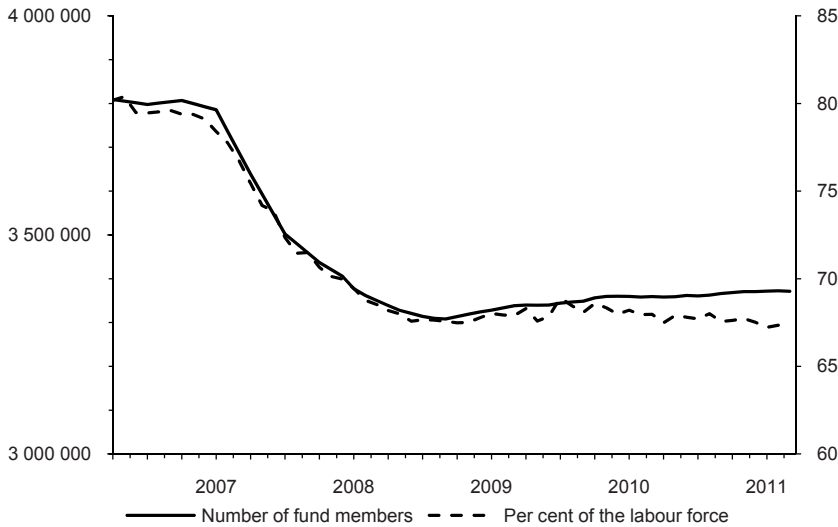
Note: The solid line shows the number of members in all the insurance funds (left axis). The dashed line shows the number of members as a percentage of the labour force (right axis).
Sources: IAF, Statistics Sweden and own calculations.

In 2008/09 the fees that unemployment insurance funds pay to the central government were lowered, with the result that the average membership fee has decreased again. This - combined with a higher risk of unemployment in the downturn that strengthened workers' incentives to have income-related unemployment insurance - has led to some return flow to the unemployment insurance funds in 2009/10. But for the most part, the previous membership losses persist. Thus far fewer than before are entitled to income-related unemployment benefits and fewer contribute to the financing of the unemployment insurance funds.

Furthermore, the increase in the average unemployment insurance contribution - paid only by the employed - reduces the earned income tax credit's effect on the return to work. Lastly, the higher fees in funds with high unemployment contribute to a more uneven income distribution, as there is a negative correlation between income and unemployment risk (see Figure 7.3).

Figure 7.3 Average wage and unemployment in the unemployment insurance funds

Note: The figure shows unemployment and the average monthly income for benefit recipients in the various funds in September 2010.
Sources: IAF and the Public Employment Service.

The disadvantages outweigh the advantages

There is reason to ask whether the benefits of the differentiated contributions actually do outweigh the disadvantages. There are a number of reasons why it is unlikely that the differentiation would have the desired effects on wage formation:

1. If the incentives for wage moderation in a decentralised bargaining system are to be influenced in the intended manner, there has to be overlap between unemployment insurance funds and trade unions. If an unemployment insurance fund covers several different unions, wages in each collective bargaining area have little effect on unemployment in the fund, and thus on the contribution, which weakens the incentives' effects. The situation will be similar to a system of decentralised bargaining and unemployment insurance without differentiated contributions, i.e. a situation where the individual union's actions have little effect on the common contribution. In Box 7.2 we have attempted an analysis of the extent of the overlap between unemployment insurance funds and collective bargaining areas.[297] With the measure used, the extent of the overlap is about 2/3 (complete overlap between funds and unions would give the coefficient 1).

2. In addition, some collective agreements in recent years have not specified any wage increase. Instead increases are settled in local negotiations between employers and local unions at each workplace or in individual negotiations between employers and individual employees. Of the 82 agreements reached that the National Mediation Office reports for 2010, 13 were constructed in this way and covered eight per cent of the workers concerned.[298] Since each pay decision under these conditions has only an insignificant effect on the total wage level for an unemployment insurance fund's members, and thus on unemployment in that fund, the differentiated fees in this case will mean very little for wage formation.

3. The unemployment insurance funds are responsible for providing unemployment benefits for a maximum of 300 days

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[297] Moreover, it is reasonable to think that the extent of the overlap may be affected by how unemployment insurance contributions develop. In many cases workers can choose which fund they want to belong to.

[298] National Mediation Office (2011), Appendix 2.

(450 for parents with dependent children). The unemployed are then transferred to the job and development guarantee, where they instead receive activity support from the Swedish Social Insurance Administration. The paradoxical consequence is that persistent high unemployment in the occupations covered by a fund may cause the number of unemployed with benefits paid by the fund to fall at the same pace that the long-term unemployed leave the insurance for the job and development guarantee and the individual contribution can therefore be lowered. The Industrial and Metal Workers' Unemployment Insurance Fund reduction in the contribution from 1 January 2011 is one such example.[299] This may rather create perverse incentives for wage formation, since persistent high wages that lead to long-term unemployment reduce unemployment insurance contributions. This is a fundamental design flaw in the system of differentiated contributions, since wage formation is likely to affect unemployment, particularly in the long run.

4. To the extent that there is informal coordination of collective bargaining by various trade unions, they are likely to weigh the consequences of their actions on total unemployment in the economy. Parties acting jointly must expect that their collective behaviour will have consequences for the costs of unemployment, which ultimately must be financed jointly even without differentiation of individual contributions (through taxes or a uniform unemployment insurance fund contribution). If so, differentiated individual contributions will not help to further strengthen the incentives for wage moderation. It is difficult to gauge the degree of coordination in the latest round of wage negotiations accurately, but it has been significant on the part of both wage earners and employers.

5. Table 7.3 shows several cases in which the unemployment insurance funds were at the ceiling of the unemployment

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[299] The overall proportion of openly unemployed and participants in labour market programmes with activity support decreased by only about five per cent between June 2010 and January 2011 for the Industrial and Metal Workers´ Unemployment Insurance Fund, while the contribution was reduced by more than half. The GS, Building Workers´, Pulp and Paper Workers', and Forestry and Agricultural Employees' Unemployment Insurance Funds and the Unemployment Insurance Fund for Service and Communications Employees as well as the Unemployment Insurance Fund for Entrepreneurs and the Alfa Unemployment Insurance Fund are the other unemployment insurance funds which were able to lower contributions despite continued high unemployment in the same period.

contribution payable to the central government. Thus the incentive effect on wage formation will be eroded, since at the very least, limited changes in unemployment will then not affect individual contributions.

The conclusion is that the differentiation of unemployment insurance contributions carried out is unlikely to produce any significant gains from the perspectives of wage formation and employment. A study by the Ministry of Finance comes to the same conclusion.[300] If a system of voluntary unemployment insurance funds is kept, the system of differentiated individual contributions should therefore in our opinion be scrapped. This could allow a reduction in the average unemployment insurance fee, which may create the conditions whereby fund membership will again increase. The Long-Term Survey (2011) comes to similar conclusions.

The unemployment insurance financing reform is an example of how a policy based on imperfect theoretical models may have unwanted consequences. A number of analyses using theoretical modelling have indicated that differentiated individual contributions may lead to wage moderation. But these models have not taken into account that the number of members with voluntary unemployment insurance depends on the membership contribution. The models have also been predicated on a perfect overlap between funds and unions and on the funds also having responsibility for the long-term unemployeds' benefits. In reality, the conditions differ substantially from those assumed in these analyses.

Box 7.2 The overlap between unemployment insurance funds and unions

The intent of the differentiation in the unemployment contributions is to strengthen the incentives for wage moderation. If an unemployment insurance fund were to insure the members of only one union and the fund was financed solely by individual contributions, trade union members would have to bear the full cost of the increased spending on unemployment benefits that would result if negotiated wage increases lead to higher unemployment in the fund. In conventional economic terminology, the higher cost of unemployment will then be completely *internalised*.

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[300] Ministry of Finance (2011b).

In reality, the funds and unions do not completely overlap. If a fund insures members in several trade unions, the internalisation effects and thus the incentives for restraint that the differentiated contributions are intended to achieve are weakened because members in other trade unions also will then have to bear some of the costs when members of a particular union become unemployed. It is therefore desirable to measure the extent of the overlap between the funds and unions.

We have attempted to calculate an *overlap coefficient* for the economy as a whole. It measures the extent to which an individual trade union, *on average*, would internalise the cost of higher unemployment arising from excessive wage increases, *if* all the fund's expenditures, were financed by individual contributions. The overlap coefficient thus provides a measure of the value of differentiated contributions in the form of incentive effects on wage formation.

We first calculate an overlap coefficient for each unemployment insurance fund by summing the squares of each included union's percentage of fund members. We then add the coefficients for all the funds weighted by their share of all the fund members in the economy.

The calculation of the overlap coefficient for the economy can be illustrated with a few simple examples. Suppose there are two unemployment insurance funds in the economy, each of which insures half of the wage earners. If we denote the respective fund's shares of wage earners with K_1 and K_2, then:

$$K_1 = K_2 = \frac{1}{2}$$

The funds are assumed to have exactly the same number of members as each of their unions. We denote the respective union's share of the members in each fund as F_1 and F_2. The result is as follows:

$$F_1 = F_2 = 1$$

The overlap coefficient for the economy is now calculated as:

$$K_1 F_1{}^2 + K_2 F_2{}^2 = \frac{1}{2} \times 1^2 + \frac{1}{2} \times 1^2 = 1$$

The coefficient is thus 1 when one fund corresponds exactly to one union. The overlap – and the internalisation – is then total.

Suppose in the next example that the first fund still covers only one union, but the second fund covers two, one of which is double the size of the other. One union's members thus constitute 2/3 of the members of fund 2 and the other union's members 1/3. With notations corresponding to those in the first example, we thus have:

$$K_1 = \frac{1}{2} \quad K_2 = \frac{1}{2}$$

$$F_1 = 1 \quad F_{21} = \frac{2}{3} \quad F_{22} = \frac{1}{3}$$

The overlap coefficient will then be:

$$K_1 F_1{}^2 + K_2(F_{21}{}^2 + F_{22}{}^2) = \frac{1}{2} \times 1^2 + \frac{1}{2} \times \left(\left(\frac{2}{3}\right)^2 + \left(\frac{1}{3}\right)^2 \right) \approx 0{,}77$$

This can be interpreted as follows: In the first fund, the only union, which covers the whole fund, internalises the full impact of its actions. This gives an overlap coefficient (degree of internalisation) of $1^2 = 1$ for fund 1. In fund 2, the first union internalises 2/3 of the effect of its actions and the second union 1/3 of its actions. The average internalisation in fund 2 is therefore $(2/3)^2 + (1/3)^2 = 5/9 \approx 0.56$. The average degree of internalisation in the economy as a whole (the total overlap coefficient) is obtained by adding the degree of internalisation of the two funds weighted by their share of the whole economy. It falls as expected between the two funds' degrees of internalisation.

Finally in our last example, assume that the first fund covers ten equally large collective bargaining areas. Other assumptions are the same as in the preceding example. The overlap coefficient for the overall economy will then be:

$$\frac{1}{2} \times \left(\sum_1^{10} \left(\frac{1}{10}\right)^2 \right) + \frac{1}{2} \times \left(\left(\frac{2}{3}\right)^2 + \left(\frac{1}{3}\right)^2 \right) \approx 0{,}33$$

A calculation using actual data for the Swedish economy gives an overlap coefficient for the entire economy of about 2/3 (see Appendix 6). The implication is that every union would on average internalise about 2/3 of the effect of a wage change on the costs of increased unemployment benefits *if* the unemployment insurance

funds were to fully fund the benefits with individual contributions. It is the same internalisation as in our second example above.

At present the differentiated individual contributions are only responsible for up to a third of what each fund spends on unemployment benefits at the margin. The degree of internalisation according to our way of calculating it will then be only $(2/3)\times(1/3)=2/9$. A degree of internalisation this low is likely to have only small effects on wage formation.

Our calculation is a first attempt and aims mainly to illustrate a method. There are obvious sources of error. We lack information on individual fund members' trade union affiliation. Therefore, we have simply distributed fund members in various unions in proportion to their size when there has been a close link between funds and unions. But it has not been possible to take into account that individuals may belong to a fund other than the one associated with the union in which they are members. This tends to overestimate the overlap coefficient.

Our calculation has also been made under the assumption that the different agreements are not in fact decided in close coordination. Some such coordination takes place, but there is no easily accessible data on this. Taking this into account would give a higher overlap coefficient than in our calculation. But this does not strengthen the arguments for differentiated contributions: as discussed in Section 7.2.1, coordination between various collective bargaining areas also leads to an internalisation of the costs of unemployment in the absence of differentiated individual contributions.

7.2.2 Mandatory unemployment insurance

Mandatory income-related unemployment insurance would solve the problem whereby higher unemployment insurance contributions led to a decline in membership in the unemployment insurance funds. A mandatory system satisfies both the paternalistic desire that everyone – even those with a lack of foresight – have an income-related insurance and the desire that everyone (both those at little risk of unemployment and those who become unemployed and whom the public sector still has to support via other systems, for example, municipal welfare benefits) should help finance the insurance. Such

arguments have been used to justify making other social insurance schemes such as sickness insurance mandatory. In our view, these arguments are equally important for unemployment insurance. According to the 2011 Budget Bill, the Government is of the opinion that an obligatory insurance should be introduced.[301] This issue is currently being examined by the cross-party inquiry into social insurance.

High union density should not be an aim of the insurance

Previous proposals for mandatory unemployment insurance have sought to combine such insurance with a system preserving the union-linked unemployment insurance funds which are to be more advantageous to join than a state-run unemployment insurance fund.[302] The aim has been to promote union membership, which will benefit from a close link between trade unions and unemployment insurance funds.

Whether or not high union density is desirable is not a question economic research can answer. It is instead a political issue.[303] *In the event* that a government wants to promote union membership, it is not obvious that union-linked unemployment insurance is the most suitable instrument. An alternative might be to directly subsidise union membership. This would have the advantage of directly showing the Government´s assessment of the difference between the social and private return to union membership.[304] Unemployment insurance should be designed to provide as good a balance as possible between the objective of insuring workers against income loss in the event of unemployment and the objective of contributing to an efficient labour market. The greater the number of objectives

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[301] Budget Bill for 2011, p. 59.

[302] SOU 2008:54.

[303] On the one hand, some empirical studies suggest that higher union density drives up wages and thus leads to lower employment. On the other hand, there is empirical evidence that coordinated collective bargaining, which in turn presumably implies high union density, promotes wage moderation and thus employment (see, for example, EEAG 2004). The research has also indicated that trade unions, depending on how they act, can have both positive and negative effects on productivity growth (see, for example, Booth et al. 2001).

[304] Conventional welfare economics says that if a particular activity has positive *externalities*, i.e. social returns in excess of private returns for those who perform the activity in question, then the government should subsidise this activity to the extent of the difference between the social and private return. The research literature does not provide any answer about whether union membership has such positive externalities or whether the externalities are negative.

that the insurance is to promote, the more difficult achieving an appropriate balance of this kind will be.

Differentiated individual contributions are more advantageous under mandatory insurance

Mandatory unemployment insurance can be combined with differentiated individual contributions even in a system without union-affiliated funds. Differentiation could then even be made to better correspond to the collective bargaining areas and thus more conducive to wage moderation. We share the view of the Long-Term Survey (2011) that unemployment insurance liability for the unemployed should be extended in time so that the insurance can also finance benefits for the long-term unemployed who are transferred to the job and development guarantee (for example, in its initial stages).

If a system of differentiated individual contributions is retained, there are reasons for avoiding an increase in the *average* contribution rate when unemployment increases since it weakens the automatic stabilisers. The important thing is that the *relative* contributions in different parts of the economy reflect unemployment if in a decentralised bargaining system the financing of unemployment insurance is to be used to strengthen the incentives for wage moderation. With an approach like this, the average contribution rate is independent of unemployment in the economy as a whole, while contributions in various collective bargaining areas may vary around this rate depending on the unemployment in the area. In practice the Government has already introduced such a system in the form of the 2008/09 reductions in the financing charge paid by the unemployment insurance funds. But there may be arguments for constructing the system so that increases in the average unemployment insurance contribution in downturns are *automatically* avoided and do not require discretionary measures.

Our conclusion is that differentiated unemployment insurance contributions should be scrapped if the current system of voluntary membership in the funds continues. But we see strong arguments for mandatory income-related unemployment insurance. The arguments for differentiated contributions are stronger for this kind of system than for the current system. But we are not convinced that the advantages of a differentiated contribution even with mandatory

insurance are sufficiently great to compensate for the administrative complications. This is closely connected to the manner in which collective bargaining will be conducted. Both with a high level of coordination and with a large element of local and individual wage bargaining, the value of differentiated contributions is lower than it would otherwise be.

7.2.3 Benefit levels

The unemployment insurance benefit level is a matter of judgement. It involves weighing the value of giving the wage earner good insurance in the event of a loss of income against the risk that generous insurance benefits will weaken the incentives to rapidly return to work. There is extensive empirical research supporting the argument that a more generous benefit leads to longer unemployment spells.[305]

The condition for an optimal unemployment benefit level can theoretically be formulated as follows: the value of a further increase in the benefit level in the form of higher incomes for the unemployed should be balanced by the welfare losses of this increase in the form of higher unemployment. If all workers are assigned the same weight, the value of a further increase in the benefit level will be equal to the number of unemployed multiplied by the difference between the utility increase for the unemployed and the utility loss incurred by the employed, who– sooner or later – have to pay for the increase in the form of higher taxes/contributions. The welfare loss of an additional increase in the benefit level is equal to the increase in the resulting unemployment multiplied by the utility difference between being employed and being unemployed.[306]

Declining unemployment benefits over time

It is a well-established research finding that unemployment benefits which decline as the unemployment period lengthens are better than benefits that are constant over time (given that the average benefit is

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[305] This is summarised in Tatsiramos and van Ours (2011), for example.
[306] See Andersen and Svarer (2011).

the same in both cases).[307] A declining benefit profile provides a more favourable balance between insurance and the incentives to get a job. A high benefit level for short-term unemployment helps maintain incomes, and hence consumption, for the vast majority of unemployed who find a new job relatively quickly. Simultaneously, the declining replacement rate over time creates stronger incentives for the unemployed to find a new job than would otherwise be the case because they can thereby once again qualify for a higher benefit for a possible new period of unemployment.

Unemployment insurance currently has a declining profile. In the initial 200 benefit days, the replacement rate is 80 per cent for those who do not exceed the ceiling for the highest daily rate (SEK 680 per day). During the following 100 days (250 days for people with dependent children), the benefit falls to 70 per cent. After that, the unemployed are transferred to the job and development guarantee with an activity grant of 65 per cent of their previous earnings. As shown in Table 7.4, however, only a minority of the unemployed – 13 per cent – if they are unemployed long enough, experience this reduction. Because of the ceiling on unemployment benefits, 16 per cent of the unemployed get a smaller decrease. Other groups do not get any decrease at all. There are several reasons for this. First, about 51 per cent of the unemployed do not receive any unemployment benefit (almost two thirds of these get no support at all from the public sector and about a third instead get welfare benefits from their municipality). Second, 5 per cent of the unemployed get only the unemployment insurance's basic benefit of SEK 320 a day. Third, 2 per cent of the unemployed do not experience any decrease because with an 80 per cent replacement rate, they too fall under the basic benefit, which anyone who is unemployed always has the right to. Fourth, because of the current ceiling for the daily unemployment insurance rate, 14 per cent of the unemployed exceed it even with the 65 per cent activity grant. A higher ceiling would make a reduction in the unemployment benefit possible for the unemployed who previously had high incomes. This has been proposed in the Long-Term Survey (2011).[308]

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[307] See, for example, Shavell and Weiss (1979) and Fredriksson and Holmlund (2001). Fredriksson and Holmlund (2006) and Tatsiramos and van Ours (2011) have overviews of the research on the time profile of unemployment insurance benefits.

[308] The conclusion that unemployment benefits should decrease over time is based on the premise that the unemployed do not have sufficient savings or sufficient opportunity to borrow in order to maintain

Table 7.4 Compensation profile for open unemployment 2009, per cent

	Percentage of the total number of openly unemployed
Municipal welfare benefits	18
Unemployment benefits	49
of which	
Full decrease	*13*
*No decrease because wages are too **high***	*14*
*No decrease because wages are too **low***	*2*
Some decrease	*16*
Basic allowance, not income-based	*5*
No support	33

Note: Open unemployment is defined as jobseekers who are registered with a public employment service, are without work, are actively looking for work and can immediately start work and are not participating in a labour market programme. The division into various groups is based on the benefit-based income that is the unemployed person's average wage in the twelve months preceding unemployment. The fact that 13 cent experience the full decrease should be construed as the proportion of the openly unemployed who either have received the full decrease from 80-70-65 per cent of previous earned income *or* would receive it if they are unemployed long enough. The other figures in the table should be interpreted in a similar way.
Sources: The Public Employment Service, IAF, the National Board of Health and Welfare and own calculations.

Basic benefit and ceiling

Figures 7.4 and 7.5 show how the basic benefit and ceiling (highest daily rate) have developed. Both amounts have been nominally unchanged since 2002. Consequently, both have declined 10 per cent in real terms between 2002 and 2010. In relation to the average wage, the ceiling has declined from 26 to 20 per cent and the basic benefit from 55 to 43 per cent. Measured as a percentage of the average wage, the basic benefit is only slightly lower than the average for the period from 1980. In contrast, the maximum possible daily rate as a percentage of the average wage is very low compared to the past. Currently 50 per cent of benefit recipients exceed the ceiling compared to 36 per cent in 2008.[309]

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a desired level of consumption (Pavoni 2007, Chetty, 2008 and Shima and Werning 2008). This premise is probably less true of high-income earners than of low-income earners.

[309] The data refer to the annual average for 2010 and 2008 respectively. One complication is that many workers have supplementary union unemployment insurance or are insured under a collective agreement. But there are no good statistics available on these. In our 2010 report, we sought to provide a picture of this supplementary insurance based on a survey we initiated (Fiscal Policy Council 2010, Section 11.3). Our conclusion was that many unemployed do not seem to use the supplementary insurance they have the right to draw benefits from.

Figure 7.4 Daily basic unemployment benefit
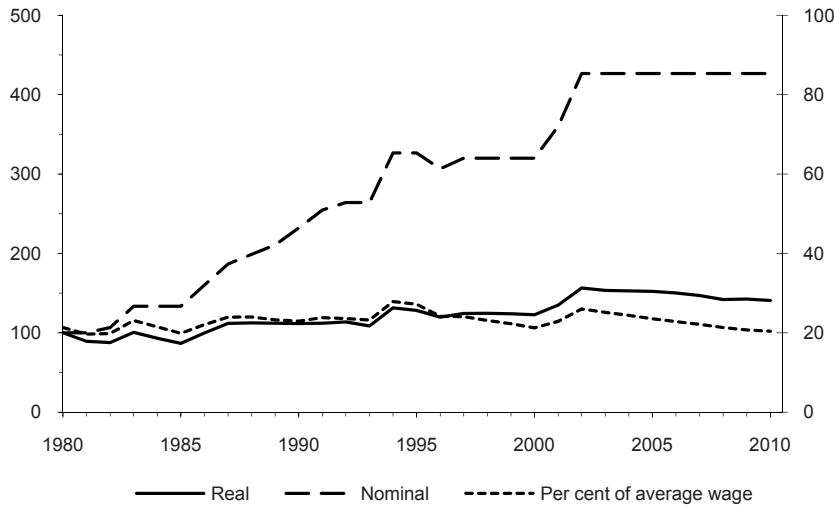
Note: Left axis shows index (1980 = 100) for the nominal and real basic benefit respectively. The real basic benefit has been calculated using the CPI as deflator. The right axis shows the basic benefit as a percentage of the average wage.
Sources: IAF and Statistics Sweden.

Figure 7.5 Maximum daily unemployment benefit
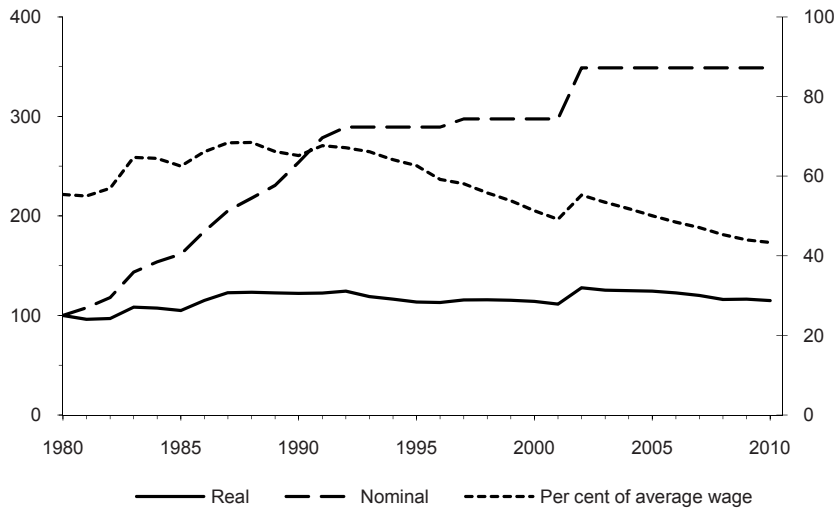
Note: Left axis (index 1980 = 100) shows how the maximum daily rate has developed in nominal and real terms respectively. The real ceiling has been calculated using the CPI as deflator. The right axis shows the maximum daily rate as a percentage of the average wage.
Sources: IAF and Statistics Sweden.

In our view it is inappropriate to establish a fixed ceiling and basic benefit in nominal terms for long periods and then let wage growth gradually dilute the replacement rates. It would be better to specify principles on how the ceiling and the basic benefit are to relate to the average wage level (alternatively, there could be guidelines on how many people should be allowed to exceed the ceiling). These guidelines could possibly also take the cyclical situation into account (see Section 7.2.4).

The fact that so many unemployed currently do not have unemployment insurance benefits, but instead collect municipal welfare benefits may have several adverse effects on the way in which the labour market functions. Welfare benefits are means tested. This creates high marginal effects that weaken the unemployeds' incentives to take temporary jobs. Municipalities are also probably worse than the Public Employment Service in both monitoring the unemployeds' search activity and in assisting them. Therefore, we welcome the proposal by the Long-Term Survey (2011) that even the unemployed who have not met the work condition will be able to receive the basic benefit in the unemployment insurance after a certain qualifying period, given that they meet the requirement of participation in some form of labour market programme.

7.2.4 Cyclically dependent unemployment insurance

One issue that should be examined by the sitting cross-party inquiry into social insurance is the possibility of making unemployment benefits *cyclically dependent* so that they are higher in downturns than in upturns. In the United States and Canada, unemployment insurance has long been designed in this way. In our 2009 report there was an extensive analysis of cyclically dependent unemployment insurance.[310] There are two major arguments in favour of such a design.

1. Generous insurance is of greater value in a downturn than in an upturn as more people are unemployed (this follows from the discussion in the previous section that the value of an increase in the benefit level is equal to the number of unemployed multiplied by the utility increase for an unemployed person minus the utility reduction for an employed as a result of the financing cost

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[310] See Fiscal Policy Council (2009a), Section 5.3.2.

incurred). It must also be said that the income lost in the event of unemployment in an upturn is generally limited because it is then usually possible to find a new job fairly quickly. A low benefit at that time therefore has less impact. But it does play a greater role in a downturn when it takes a long time to find a job.

2. The second argument is that generous insurance probably has little effect on unemployment in a downturn because the individual has few possibilities of influencing how long it takes to find a job when there are few job vacancies. But in an upturn with many vacancies, the individual's search behaviour plays a greater role.

There are no extensive studies on the consequences of cyclically dependent unemployment insurance. But a series of papers by Andersen and Svarer (2010, 2011) provides support for the theory that a cyclically dependent benefit would offer better insurance protection for workers than a constant benefit would without increasing unemployment over the business cycle. This is because a higher unemployment benefit compensates those who become unemployed in a downturn for the larger utility loss they incur as it takes longer for them to find work than it does in an upturn. Andersens and Svarer's analysis indicates that average unemployment over a business cycle may even be lower with a cyclically dependent system as the decrease in unemployment in upturns (as a result of the less generous benefit then) is greater than the increase in downturns (as the result of the more generous benefit then). But according to their analysis, the swings in unemployment over a business cycle will be greater as will the costs of unemployment insurance. But the latter implies that unemployment insurance would work as an automatic stabiliser to a greater extent than it does now. This could in turn dampen the swings in unemployment from the demand side, which Andersen and Svarer do not take into account in their analyses.

Several elements of unemployment insurance could be made cyclically dependent. The basic benefit and the ceiling are obvious candidates. The time during which the 80 and 70 per cent replacement rates are in effect could also be varied.

Figure 7.6 Periods with unemployment benefits higher and lower than normal according to our example
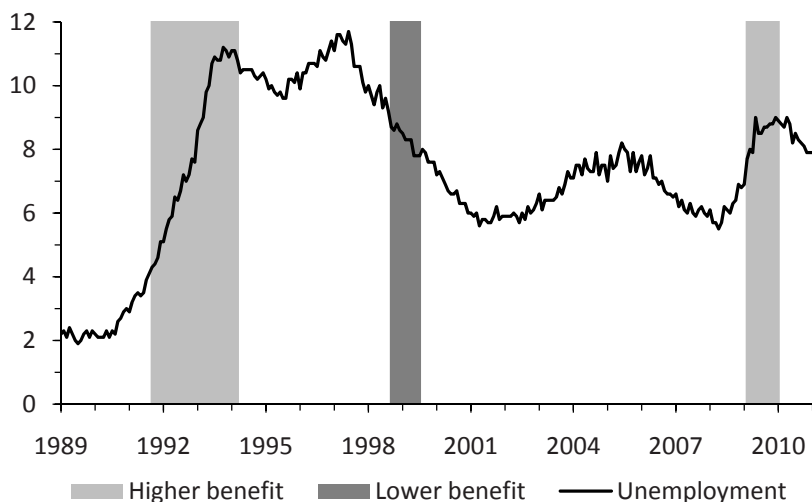
 Note: The figure shows the periods in which unemployment benefits would be raised above or reduced below a normal level with a rule whereby the benefit is adjusted relative to this level when unemployment deviates more than 1.5 percentage points from the average for the two preceding years. *Sources*: Statistics Sweden and own calculations.

Two objections are usually raised to cyclically dependent unemployment insurance:

1. The first objection is that it is easier to raise benefits than to lower them. If so, cyclically dependent insurance could lead to an increase in the average benefit level. This is an argument for making this type of insurance *rules-based* and not based on discretionary decisions, i.e. decisions on a case-by-case basis. A system with fixed rules would probably be a prerequisite for cyclically dependent unemployment insurance to function well.

2. The second objection is that the risk that temporary cyclical unemployment may turn into persistent structural unemployment may increase if the benefit is raised when unemployment jumps to a higher level.[311] The Long-Term Survey (2011) rejects a cyclically dependent unemployment benefit for this reason. How great a risk this is depends on how the rules are designed. In our opinion, a rule that the benefit must always be higher if unemployment exceeds a specific level would be inappropriate.

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[311] See also Tatsiramos and van Ours (2011) and Höglin (2011) respectively.

Instead a suitable rule could be designed whereby the benefit would be raised above a *normal level* if unemployment exceeds the average by, for example, 1.5 percentage points in the two preceding years (and lowered below the normal level if unemployment is 1.5 percentage points less than the average for the two preceding years). In that case, the benefit would automatically return to the normal level when the unemployment developments change direction. Figure 7.6 shows the periods during which unemployment benefits would have deviated from a normal level if these rules had existed (given that the unemployment rate then had evolved as it actually did). The benefit level would then have risen above the normal level during both the 1990s crisis and the recent recession; in about 1999, the level would instead have been reduced below the normal level. The changes in the benefit level could possibly instead be linked in a similar way to the number of job vacancies if it is desirable to further reduce the risk that changes in unemployment will lead to self-reinforcing effects.

Even with a cyclically dependent insurance that is rules-based, it may be more difficult to lower the benefit level in an upturn than to raise it in a downturn.[312] This suggests that the introduction of this type of insurance requires a broad political consensus. It may also be more appropriate to introduce a system like this in an upturn rather than in a downturn. This could be accomplished in the following way. The Government establishes long-term levels for the basic benefit and the ceiling in relation to the average wage level (replacement rates). Next the Government in an economic upturn begins keeping these replacement rates temporarily below the long-term levels. In the next economic downturn, the replacement rates are temporarily raised above the long-term benchmarks. These adjustments should be guided by rules that compare unemployment with the average, for example, over the previous two years as discussed above. In addition to this, the benefit periods with 80 or 70 per cent replacement rates for those who fall between the basic benefit and the ceiling could be shortened for those who are newly unemployed during an economic upturn and then extended in a downturn. These changes could also be based on how unemployment develops in relation to the previous average.

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[312] Long-Term Survey (2011).

8 Taxation

Since taking office in 2006, the Government has implemented a number of tax changes. The most important changes include the earned income tax credit and the tax credit for house services,[313] the reduction in employers' social contributions for particular groups, the change in the taxation of housing and the abolition of the wealth tax. According to the 2011 Spring Fiscal Policy Bill, the Government intends to continue lowering taxes by measures such as strengthening the earned income tax credit and reducing the VAT on restaurant and catering services. In earlier reports we have discussed the tax changes separately. Here we take a broader approach, discussing their consequences for the efficiency of the entire tax system.

Taxes create distortions in the economy by driving a wedge between the social return and the private return. Households' labour supply and savings behaviour, as well as corporate investment, are affected in a way that reduces social efficiency. The primary purpose of the tax system is to finance government expenditure as efficiently as possible. The tax system can also contribute to equalising income distribution, stabilising the economy in the event of cyclical swings and more efficient resource use.

These objectives may sometimes conflict with each other. There is a conflict between social efficiency and income redistribution in particular. Progressive income taxes may, for example, be desirable from an income distribution perspective, but at the same time may influence people to work less. The starting point for research is therefore that an appropriate tax structure should minimise social efficiency losses while achieving the desired income redistribution.

The theory of *optimal taxation* is a conceptual framework for analysing the trade-off between social efficiency and income redistribution. According to this theory, taxes should be differentiated in such a way that activities that are very sensitive to tax changes are taxed at a lower rate than other activities to minimise the distortionary effects. But such tax structures may be complicated, require detailed information about how the behaviour of households and businesses is affected by changes in taxation and involve difficult

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[313] 'House services' is a concept referring to repair, maintenance and improvement and household work. The following activities are included: repairs, maintenance, and improvements (RMI work) and cleaning, laundry, simpler gardening work and childcare and other care (household services).

demarcation problems. Moreover, sometimes no clear conclusions can be drawn from theory. In practice, a tax system based on the principles of *simplicity*, *transparency* and *uniformity* may be as efficient as a system guided by the theory of optimal taxation. But this theory may still serve as a useful reference point. Tax changes that both simplify the tax system and are in line with the theory of optimal taxation are likely to improve the tax system, whereas the opposite is true of changes that do not meet any of the above requirements. Most often it is necessary to weigh potential efficiency gains from differentiated taxes against simplicity.

Taxes may also be designed with the explicit purpose of changing the behaviour of individuals and businesses, and thereby affect how society's resources are used. Properly designed taxes on harmful emissions, for example, may make firms take the social costs of their production, in the form of damage to the environment, into account. Taxes on alcohol and tobacco are other examples of taxes that, at least to some extent, are supposed to correct for negative externalities. The higher prices resulting from these taxes are meant to reflect the increased social costs associated with alcohol and tobacco consumption.[314]

The subsequent discussion is organised as follows: first, there is a discussion of the current tax system and how it has changed since the major tax reform of 1990/91. Second, there is a more in-depth analysis of how different tax bases affect the efficiency in the tax system. Last, the changes in taxation in recent years are discussed from a combined efficiency and distribution perspective.

8.1 The tax reform of the century

The current tax system is in many respects the result of the major 1990/91 tax reform. It involved changes in all the more important taxes: income taxes, employers' social contributions, consumption taxes and the corporate and capital income taxes. The guiding principles of this radical tax reform – often called the tax reform of the century – were *uniformity* and *neutrality*.

Under the uniformity principle, incomes that are economically equivalent should be taxed in the same way, regardless of the form in

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[314] How to use taxes as a policy instrument is an important issue, but it would require too much space to discuss it in this report.

which they are received. The neutrality principle means that the options available to households and firms should be independent of taxation. For example, the tax system should not favour certain kinds of investment at the expense of others. Even if the reform did not strictly adhere to these principles, uniformity and neutrality increased substantially.

The tax system before the reform was criticised for being both inefficient and unfair. Differences in the taxation of income from different sources, many exceptions, deductibles and high marginal taxes resulted in large distortions. The highest marginal tax rate on earned income was 73 per cent in the late 1980s. This probably resulted in significant efficiency losses, as the distortions from high taxes increase more than proportionally with the tax rate. Other examples of distortions were asymmetries in the taxation of capital income, which encouraged incurring debt and investing in consumer durables at the expense of other forms of savings. The reform entailed a broadening of the tax bases, as income which had previously been exempted became taxable and the deductibles were reduced. Tax rates were also lowered. These measures reduced the efficiency losses.[315]

With the reform, a *dual income tax system* was introduced, in which capital income is taxed at a low, proportional rate, whereas earned income and transfer payments are taxed at a progressive rate. The argument for a low capital income tax is that it is levied on the nominal instead of the real return. The tax rate on capital income and corporate profits was set at 30 per cent. In order to achieve neutrality between investments in private housing and other investments, the real estate tax rate was set at 1.4 per cent of the taxable value (equivalent to 75 per cent of the market value). This means that regardless of whether the capital is invested in housing or another asset (for example, in the business sector), the return was taxed at about the same rate.

At that time, there was also a wealth tax of 1.5 per cent of that part of taxable wealth exceeding SEK 800 000. Inheritances and gifts had a tax rate of 10-45 per cent, depending on the size of the inheritance or gift and the donor's relationship to the recipient.

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[315] For an evaluation of the tax reform, see Agell et al. (1995).

The overall objective of the tax reform was to make the tax system more socially efficient without giving rise to unpalatable income distribution effects. Most analysts seem to think that the reform achieved this objective.[316] Another important aim was to achieve tax rules that are stable in the long run.

8.2. The current tax system

Even though a large part of the tax system introduced in 1991 still stands, there have been many changes. The hope of achieving a long-term stable tax system was soon frustrated. Following the tax reform, there were 75 changes in the tax rules during the first three years alone. Although many changes were of minor character, several changes implied significant departures from the intent of the tax reform. The pace of change since then has also been high, not least under the current Government. This is shown in Table 8.1, which shows the number of tax changes made since 1992 and 2007respectively in various areas.

Table 8.1 Tax changes

Tax change	1992-2011	2007-2011
Direct taxes on labour	126	27
Indirect taxes on labour	47	11
Taxes on capital, businesses	102	18
Taxes on capital, households	80	16
Consumption tax, VAT	30	3
Consumption tax, excise duties	144	37
Tax credits	10	3
Other	4	0
Total	**543**	**115**

Sources: The National Audit Office and the Ministry of Finance.

After the reform, the highest marginal tax on earned income averaged 51 per cent. But during the crisis in the 1990s, a higher tax rate on the highest incomes, the so called värnskatt, was introduced. Figure 8.1 shows the current marginal tax rates for different incomes. The highest marginal tax is 57 per cent on average.[317] For lower incomes, the earned income tax credit has substantially lowered

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[316] See, for example, SOU 1995:104 and Sørensen (2010).

[317] For incomes over SEK 395 600, there is a state tax of 20 per cent and for incomes over SEK 560 900, a further 5 per cent.

marginal taxes. For incomes in the interval SEK 14-60 thousand, the marginal tax rate is only 7 per cent and in the interval SEK 60-116 thousand, 21 per cent.

Figure 8.1 Marginal tax rates 2011
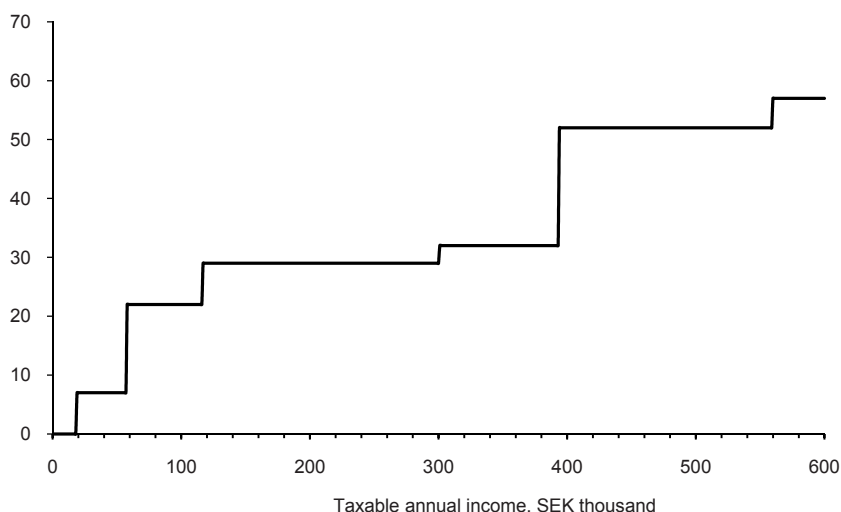
Note: It is assumed that all revenue is from gainful employment and that the local government tax is 31.55 per cent.
Sources: Skatteverket and own calculations.

Taxes on labour has also been lowered in recent years through the reduction in employers' contributions for selected groups (those under 26, those who have turned 65, the long-term unemployed, those on long-term sick leave and newly arrived immigrants), where the aim has been to increase their labour market competitiveness.

The taxation of savings and the return to shares have not been changed, but the corporate tax has been successively lowered and is currently 26.3 per cent. A significant departure from the principle of uniformity is the 2008 change in the real estate tax, which resulted in the replacement of the state real estate tax on housing by a municipal 'fee' which is currently 0.75 per cent of the taxable value or a maximum of SEK 6 387. This means that investment in housing is favoured over investment in other sectors such as the business sector.

The two types of income tax with a low proportional tax on capital incomes and a progressive tax on earned income necessitate

special rules for income that does not obviously fit in either category. For closely held corporations, this is handled by the so-called 3:12 rules. These rules were perceived from the beginning as complicated and unfair and have therefore been changed many times. The latest major changes, in 2006, were designed to simplify the system and enable a higher share of income to be taxed as capital.

There have also been major changes in the taxation of assets. The inheritance and gift tax was abolished in 2005 and the wealth tax in 2007.

One of the major changes in disharmony with the basic principles of the 1991 tax reform has been in the consumption tax. The uniform value-added tax of 25 per cent has been replaced by lower tax rates in a number of areas such as food, books, passenger transport and diverse tourist related activities. During the Government's previous term of office, tax relief was also brought in for the consumption of household services and according to the 2011 Budget Bill, the Government plans to halve the VAT on restaurant and catering services when there is scope for reform in the budget.

Table 8.2 lists some of the most important tax changes since.

Table 8.2 Selected changes in the tax system since 1991

Tax change	Year
Reduced VAT rate on food to 12 per cent. Already in 1992 the VAT on food, restaurants, and hotel services was reduced, but raised again in 1993.	1996
Reduced VAT rate on tourist-related activities such as hotels, camping, ski lifts, etc.	1992,1993
The 3:12 rules (rules for closely held companies) have been changed many times since 1991, most recently in 2009.	
Step-by-step increases in national pension contributions from 1993-1998, step-by-step compensating tax reductions from 2000-2006.	
Increased central government tax on high incomes by five percentage points.	1995
Abolition of inheritance and gift tax	2005
Abolition of wealth tax	2007
Earned income tax credit (tax reduction on earned income) in four steps	2007-2010
Tax reduction for household services	2007

RMI deduction (repair, maintenance and improvement)	2008
Increased earned income tax credit and reduced social contributions for people who have turned 65	2006-2009
First reduction of employer contributions for people 18-25 in 2007. Additional reduction in 2009, extended to people under 26.	2007, 2009
Reduction of employer contributions for people most detached from the labour market such as long-term unemployed, people on long-term sick leave and newly arrived immigrants.	2007, 2010
The real estate tax on housing was reduced in several steps in the 1990s by freezing taxable values and reducing tax rates. In 2009 the real estate tax on housing was abolished and was replaced by a municipal charge of 0.75 per cent of the taxable value or a maximum of SEK 6 382.	2009
The corporate tax has been lowered in several steps since 1991, when it was set at 30 per cent. The last reduction in 2009 was from 28 to 26.3 per cent.	2009
Reduced income tax for people aged 65 or older.	2009-2011

Sources: The National Audit Office (2010a) and Government Offices of Sweden.

8.3 Efficiency losses from taxation

Taxes cause efficiency losses because they drive a wedge between the social and private returns. With a tax on earned income, the individual receives a private monetary compensation for his or her labour input that is less than the output value created. Taxes on capital income make the investor's net return lower than the return to the investment. Since individuals and businesses react to prices *including* tax, while the social costs and benefits depend on prices *excluding* tax, tax wedges lead to the less efficient use of society's resources.

The amounts the public sector receives from a tax are only part of the social cost. Assume, for example, that the state brings in a tax that leads to higher prices for ice cream. Assume also that a person previously bought ice cream but now does without due to the higher price. Thus the price increase makes the person decide to spend his or her money in another way. Since this possibility also existed before the tax change (but then the person preferred to buy ice cream), the ice cream tax leads to lower utility for the person. Even though the person does not pay any tax, the ice cream tax causes a distortion that reduces the person's utility. This generates an extra cost in the form of too little ice cream consumption: the ice cream tax creates a *surplus burden.*

In principle, a tax's surplus burden for a person can be measured by asking that person how much they would be willing to pay not to have to pay the tax – in the above example, the ice cream tax. When the tax does not entirely displace consumption, the surplus burden is the difference between the amount the taxpayer is willing to pay not to have to pay the tax and the tax revenue for the state (which is only a transfer between taxpayers and the state).

The taxes' undesirable effects on social efficiency can also be seen in the effects on the labour supply. The gross wage earned by people in the market reflects the social value of their labour. With a tax on earned income, the individual receives less private monetary compensation for the labour input than the output value created. Since it is reasonable to assume that a person on the margin will choose between a job in the market and leisure, a tax makes leisure relatively more attractive and thus labour supply decreases. This effect is usually called the *substitution effect*. A tax's impact on household behaviour via the substitution effect leads to lower social efficiency.

A tax increase affects the labour supply not only because of its substitution effect, but also because the tax results in lower disposable income. If leisure is a normal good, i.e. something that people want to have more (less) of when their incomes increase (decrease), the reduction in disposable income implied in a tax increase will act to increase the labour supply. This *income effect* thus has the opposite effect on the labour supply to the substitution effect. The direction of the net effect is an empirical issue. Studies generally find that the substitution effect dominates.

The observed effects of tax changes on the labour supply cannot be construed as changes in social efficiency. Thus a tax that has little impact on economic decisions may create a large surplus burden, i.e. substantially reduce social efficiency. The reason is that a tax can have both a substitution and an income effect, while the surplus burden is *solely* due to the effect of the tax on behaviour because of the substitution effect. Estimating the effect of a tax change on social efficiency therefore requires information on how behaviour would be changed if taxpayers were at the same time *compensated* by another increase in income so that their utility is kept unchanged.

The social efficiency loss that occurs when people's behaviour is affected by a tax increase may, as discussed above, be measured as

the difference between the amount that would compensate taxpayers (so that they enjoy the same utility level as before the increase) and government net revenue from the increase. In a report for the Expert Group on Public Economics (ESO) in 2010, Peter Birch Sørensen estimated these costs for the most important taxes in Sweden.[318] The discussion below draws heavily on Sørensens analysis.

8.4 Different tax bases

In a discussion of how the tax system affects social efficiency, we are thus solely interested in changes in behaviour due to the substitution effect. In such an analysis, tax revenue is typically assumed to finance a transfer payment to taxpayers in the form of a lump sum, *a lump-sum transfer*. As evident from Section 8.3, it is important that the model take the *dynamic effects* into account, i.e. that tax changes may have indirect effects on tax revenue because of behavioural changes. To get an idea of the efficiency losses requires taking all the effects into account – both direct and indirect. Otherwise the consequences will be misjudged.

Sørensen (2010) estimates the social efficiency losses ensuing from the taxation of different tax bases. His model takes into account that Sweden is a small open economy with free capital movement. Thus the return to capital is decided by world markets. Labour is assumed to be immobile. The taxes considered concern earned income, consumption, corporate income and income from capital.

In the report, the effect on efficiency is measured by an estimate of the *self-financing rate* associated with a tax change where the taxpayer is compensated with a lump-sum transfer.[319] This measure is not the same as the Ministry of Finance's estimate of the self-financing rate in an analysis of measures such as income tax cuts. In that case, an estimate is made of how large a proportion of the direct tax loss is compensated for by increased tax revenue because more people are choosing to work and/or work more hours. These behavioural changes are due to both substitution and income effects. The Government's basis for these calculations is thus the consequences for the government budget, not social efficiency.

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[318] Sørensen (2010).
[319] See Box 8.1 for a description of the relation between the marginal surplus burden and the self-financing rate.

The assumption that tax revenue finances transfer payments that do not affect the relative price of various services is not without pitfalls. It may lead to errors since tax revenue is actually used for transfer payments and for financing services that may affect people's behaviour. If, for example, tax revenue from an income tax increase finances lower childcare fees, the adverse effects of the tax increase on the labour supply will be offset because it will be more profitable for parents to work.[320] The adverse effects of an income tax increase will be smaller (larger) to the extent that revenue is used to reduce the cost of goods and services that increase (decrease) the return to work.

8.4.1 Taxation of earned income and consumption

A change in the marginal tax on labour affects revenue from all the other tax bases in the model.[321] A lower marginal tax increases the labour supply and thus the tax revenue from labour. Higher incomes from working lead to increased consumption and higher savings, which in turn lead to increased tax revenue. Last, the increase in the labour supply results in downward pressure on wages, which increases the return to business investment. In a small open economy as in Sweden, the higher return to capital will lead to a higher investment level and thus to wages beginning to rise again. The process continues until the return to capital is driven down to the international level. This process is likely to take a long time. When it comes to a close, the wage level will have returned to the same level as before the tax cut.[322] A tax cut thus causes a direct reduction in public revenue, but in the long term, part of the revenue loss will be regained in the form of increased tax revenue from the growth in the tax bases.

Estimating how large these long-term effects are requires an assumption on how sensitive the labour income tax base is to tax changes. This sensitivity is usually expressed as *the elasticity of taxable income with respect to the marginal after-tax real wage.* This elasticity states the percentage change in before-tax income, if the share of an

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[320] See, for example, Blomquist et al. (2010).

[321] The assumption is that the marginal tax reduction is the same for everyone who works.

[322] The potential for a given international return to capital to determine the wage level was discussed in detail in Fiscal Policy Council (2010), Box 7.1.

increase in income that an individual gets to keep after tax (one minus the marginal tax rate) increases by one per cent. The elasticity reflects not only the labour supply's sensitivity to marginal tax changes, but also to behavioural changes that affect productivity, such as education level, work effort, etc. In addition, the sensitivity of the taxable labor income to tax changes is affected by the opportunities to move income between different tax bases or otherwise avoid tax. Swedish studies find in most cases elasticities in the range of 0.2 to 0.6. As in other countires sensitivity appears to be higher for women than for men.[323]

Sørensen shows that with an income tax base elasticity of 0.2, the self-financing rate of a marginal tax reduction on earned income is 24 per cent. A tax reduction increases the labour supply and thus tax revenue from the income tax. An increase in the labour supply brings a higher return to investment, which in turn leads to more investment and more revenue from the corporate tax. The increase in revenue from labour leads to an increase in household savings and consumption and thus also to more tax revenue from these tax bases.

Lowering consumption taxes increases the return to work since that which the earned income is used for (the consumption of goods and services) costs less. Consumption taxes thus have effects similar to income taxes. But the social efficiency losses associated with consumption taxes are smaller. The reason is that these taxes are also paid by individuals who do not work, such as retirees, whose labour supply is not affected. A shift towards consumption taxes may, however, have undesirable distribution effects, particularly if many individuals outside the labour force have low incomes. There is thus a trade-off between efficiency and income redistribution.

8.4.2 Corporate taxes and taxes on savings

In an open economy which is too small to affect the return to internationally mobile capital, *source-based* capital taxes (which are levied where the investment takes place) and *residence-based* capital taxes (which are levied where the capital owner is registered) have different economic effects. The most important source-based tax in Sweden is corporate tax, which is paid on corporate profits from

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[323] See Aronsson and Walker (2010) and Pirttilä and Selin (2011) for overviews of Swedish studies estimating labour supply- and taxable labour income elasticities.

companies operating in Sweden. Corporate tax has adverse consequences on domestic investment and capital imports, as it increases the yield curve on investments in Sweden compared to other countries. Lowering the tax thus leads to lower yield curves on investment in Sweden, which leads to a capital inflow. With larger capital stocks, real wages increase. When the return to work increases, the labour supply increases. A corporate tax reduction thus always has a higher self-financing rate than a reduction of the marginal tax on labour, since in addition to stimulating the labour supply, it also increases the corporate tax base.[324] In the case where capital is internationally mobile and the return to capital is determined internationally, then the entire tax burden is in fact borne by labour in Sweden.[325]

This line of reasoning assumes that corporate taxes are not internationally coordinated. Coordinated corporate tax reductions would not redistribute investments between countries, as the relative required returns vis-à-vis international returns are not affected. However, globally coordinated corporate taxes is currently very unlikely.[326]

In constrast, residence-based taxes such as taxes on the return to savings and shares have no effect on the investment level in Sweden. Since these taxes are also paid on Swedish investments in other countries, the tax does not affect the return to investment in Sweden relative to other countries. Foreign investors do not pay any tax on capital income in Sweden so their required return remains unaffected.

The capital income tax reduces the capital stock owned by Swedes, since savings decline. As long as investment behaviour does not depend on who owns the capital this does not affect the investment level in Sweden. Some researchers argue that this is a faulty premise and that Swedish capital and business owners behave differently from foreign owners.[327] Several reasons have been given as to why Swedish ownership and capital have positive effects on the

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[324] But arguments for a low corporate tax are only valid for normal returns to business investment. Higher-than-normal returns can be taxed without distorting the incentives to invest. It may be geographically determined returns that depend on such factors as access to infrastructure, an efficient public administration, or agglomeration effects (whereby firms reap a benefit from being close to other firms).

[325] Empirical studies confirm that the labour force bears a considerable share of the tax burden (Gentry 2007).

[326] See, for example, EEAG (2007), Chapter 5.

[327] See, for example, Henrekson and Sanandaji (2004).

Swedish economy. For example, Swedish investors have better information on investment opportunities in Sweden (which makes them more willing to invest); domestic savings encourage entrepreneurship; or domestic business owners make more long-term investments in the home country.[328]

Even if the tax on savings does not affect the investment level in Sweden, it entails social efficiency losses. Since the tax on savings makes it less attractive to save for consumption later in life, savings and the labour supply decline currently as does consumption in the future. The tax on savings thus distorts the consumption pattern so that households consume too much now at the expense of consumption later in life.

Table 8.3 shows the self-financing rate for reductions in the various taxes analysed by Sørensen in his study. The self-financing rate is highest for reductions in capital income taxes, followed by lower corporate taxes and lower taxes on earned income. Consumption taxes have the lowest self-financing rates and thus are the taxes with the least distortionary effects.

Table 8.3 Self-financing rate for a compensated tax cut

A lowering of the effective marginal tax on	Contribution to self-financing rate from increased tax revenue from				Self-financing rate
	Earned income	Consumption	Corporate income	Savings	
Earned income	18.2	4.8	0.4	0.6	**24.0**
Consumption	12.1	3.2	0.3	0.4	**16.0**
Corporate income	18.2	4.8	5.8	0.6	**29.4**
Savings	14.2	3.7	0.3	17.2	**35.4**

Note: A compensated tax cut implies that the tax cut is combined with a (lump sum) transfer to households so that their utility level is held constant. In this way, only the substitution effects are taken into account.
Source: Sørensen (2010).

Table 8.3 illustrates the importance of studying the dynamic (behavioural) effects of various tax changes. Tax revenues from the tax base where a change has been made are not necessarily those

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[328] There are studies showing that there is a 'home bias' in investment, i.e. that domestic savings are largely channelled into investments in the domestic economy. For example, French and Poterba (1991) document a home bias in share ownership. See Henrekson and Sanandaji (2004) for a more detailed discussion of the different arguments. The degree of home bias appears to decline over time and to be less in Sweden than in many other countries (Finanspolitiska rådet 2008, Section 10).

most affected. For example, the dynamic effects of a reduction in the corporate tax refer primarily to tax revenue from earned income.

8.4.3 The cost of generating tax revenue

In the research literature, the cost of generating one additional krona in tax revenue (*the marginal cost of public funds*) is often used as a measure of efficiency in the tax system. A self-financing rate of 0.24 for the tax on earned income results in a marginal cost of public funds of 1.32.[329] This means that a one krona increase in public expenditure has to generate a social value equivalent to SEK 1.32 in order to compensate both for the tax increase and the efficiency loss that occur because of behavioural changes. When Hansson (1984) estimated the marginal cost of public funds in Sweden in 1979, he found a somewhat higher cost, SEK 1.47 to be precise. Because marginal taxes are lower now than at the end of the 1970s, it is reasonable to assume that the efficiency losses of a tax increase on earned income are smaller today.

In an analysis of how different tax changes affect social efficiency, assessing the behavioural changes is essential. If the income tax base is sensitive to tax changes because households and companies can shift income to tax bases with lower taxes, it is better to reduce the efficiency losses by limiting these possibilities rather than by reducing tax rates. If the political ambition is to have relatively high public expenditure, it is particularly important for the tax system to be designed as efficiently as possible. Increases in tax rates that are already high cause larger efficiency losses than increases in low tax rates. Studies also show that countries with high public expenditure tend to have more efficient tax systems.[330]

Box 8.1[331]

The deadweight loss (ΔDWL*)* is defined as the difference between the amount that would be needed to compensate taxpayers for an increase in a particular tax (ΔE), and thus keep their utility level unchanged, and the public sector net revenue from the increase (ΔR), i.e. ΔDWL = ΔE – ΔR. ΔE is a measure of the welfare cost to

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[329] An explanation of the relationship between the two concepts can be found in Box 8.1.
[330] Becker and Mulligan (2003).
[331] More detailed explanations are provided in Sørensen (2010).

the individual because of the tax increase. ΔR can be broken down into the direct (statistical) change in the tax revenue (ΔR_s) and the (dynamic) change due to changes in behaviour (ΔR_d). It can be shown that the sum needed to compensate the taxpayer is equal to the direct (statistical) increase in tax revenue, i.e. $\Delta E = \Delta R_s$. It follows that $\Delta DWL = \Delta R_s - (\Delta R_s + \Delta R_d) = -\Delta R_d$, i.e. that the deadweight loss equals the (dynamic) change in tax revenue resulting from changes in behaviour. (Observe that ΔR_d is a negative number when there is a tax increase.)

The self-financing rate is defined as the percentage of the direct tax revenue lost when there is a tax cut (ΔR_s) that is financed by increases in tax revenue from growing tax bases as a result of changes in behaviour ($-\Delta R_d$), i.e. $-\Delta R_d / \Delta R_s$.

The *marginal cost of public funds* is defined as the welfare cost to a taxpayer of obtaining one additional krona in tax revenue from the taxpayer, i.e. as $\Delta E / \Delta R$. As $\Delta E = \Delta R_s$, and $\Delta R = \Delta R_s + \Delta R_d$ (see above), it is true that $\Delta E / \Delta R = \Delta R_s / (\Delta R_s + \Delta R_d) = 1/(1 + \Delta R_d / \Delta R_s) = 1/(1\text{-the self-financing rate})$.

8.5 Taxation of labour

Research on optimal income taxation has in recent years increasingly emphasised the impact of taxation on the choice of whether or not to work, the *participation decision*. In a theoretical model, Saez (2002) shows that if both efficiency and income distribution aspects are of concern, it matters whether taxes primarily affect the labour supply through the participation decision or the number of hours worked for those who already work. The optimal marginal tax rate depends in a complicated way on the effects of tax on participation decisions and on the choice of how many hours to work, the distribution of taxpayers in different income intervals and political preferences over the income distribution. But it is possible to draw some general conclusions.

- If the tax only affects the number of hours worked for those who work, marginal taxes on low incomes may be relatively high, as they are, for example, with a flat tax. As labour market participation is not affected, it is optimal to redistribute resources to individuals with low incomes through transfer payments.

- But if the participation decision is sensitive to tax changes, but hours worked do not react appreciably to increases in marginal taxes, it is optimal to subsidise jobs for those with low incomes. This can be accomplished by generous earned income tax credits. If high marginal taxes have little or no effect on how many hours are worked, the earned income tax credit can be phased out for higher incomes. A low marginal tax for individuals with the highest incomes may however still be effective, as their potential earned incomes are so high that even small reductions in the number of hours worked would lead to substantially lower tax revenue.

Thus the appropriate tax profile depends on whether it is the participation decision or the number of hours worked that react most to tax changes.

8.5.1 Marginal taxes have been reduced, particularly for low-income earners

The earned income tax credit and higher income threshold for the state income tax have led to lower marginal taxes for everyone with earned income except for those with such high incomes that they pay the tax surcharge on high incomes. Figures 8.2 and 8.3 show average and marginal taxes respectively for different incomes in 1991, 2006 and 2010. The earned income tax credit has lowered the average tax on all incomes and marginal taxes on low incomes. The credit is designed to eliminate the effect whereby the size of the basic allowance varies with income, and thus the marginal tax no longer declines with income in some (low) income intervals. While this makes marginal taxes easier to understand, it complicates the construction of the earned income tax credit. The credit may therefore lead to fewer behavioural effects than would otherwise have been the case.[332] The construction of the earned income tax credit could be simplified, and the tax system made more transparent, if the basic allowance were independent of income.

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[332] This is discussed in detail in Fiscal Policy Council (2010), Section 7.1.

Figure 8.2 Average tax rates for different incomes

Taxable annual income, SEK thousand

- - - - - - 1991   — — 2006   ——— 2010
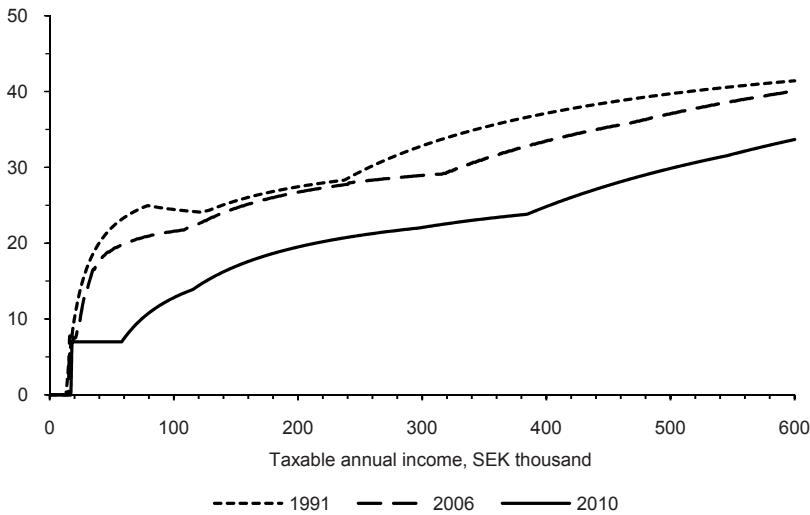
Note: For comparability, the tax rate thresholds are expressed in 2010 prices. It is also assumed that individuals only have income from employment and that the local government tax is 30 per cent.
Sources: Swedish Tax Agency, Flood (2010) and own calculations.

Figure 8.3 Marginal tax rates for different incomes

Taxable annual income, SEK thousand

- - - - - - 1991   — — 2006   ——— 2010
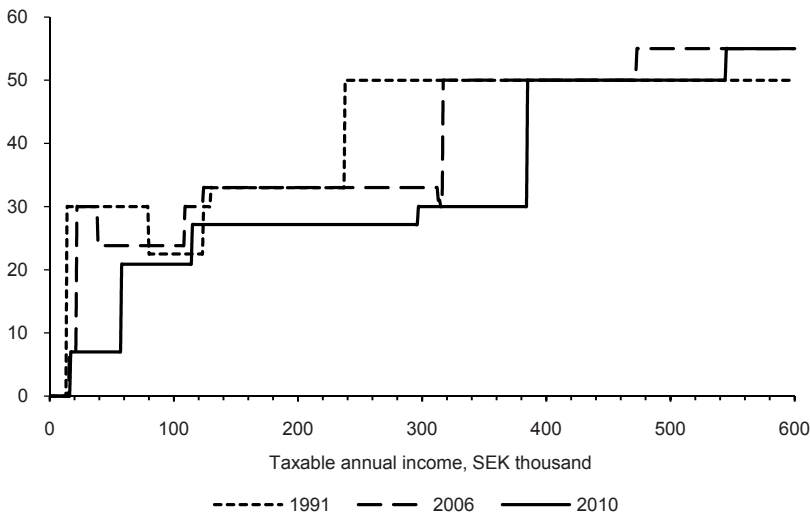
Note: See Figure 8.2.
Sources: See Figure 8.2.

The tax rates shown in the figures refer only to income taxes paid by the individual. To produce the total marginal effect (the *effective* marginal tax), all taxes – both those paid by the employer and those paid by the individual – and transfer payments should be included. It is, however, difficult to estimate what part of social contributions is benefits and what part is tax. It is clear that for incomes above the social insurance ceilings, additional increases in income do not provide any benefits; rather social contributions are only a tax. Sørensen (2010) arrives at a maximum effective marginal tax on earned income of 67 per cent, which is a high figure from an international perspective.

Is the earned income tax credit justified in terms of efficiency? Lowering marginal taxes for low-income earners is, according to the discussion in Section 8.5, a good strategy for reducing distortions in the economy if the participation decision is sensitive to tax changes. Together with changes in the unemployment and sickness insurances, the earned income tax credit has substantially strengthened incentives to participate in the labour force.[333]

The earned income tax credit leads to a direct loss of government revenue of SEK 70 billion a year. But estimates suggest that the dynamic effects in the form of increased employment are significant.[334]

8.5.2 The Government's assessment of the effects of the income tax changes

The Government's analyses of the income tax cuts already implemented do not include any calculations of social efficiency. The Budget Bills and analytical material from the Ministry of Finance contain only estimates of the effects on employment, hours worked and public finances. For this the Ministry of Finance uses a

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[333] Pirttilä and Selin (2011) show that the *threshold effects* declined between 2006 and 2010 and are now at the same level as in other OECD countries. The threshold effect is a measure of the return to switching from not working to working and is defined as (1 - the financial return to working)/(the individual's gross income from a job). The measure takes into account not only that taxes may change, but also that transfer payments may be affected.

[334] In our previous reports, we have discussed the effects on employment and the self-financing rate in the public finances (Finanspolitiska rådet 2008) (Fiscal Policy Council 2009a, 2010). In the Fiscal Policy Council's 2010 report, Table 7.1 summarises various earlier estimates of the long-term effects of the earned income tax credit. See Section 7.1 for a discussion of the Government's proposal for a fifth earned income tax credit.

microsimlation model known as FASIT.[335] As pointed out in Section 7.1, the model is well in line with the methods used in the research in the area. But the model has the limitation that it does not take into account how taxes affect the entire labour market, for example, through wage formation.

The Ministry of Finance estimates how large a part of the direct reduction in tax revenue as a result of the tax cuts will be recovered due to increases in the labour supply. This is not a measure of how social efficiency is affected. The efficiency gains of income tax cuts are generally *larger* than the effects on the government budget. There are three reasons for this. First, FASIT estimates the total effect on the labour supply, i.e. it includes both income and substitution effects. As discussed in Section 8.3, only those effects that arise as the result of distortions (i.e. substitution effects) should be considered when calculating the effect on social efficiency. In the event of a tax reduction on earned income, substitution and income effects on hours worked are likely to move in opposite directions and thus the social efficiency gains are underestimated. Second, the model only takes into account the effects on the labour supply and not the effects on the whole income tax base (via choice of education, work effort and so on) which is likely to be sensitive to tax changes.[336] Third, the effects on tax bases other than earned income are not included. Because the latter effects are not taken into consideration, some of the efficiency effects are ignored. In Sørensen's analysis, which we discussed in Section 8.4 (see Table 8.3) a quarter of the dynamic effects from lowering taxes on earned income consist of increased tax revenue from tax bases other than earned income.

It is to be hoped that the Ministry of Finance will expand its analysis of the consequences of tax changes by also analysing the effects on social efficiency.

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[335] The model has been developed by Lennart Flood at the School of Business, Economics and Law at the University of Gothenburg in cooperation with the Ministry of Finance. This is described in the Ministry of Finance (2009, 2010b) and Riksrevisionen (2009).
[336] See Section 8.4.1 above.

8.5.3 Tax surcharge on high incomes

Marginal taxes on high incomes have increased since the 1990/91 tax reform. In 1995 a tax surcharge on high incomes was introduced which meant thatthe state tax rate increased from 20 to 25 per cent for incomes above a specified level. The tax was intended to be temporary, but in 1998 the surcharge was replaced by a further step in the tax schedule for the state tax. The minimum income for paying the surcharge is currently SEK 46 720 a month. The tax brings in SEK 4.4 billion, which is about 0.3 per cent of total tax revenue.

The realisation that high marginal taxes cause distortions in the economy led to a reduction in the maximum marginal tax to about 50 per cent in 1991. Therefore the surcharge has also attracted much criticism. As discussed in Section 8.5, high marginal taxes on high incomes may result in large efficiency losses, as small changes in the labour supply of high-income earners have serious consequences for tax revenue. According to Sørensen (2010), the efficiency gains of abolishing the surcharge are significant – the self-financing rate exceeds 100 per cent.[337] The Ministry of Finance's (2010b) own analyses show that eliminating the surcharge indeed involves the highest self-financing rate in the public finances of all the various tax changes, but that the dynamic effects only finance half the cost. The results are not inconsistent. Sørensen estimates the change in social efficiency from a compensated tax reduction, while the Ministry of Finance analyses how changes in the labour supply affect the government budget.

Unlike the earned income tax credit, abolition of the tax surcharge on high incomes favours mostly high income earners. Here redistribution and efficiency are clearly at loggerheads. Research shows, however, that the surcharge harms the economy more than most other taxes. It should threrefore be possible to construct atax system without the surcharge which could improve social efficiency without increasing inequality. For example, the abolition of the surcharge could be linked to higher taxation of housing, which could reduce efficiency losses and simultaneously act to reduce income inequality.[338]

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[337] Holmlund and Söderström (2007), who examine how the income tax base has reacted to changes in the marginal tax rate from 1991-2002, come to the same conclusion.

[338] This is proposed in the Long-Term Survey (2011).

8.5.4 Differentiated employers' contributions

The Government has also reduced the taxation of earned income by lowering employers' contributions. This has been done both by a general reduction of one percentage point in 2009 and by reductions for selected groups. Between 2006 and 2008, employers' contributions were lowered in different stages for people over 65 years. In 2007 contributions for people under 25 were lowered and in 2009 the contributions for this group were again lowered and the reduction was also expanded to include 25 year olds. Furthermore employer contributions for groups most detached from the labour market such as the long-term unemployed, people on long-term sick leave and newly arrived immigrants were reduced in 2007. Social contributions for these so-called new start jobs were further reduced in 2010. The Government has cited both efficiency and employment as grounds for the changes.[339]

General reductions in employer contributions also give social efficiency gains, as a lower tax wedge increases the return to work. Such reductions thus work in the same way as a proportional income tax reduction. But it is a relatively expensive way to lower marginal taxes. In order to compare the various tax changes, it would be helpful if the Government published estimates of the self-financing rate, not only for income tax changes, but also for changes in social contributions.

Selective changes in social contributions should be seen as a measure toinfluence the the functioning of the labour market rather than reducing the efficiency losses from taxation. The main effect of lower employer contributions for particular groups is that they become more attractive in the labour market at the expense of others. Even though research shows that much of the increase in employment for the groups favoured arises because they displace other groups, rather than increasing total employment, selective reductions in employer contributions can be a socially efficient measure if the groups favoured are the most detached from the labour market. This is clearly the case for the long-term unemployed, people on long-term sick leave and newly arrived immigrants whereas it is much less so for young people. In our opinion, lowering

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[339] General changes in the social contributions were discussed in detail in the Fiscal Policy Council (2009a), Section 7.1, and selective changes in Finanspolitiska rådet (2008), Section 8.3.

employers' social contributions is a costly way of reducing youth unemployment.

8.5.5 Conclusions on the income tax

Many of the changes made since 1991 have made the tax system more complicated. Some of the changes can be justified on grounds of efficiency. This primarily refers to the earned income tax credit which, by strengthening the incentives to work, probably increases efficiency in the tax system. Moreover, the earned income tax credit has a relatively level distribution profile. One problem is that the construction of the earned income tax credit is difficult to understand, which reduces its efficiency. A change in the basic allowance would make it possible to simplify the construction of the earned income tax credit, thereby increasing the transparency of the tax system.

The income tax change that is likely to provide the largest social efficiency gain is the abolition of the tax surcharge on high incomes. It would, however, mainly favour high-income earners. A change like this could therefore be linked to other changes, such as higher taxes on housing, if preventing greater income inequality is desired.

Differentiated employer l contributions may be appropriate to strengthen the competitiveness of those groups that are most detached from the labour market. There are therefore strong arguments for new start jobs. But the argument is not valid for young people in general. The displacement effects for young people are likely to be large and there is a risk that the tax cut is passed on in higher wages. Lower employer contributions for all young people are a costly and ineffective measure for reducing youth unemployment.

We have also discussed the Government and the Ministry of Finance's analyses of the income tax changes. The analyses as they are done now focus on the tax cuts' effects on employment, the number of hours worked and the public finances. These analyses should be supplemented with estimates of the effect on social efficiency.

8.6 Consumption taxes

As part of the 1990/91 tax reform, a uniform VAT rate of 25 per cent was introduced and several previously wholly or partly VAT exempt goods were made subject to VAT. Since then the rates in some areas have been reduced and the principle of uniformity has been abandoned. Today, for example, VAT rates on food and non-alcoholic beverages, transport in ski lifts, camping, etc. are 12 per cent and only 6 per cent on books, magazines, museums and concerts. The Government does not seem to want to go back to a uniform system; on the contrary, it has announced intentions to halve the VAT rate for restaurant and catering services.[340]

8.6.1 Current VAT rates

VAT rates have been reduced for various reasons. The explicit purpose of the reduced VAT rate on food is egalitarian. The argument is that since food accounts for a larger proportion of consumption expenditure for low-income earners than for high-income earners, a lower VAT on food than on other goods and services leads to an income redistribution benefiting low-income earners. A general conclusion from the research literature on public finances is however that, even if the consumption pattern differs between different income groups, it is more efficient to support vulnerable groups with direct transfer payments than through differentiated consumption taxes.[341] This conclusion is supported by evaluations made for the Value Added Tax Rate Inquiry in 2006, which shows that the reduced VAT rates have little redistributive effect.[342]

Theoretically differentiated tax rates may reduce the social efficiency losses of consumption taxes. Taxes on the consumption of goods with low price sensitivity lead to fewer distortions than taxes on the consumption of goods with high price sensitivity.[343] From the economic efficiency point of view, therefore, goods with low price-sensitivity, such as food, should be taxed more *heavily* than goods with high price sensitivity, such as perfumes. The efficiency loss will

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[340] The 2011 Budget Bill, pp. 22 and 25 and the 2011 Spring Fiscal Policy Bill, p. 25.
[341] Atkinson and Stiglitz (1976).
[342] SOU 2006:90.
[343] This finding goes back to Ramsey (1920).

be less precisely because the consumption pattern is not affected as much. The common perception – that goods such as food and electricity should not be taxed because they are a necessity - is not based on social efficiency considerations, but rather that these taxes cannot be avoided, which is irrelevant in this context.

One problem with taxation is that it is not possible to tax unpaid labour in the home or work in the unregistered sector. If such activities are growing due to higher taxation of work in the labour market, the result is a social efficiency loss.[344] Thus it may be efficient to tax the goods and services consumed *alongside* leisure and unpaid labour (such as cultural events and ski lifts) more heavily than those consumed *in place of* leisure and unpaid labour (such as convenience foods and cleaning services). In this way, the consumption tax can reduce the problem whereby the consumption tax and tax on labour income tend to reduce the labour supply.[345]

A lower VAT rate on food cannot be justified for egalitarian reasons, because there are more effective redistributive tools, or by the theory of optimal taxation, because the demand is relatively insensitive to price changes and is likely to be unrelated to demand for leisure. The same applies to VAT rates on tourist-related activities and cultural and sporting events, since these activities are consumed together with leisure time, and thus for social efficiency reasons should be taxed more heavily.[346]

8.6.2 'HUS' tax credit (credits for household work)

As discussed above, there are theoretical arguments for tax relief on services that are close substitutes for unpaid labour. Lower taxes on these services reduce the distortions that arise because work in the labour market is taxed but unpaid labour is not. It is difficult to determinewhich services are close enough substitutes for unpaid labour to justify a lower tax. It is essentially a matter of the degree of

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[344] See, for example, Kleven et al. (2000) and Sandmo (1990).

[345] The Corlett-Hague rule says that in an economy with two taxed goods and leisure, the social efficiency losses from taxation aimed at financing public expenditure will be minimised by a higher tax on the good that is a complement to leisure (Corlett and Hague 1953).

[346] One argument for lower taxes on particular goods and services is that politicians think that it is 'good' for consumers to consume them. But this is based on a paternalistic view that consumers do not know what is best for them. Another argument is that consumption of particular goods and services results in positive externalities (see the discussion in the introduction to this section). This is however a weak argument when applied to these services.

specialist knowledge needed to perform the work. In our opinion, the arguments are stronger for those services covered by the tax credit for household services than for those covered by the RMI tax credit (repair, maintenance and improvement).[347] Household work does not require the specialist skills of the kind required by most work covered by the RMI tax credit. Households are not even allowed to perform some of these RMI jobs, such as electrical installations, since they require special authorisation.

Undeclared labour is probably more common in those sectors covered by the HUS tax credit than in other sectors. The credit most likely leads to a shift in some activities previously performed in the unregistered sector to the registered. These gains are obviously difficult to estimate, but there is no reason to believe that they are greater for RMI work than for household services.

In our opinion, tax relief for household services makes the tax system more socially efficient, but we are sceptical that the RMI credit tax does. The RMI tax credit also accounts for most of the direct reduction in tax revenue for the HUS tax credit. In 2010, tax credits for RMI work came to SEK 13.1 billion, while credits for household services totalled SEK 1.3 billion.

8.6.3 Reduced VAT on restaurant and catering services

The Government intends to lower the VAT on restaurant and catering services. The justification given in the 2011 Budget Bill is that a reduction in the VAT is expected to increase employment because households will move from unpaid labour to work in the labour market and equilibrium unemployment will be reduced.[348]

The former argument is the same as for the HUS tax credit (credits for household work). Lower taxes on services that are substitutes for unpaid labour reduce the distortion caused because work in the labour market, but not unpaid labour, is taxed. There is research showing that restaurant services are to some extent substitutes for unpaid labour, but the effects on the number of hours

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[347] We have discussed the social efficiency and income distribution effects of the tax credit for household services and the RMI tax credit in the Finanspolitiska rådet (2008) and the Fiscal Policy Council (2009a and 2010).

[348] The 2011 Budget Bill, p. 60.

worked appear to be small.[349] An interim report from the Inquiry on lowering the VAT on some services (Utredningen om sänkt moms på vissa tjänster), estimates that a reduction in VAT on restaurant and catering services from 25 to 12 per cent (for a direct cost of SEK 5.4 billion to the public purse) would increase the labour supply by the equivalent of 2 500 full year workers because unpaid labour would be replaced by jobs in the labour market.[350] The Inquiry also expressed the opinion that a reduction in VAT will not lead to the transfer of unregistered jobs to the registered sector.

The argument that a lower VAT on restaurant services can reduce equilibrium unemployment is only valid under certain assumptions. First, the labour market must not be in equilibrium but wages for workers employed in the restaurant sector must be too high. There isthus a reserve of low-skilled labour that can work in the sector. Second, increased demand for low-skilled workers cannot lead to higher wages. In our opinion, the latter assumption is rather strong. If it does not hold and tax cuts lead to higher wages for the low-skilled, the result is only a redistribution of jobs from other sectors to the restaurant sector: total employment in the economy is consequently not affected.

In an assessment of how a lower VAT on restaurant services affects economic efficiency, the distortion of the consumption of various goods should also be taken into account. Given the current VAT structure, it is possible that the distortions will decrease. The reason is that the VAT on food and takeaway, which are substitutes for restaurant services, is only 12 per cent. But another (and better) way of minimising the distortions would be to apply a uniform VAT to all goods and services.

8.6.4 Conclusions on consumption taxes

In our opinion, a uniform VAT is preferable. It is in reality very difficult to achieve a tax system with optimal differentiated VAT rates.[351] First, there is a lack of reliable information on how sensitive the demand for various goods and services is to price changes and how price changes affect the demand for leisure. Second, a system

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[349] See SOU 2011:24, Appendix 2.
[350] Ibid.
[351] The Value Added Tax Rate Inquiry also came to this conclusion (SOU 2006:90).

with many tax rates gives rise to high administrative costs and demarcation problems, which encourage tax evasion. Differentiated tax rates also open up opportunities for different businesses to try to influence rates by lobbying. Uniform taxation may therefore be preferable, even if a better system of differentiated tax rates could *theoretically* be designed.

Though there are theoretical arguments for differentiated VAT rates, the above review has shown that the current structure rather runs counter to the theory of optimal taxation. The strongest arguments are the arguments for lower taxation of goods and services that are close substitutes for untaxed activities such as leisure, unpaid labour and work in the unregistered sector. In our opinion, the arguments for tax relief for household services are strong enough to merit a deviation from the principle of uniformity.

A general reflection is that the Government has used the employment argument to justify several tax cuts. For example, a lower restaurant VAT is supposed to lead to a decline in structural unemployment. It is questionable whether differentiated consumption taxes are the right instrument for addressing this problem. Tax cuts targeted at disadvantaged groups or changes in the systems that affect the incentives to work are probably more effective.

The fact that the consumption of a number of services is completely exempt from taxation also results in social efficiency losses because consumption is distorted in favour of those services. In Sweden, as in the rest of the EU, no consumption tax is currently paid on education, health care and financial services. Unfortunately there is no estimate of the scale of the efficiency losses incurred in this way, but they are probably significant.

There are strong arguments for reviewing the exemption for financial services. One reason for this exemption is that it is administratively complicated to design a workable VAT system in this area. The client typically does not pay any price in the form of a sum of money; rather the service is paid for by the interest rate set. A bank sells financial services such as managing or lending money. The client pays by getting a lower interest rate on deposits than the bank gets when it invests the money or by paying an interest rate on loans that exceeds the bank's borrowing cost. It is through these spreads between lending and deposits that the bank obtains its income.

Clients thus do not pay any explicit price to which a VAT can be applied in the standard VAT system.

The absence of a VAT on financial services leads to several distortions. Private individuals will *over consume* financial services at the expense of consuming other goods and services. The reverse is true for business. Since it is not possible for companies to get the VAT payments they have made at earlier stages refunded, financial services are more expensive than other inputs. There are currently in the international discussion several proposals on how at least some financial services could be taxed.[352] Two frequent complaints are that it is too easy and too cheap for households to borrow money, while it is too costly and difficult for companies to get loans. A consumption tax on financial services would alleviate both these problems.

8.7 Taxation of capital income

The way in which savings and investment are allocated may have major consequences for growth and prosperity. Therefore, the tax system should help channel capital to those businesses that have the highest social return. Uniformity and neutrality principles are effective for that purpose. By taxing the return to different investments in the same manner, capital will be allocated to the most productive investments.

Sørensen (2010) calls attention to four areas in the taxation of capital income where differences lead to distortions in the savings and investment pattern. Distortions emerge because: (i) institutional pension savings are favoured over other savings; (ii) investment in owner occupied housing is favoured over other investment; (iii) debt financing is subsidised relative to equity financing, and (iv) different company forms are taxed differently. The two first points are discussed below. Corporate and private equity taxes are important parts of the tax system, but for reasons of space, they are not discussed in this report.[353]

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[352] See, for example, Mirrlees et al. (2011), Crawford et al. (2010) and Dickson and White (2010). Denmark has for some time had a system whereby financial institutions pay an extra tax to reduce the distortions that arise because financial services are exempt from VAT.

[353] The Government has recently appointed a committee to review corporate taxes. According to its remit, it will examine the possibilities of levelling the playing field between debt and equity financing.

8.7.1 Taxation of institutional pension savings

In Sweden pension savings are currently favoured relative to other savings. Private pension savings (individual savings and savings in occupational pensions) are subject to a yield tax of 15 per cent, while income from other savings such as savings in bank accounts is taxed at 30 per cent. This tax gift leads to a distortion of savings in favour of institutional savings.

The reason often given for subsidising pension savings is that many people are too short-sighted and therefore save too little for their old age.[354] But this is a poor argument for tax subsidies. It would be better to have mandatory pension savings up to a specified level than to distort the incentives for everyone. From a social efficiency perspective, the current system results in too large a share of pension savings being held in pension funds.[355]

8.7.2 The taxation of housing

The change in the tax on housing in 2008 represented a clear departure from the principle of uniformity.[356] Even if stamp duties, title registration fees and the taxation of capital gains at the time of sale are taken into account, the effective tax on housing is low. This is true whether one sees housing as consumption or as an investment. In a background report to the Fiscal Policy Council, Öberg (2008) estimates the capital cost of new investments in owner occupied housing and in limited liability companies. She shows that the tax system is no longer neutral between different investment alternatives but favours investments in owner occupied housing. Sørensen analyses whether the consumption of housing and other consumption are taxed uniformly. He shows that the tax on housing is lower than on the consumption of other goods and services.

The tax system thus encourages households to invest in housing rather than to invest in the business sector, for example, and to consume housing at the expense of consumption of other goods and services. Nor can the design be justified from an income

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[354] See, for example, Mirrlees et al. (2011).
[355] Bergström et al. (2010) discuss this and other problems related to the taxation of pensions. Their report shows that savings in occupational pensions are designed so that they favour high-income earners.
[356] The real estate tax is discussed in more detail in Finanspolitiska rådet (2008), Section 10.3.

redistribution perspective; for single-family homes with a value exceeding SEK 850 thousand, the tax is even regressive, i.e. the tax decreases as a percentage of the value.

At the time that the proportional real estate tax was abolished, the capital gains tax on the sale of single-family homes and apartments was raised and the rules for deferring the capital gains tax when buying a new residence were made less favourable. Capital gains taxes on long-term investments give rise to locking-in effects, since these taxes are paid at the time of sale, not when the increase in value occurs. The purpose of the deferment is to reduce these locking-in effects. A higher capital gains tax and limited deferment possibilities aggravate the locking-in problem.

Sales and transaction taxes lead to distortions, since they lock in capital. It would be better to replace the capital gains tax on the sale of a residence and the stamp duties with a proportional tax on the market value. Another advantage of a tax on housing is that it is difficult to evade.

The changes in the taxation of housing were however not justified on either efficiency or income distribution grounds but because the tax was not perceived as legitimate. This may have been because the tax was adjusted in line with changes in market value - something that the household cannot influence - and could give rise to liquidity problems. This is probably less of a problem today, as there are more opportunities to borrow with a home as security. Thus, for example, a number of financial institutions offer *senior loans*, where older people who own their home can borrow against it to get cash without needing to sell. Moreover, one can - as before - use a variety of attenuation and limitation rules that reduce taxes for individuals with lower incomes. The legitimacy problem should be solved within the framework of the fundamental principles that investment and consumption of housing should not be subsidised by the tax system and that supply and sale in the housing market should not be obstructed.

8.7.3 Taxation of assets

Since 1991 there have been major changes in the taxation of assets with the abolition of the both the wealth tax and the inheritance and gift tax. The abolition of the wealth tax can be justified on grounds

of efficiency. First, a wealth tax affects savings by reducing the return to assets. According to the discussion in Section 8.4.2, a tax on savings leads to very large efficiency losses. Second, taxing wealth affects how savings are allocated among different asset classes since for practical reasons it is difficult to tax some kinds of assets, art being one example. Third, the tax may affect where households with substantial wealth choose to reside. The efficiency arguments in this particular case are relatively strong. But there are undesirable income distribution effects.

The social efficiency arguments for eliminating the inheritance and gift tax are weaker. In theory the optimal inheritance tax depends on how one views the reasons for leaving a legacy. If an inheritance results because an individual died earlier than expected and therefore did not manage to consume all his or her savings, then the optimal tax is 100 per cent.[357] If people only save for their own benefit, the incentives to save are not affected by a tax that is paid when they die. But if the savings are instead motivated by altruism – savings for children or other relatives – an inheritance tax results in a reduction in savings.[358] In that case, the tax leads to the same distortions as a wealth tax. Other motives for leaving an inheritance may be to 'pay' for services or gifts or leaving an inheritance may make the donor feel happier. Research has failed to establish the motives that are most important and concludes that individuals save to leave an inheritance for several reasons. The reasons may also vary from person to person.[359] An inheritance and gifts may also affect the recipient's behaviour. A capital injection may reduce the recipient's own savings or labour supply.[360] All in all, this means that an inheritance and gift tax is probably less distortionary than a wealth tax.[361] As the taxes have a similar distribution profile, it is odd that the least distortionary asset taxes – the gift and inheritance tax – were the first to be abolished.

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[357] Another argument for taxing inheritances is that society provides an insurance for living longer than expected. Instead of each person saving an extra buffer in the event of living a very long time, the state can provide health care and benefits to these individuals.

[358] One of the arguments used to justify the decision to abolish the inheritance tax was that the tax made passing on a family business from one generation to the next more difficult. But based on existing research, it is not clear whether it would lead to lower social efficiency.

[359] See Kopczuk (2010).

[360] Elinder et al. (2011) study the effects of getting an inheritance on Swedish data and find that recipients reduce their labour supply.

[361] Mirrlees et al. (2011), Chapter 15.

The biggest problem with an inheritance and gift tax is that gifts in particular may be difficult to control. An international comparison shows, however, that most comparable countries have a tax on inheritances and gifts. Table 8.4 shows tax revenue from the real estate, wealth and inheritance and gift taxes for selected countries. Sweden is one of the few countries that have neither a wealth tax nor an inheritance and gift tax. Tax revenue from the taxation of housing is also relatively low.

Table 8.4 Real estate, wealth, inheritance and gift taxes, per cent of tax revenue and GDP, 2009

	Real estate tax		Wealth tax		Inheritance and gift taxes	
Share of	tax revenue	GDP	tax revenue	GDP	tax revenue	GDP
Denmark	2.8	1.4	0	0	0.5	0.2
Finland	1.3	0.6	0	0	0.6	0.3
France	5.7	2.4	0.4	0.2	0.9	0.4
Greece	0	0	0	0	0	0
Ireland	5.7	1.6	0	0	0.6	0.2
Iceland	5.3	1.8	0	0	0.2	0.1
Italy	1.5	0.6	0	0	0.1	0
Netherlands	1.5	0.6	0	0	0.8	0.3
Norway	0.8	0.3	1.5	0.6	0.2	0.1
Poland	3.5	1.2	0	0	0.1	0
Spain	2.5	0.8	0	0	0.8	0.2
United Kingdom	10.3	3.6	0	0	0.5	0.2
Sweden	**1.7**	**0.8**	**0**	**0**	**0**	**0**
Germany	1.2	0.5	0	0	0.5	0.2
United States	12.7	3.1	0	0	0.9	0.2
OECD – Total	**5.9**	**1.0**	**0.2**	**0.1**	**0.6**	**0.1**

Note: Data for the Netherlands and Poland refer to 2008. A value of 0 indicates that the economy has no tax or that revenue is less than 0.05 per cent of total tax revenue or GDP.
Source: OECD.

8.7.4 Conclusions on the taxation of capital

The tax system should help channel capital to those businesses and forms of savings with the highest social return. Since the Government lowered the tax on housing, there has been a bias in favour of investment in housing compared with other sectors such as the business sector. From a social efficiency perspective, this will cause households to invest too large a proportion of their savings in housing – capital that could be better used in other parts of the

economy. Moreover, the current design of the tax on housing with high sales taxes, a higher capital gains tax and an interest levy on the deferred capital gain reduces supply and sales in the housing market.

One reason why the Government chose to raise the sales tax may be its requirement that tax changes are to be financed within the same tax base. Thus, for example, the 2008 Budget Bill[362] states that "In the memorandum that was circulated for comments in the summer, a key assumption was that the transformation of the national real estate tax into a municipal charge would take place without any change in the total amount of taxes and charges levied in the housing sector." This presumption seems to recur in many tax changes. The remit for the Inquiry on lowering the VAT on some services (utredningen om sänkt moms på vissa tjänster) states "If the Inquiry's proposals lead to a cost to the public purse, proposals on how to finance them under the VAT framework are also to be presented."[363] The remit for a review of corporate taxation states that "For those proposals made by the committee in its interim report, it is to present proposals for financing the changes in the same tax base."[364] We do not understand why it is assumed that tax reductions have to be financed within the same tax base. Tax changes that directly affect one tax base may have substantial indirect effects on another. Thus, for example, the analysis in Section 8.4.2 shows that corporate taxes in the long run may be seen as a tax on labour in Sweden.[365]

We have also emphasised the difference between the taxation of institutional savings and the taxation of individual savings in such instruments as bank accounts. In our opinion, there is no justification for favouring institutional savings over other private savings.

Sweden no longer has any tax on wealth or inheritances and gifts. The arguments for not taxing wealth are relatively strong, as this type of taxation distorts savings and induces the flight of capital and capital owners to other countries. The arguments for abolishing the inheritance and gift tax are weaker. An international comparison shows that the countries most comparable to Sweden do not have any wealth tax but do have some taxation of inheritances and gifts.

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[362] The 2008 Budget Bill, p. 42.
[363] Dir. 2010:132, p. 10.
[364] Dir. 2011:1, p. 4.
[365] This line of reasoning does not appear to apply to the taxation of income where the large tax cuts made were financed within the 'scope for reform'.

8.8 Return to the tax reform of the century?

The 1990/91 tax reform was based on the principles of neutrality and uniformity. The theory of optimal taxation was probably not taken sufficiently into account. Technological and globalisation have also led to changed circumstances. Therefore some departure from the principles behind the major tax reform is justified for the purpose of making the tax system more socially efficient. But there is a risk that the tax system will become more complicated and less transparent.

In our opinion, the arguments for the earned income tax credit, the subsidy for household-related services and the abolition of the wealth tax are relatively strong. Other tax changes cannot be justified either on grounds of efficiency or income distribution. This is true for the reduced VAT rates on some goods and services (including restaurant and catering services), lower social contributions for young people and the reduction in the tax on housing.

The danger in departing from the original principles is that it introduces the risk of arbitrariness. By lobbying, special interests may exert too much influence over the tax structure. Our conclusion is that the Government should not continue to try to fine-tune the tax system by differentiating taxes between various goods and services, investments or groups in society. Instead we recommend changes back in the direction of the 1990/91 tax reform. Since it is desirable to have a tax system that is as stable as possible, we propose a comprehensive review of the tax system by a cross-party inquiry.

9 Education policy

The Government has announced and implemented a number of reforms in education policy. Its overall objective has been to "have a high quality education system" in order to "keep up with the increasingly stiff competition".[366] These objectives have in principle been repeated in every Budget Bill and Spring Fiscal Policy Bill since autumn 2007. In the 2009 Budget Bill, the Government writes:

> In an era of globalisation, an individual's talent and knowledge are the most important factors behind growth and progress. If Sweden is to succeed in the 21st century, it must have world-class education and research and an education system able to see the potential in each student. ….The Government will therefore reform education policy. All reforms will aim at improving quality and increasing proficiency.[367]

The 2011 Spring Fiscal Policy Bill also stresses the importance of an effective education system for Sweden's competitiveness and individuals' opportunities in life.[368]

The Fiscal Policy Council has a remit to assess whether developments are in line with long-term sustainable growth and lead to long-term sustainable high employment. Education has a clear link to both growth and employment: it increases productivity and improves matching in the labour market. This link justifies a special review by the Council of the Government's education reforms.

In this year's report, we limit ourselves to the education of children and young people. Research and innovation policy are also key issues that may be analysed in later reports. We have already discussed vocational training for adults in previous reports in connection with the analysis of labour market policy.[369] Higher education as a cyclical policy was the theme of the Council's 2010 report.[370]

9.1 Swedish school results

Results in Swedish schools have been declining for a long time. International surveys show that Swedish students performed

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[366] The 2011 Budget Bill, expenditure area 16, p. 49.
[367] The 2009 Budget Bill, expenditure area 16, p. 101.
[368] The 2011 Spring Fiscal Policy Bill, Chapters 2.6 and 13.2.3.
[369] Fiscal Policy Council (2009a), Section 5.2.5 and Fiscal Policy Council (2010), Section 8.1.4.
[370] Fiscal Policy Council (2010), Chapter 9.

relatively well in the early and mid-1990s. There then followed a marked deterioration at all levels and in all subjects. Results declined the most in upper secondary schools and in mathematics and science. Table 9.1 shows the decline in compulsory school results since 1991 according to international surveys. Box 9.1 provides a short overview of the different international surveys.

Table 9.1 Swedish school results as reported in international surveys

Year	Reading comprehension		Mathematics		Sciences/Physics	
	Grade 3	Grade 4	Grade 8	Upper Secondary School	Grade 8	Upper Secondary School
1991	513					
1995			540	502	553	578
2001	498	561				
2003			499		524	
2006		549				
2007			491		511	
2008				412		497
Change		**-27**	**-49**	**-90**	**-42**	**-81**

Note: Results are based on trends measured by PIRLS and TIMSS (see Box 9.1). The results are standardised with an international average of 500 and a standard deviation of 100. 'Change' shows the change in test results between the most recent observation and the earliest observation reported in the table. For reading comprehension, the change between 2006 and 2001 in grade 4 has been added to the change between 2001 and 1991 in grade 3.
Source: Fredriksson and Vlachos (2011).

The changes in upper secondary school are remarkably large. A comparison of the figures in the last row of the table shows that the deterioration is due to changes in both the compulsory school and upper secondary school: about half of the decline in results has already taken place when the students are tested in grade 8. PISA measurements, which are not shown in the table, confirm this gloomy picture.[371]

According to PISA, results have fallen most for students with the worst performance. Results from international comparisons of students' mathematical and scientific proficiency (TIMSS), however, indicate a relatively steady decline among both strong and weak students: between 1995 and 2007, the proportion of pupils who do

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[371] Between 2000 and 2009, the reading comprehension of Swedish students in the PISA studies decreased by 0.19 standard deviations, while the results in both mathematics and science decreased by 0.16 standard deviations.

not achieve an elementary level in mathematics increased from four to ten per cent, while the proportion of pupils who achieve the most advanced level decreased from twelve to two per cent (Skolverket 2008a).

Box 9.1 International surveys

PISA (*Programme for International Student Assessment*) measures 15-year-olds' reading ability and their proficiency in mathematics and science. TIMSS (*Trends in International Mathematics and Science Study*) assesses students' proficiency in mathematics and science in grades 4 and 8. Sweden has participated with grade 8 students in the 1995, 2003 and 2007 assessments, while grade 4 students have only participated in 2007. PIRLS (*Progress in International Reading Literacy Study*) assesses students' reading comprehension in grade 4.

All these assessments show Swedish students' proficiency relative to students in other countries. PISA has been conducted by the OECD every third year since 2000. The TIMMS and PIRLS studies have been conducted every fourth year by IEA (*International Association for the Evaluation of Educational Achievement*). TIMMS has been conducted since 1995 and PIRLS since 1991, but the latter was called *Reading Literacy Study* until 2001. PISA assessments focus more on reading comprehension than the IEA assessments: a good reading comprehension is therefore required to a greater extent in the PISA studies than in the IEA studies in order to perform well in mathematics. This likely helps explain why the drop in the test results for Swedish students in mathematics, for example, is smaller in PISA than in the IEA studies.

Asian countries and Finland most often rank highest in these comparisons. This is true, for example, of PISA's 2009 assessment, which put Sweden in 15th place, which corresponds to the OECD average.

While Sweden has been placed much lower in comparative international studies, final grades in compulsory school have risen steadily since goal-related grades were introduced in the mid-1990s.[372] Figure 9.1 shows that the increase is significantly stronger in subjects in which national tests are not given (practical/aesthetic subjects)

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[372] The changes in the grading system are discussed in more detail in Sections 9.2.2 and 9.2.3.

than in subjects in which teachers' proficiency assessments were supported by national tests (mathematics, English and Swedish). The trend in grades differs remarkably from the trends in international proficiency test scores.

Figure 9.1 Trends in Swedish compulsory school students' grades
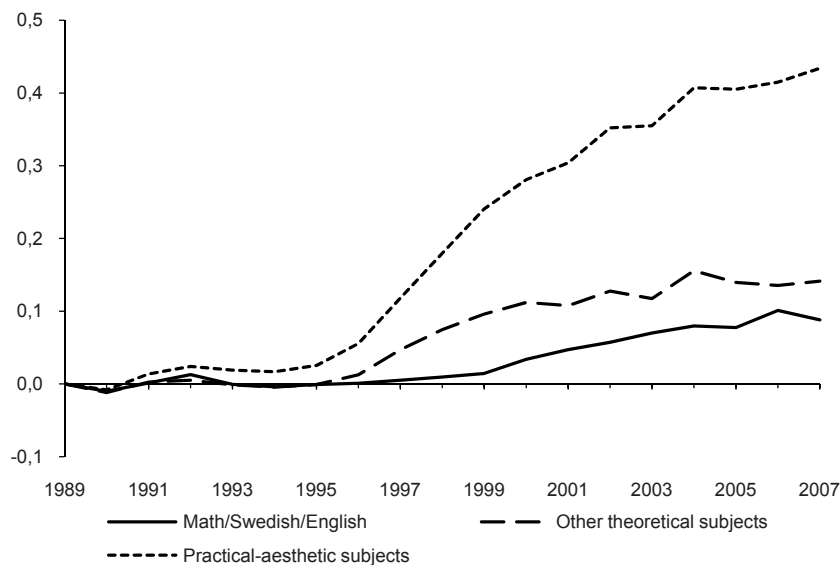

Note: The figure shows the trend in grades compared to 1989 (which is assigned the value 0). The change in the average grade, shown on the vertical axis, is expressed in terms of the standard deviation in the grades distribution.
Source: Gustafsson and Yang Hansen (2009).

The plummeting results indicate the need for action. Furthermore, it is obvious that the grades, at least in their current form, cannot be used as a measure of average school results.

Another problem for the Swedish school system is that the teaching profession has become less attractive. The best students apply for courses other than teaching. This probably affects new teachers' abilities. Figure 9.2 shows that the cognitive abilities, leadership skills, and grades of new subject specialists in compulsory school grades 7–9 (the upper grades) are steadily declining.

Figure 9.2 Abilities of new lower secondary school teachers
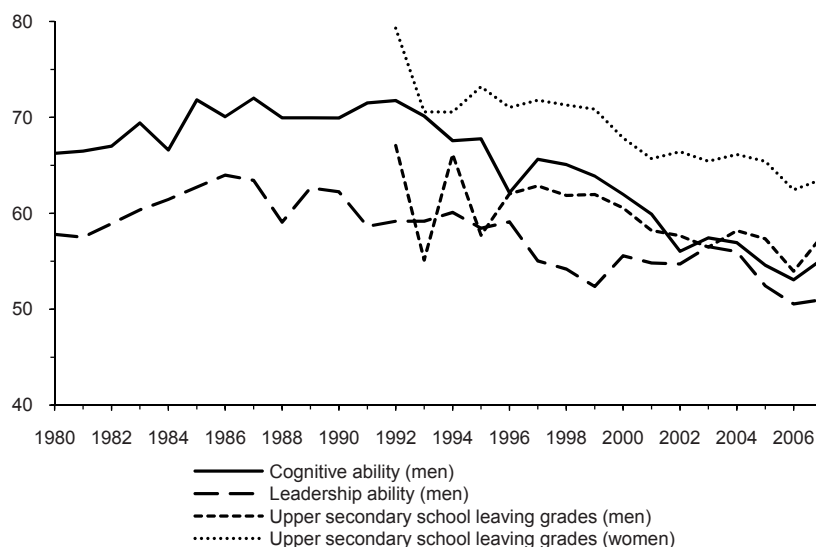
Note: The figure shows the percentage of the population with worse results than the average newly registered subject teacher in the teachers' register, with respect to enrolment tests in cognitive ability and leadership tests and upper secondary school grades.
Source: Grönqvist and Vlachos (2008).

9.2 Education initiatives since 2007

The overall objective of the Government's education policy is to promote growth and competitiveness. Another objective is for all citizens to have access to a good education that gives them the chance to get a job and earn a living. The education system is therefore covered by the employment policy objective of reducing exclusion and increasing employment.

To achieve the objective of "a good education for everyone", the Government has identified six challenges:[373]

- The attractiveness of a teaching career needs to be strengthened.

- Compulsory school results need to be strengthened.

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[373] The 2009 Budget Bill, expenditure area 16, p. 101. In the 2011 Spring Fiscal Policy Bill, the Government sets two quantitative policy objectives: (i) the percentage of 18-24-year-olds who have not completed upper secondary studies and who are not studying is to be less than 10 per cent in 2020 and (ii) the percentage of 30-34-year-olds who have at least a two-year post-secondary education is to come to 40-45 per cent in 2020 (p. 265).

- All students should have a calm learning environment and feel secure at school.

- More young people should become interested in mathematics, technology and science.

- More students should finish upper secondary school with good study results.

- The preschool's potential should be even better exploited.

The Government has carried out a number of changes on all six points. During its previous term of office, the Government spent SEK 7.2 billion on these changes.[374] In the 2010 Budget Bill, the Government announced initiatives costing SEK 7.7 billion from 2010-2014.

Below we analyse the reforms that the Government has carried out and announced on the basis of existing research on the effects of education on students' results and thus on their future productivity and ability to get established in the labour market.

9.2.1 Making a teaching career more attractive

The Government's reforms to improve the status of the teaching profession and make it more attractive are:

- New teacher education that will apply from the 2011 autumn term. A clearer division in teacher education for teachers who teach at different grade levels and subjects and increased subject specialist requirements.

- Continuing education for teachers who have a teaching degree, the *skills enhancement initiative for teachers* (lärarlyftet), which was introduced in 2007.

- A career path where a teacher or preschool teacher with at least a licentiate degree and four years of proven teaching skills can be appointed a senior teacher will be introduced on 1 July 2011.

- A certification system for teachers and preschool teachers beginning 1 July 2011. A degree from a teacher or preschool teacher programme and a satisfactory introduction period will be required to become a certified teacher or preschool teacher. Any

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[374] See the 2007-2011 Budget Bills.

teacher or preschool teacher active when the system takes effect must have a teacher or preschool teacher degree and have served as a teacher or preschool teacher for at least one school year. Only certified teachers or preschool teachers will in future be eligible for a permanent position and only certified teachers will be allowed to decide grades independently.

- An information campaign will be waged in 2011 and 2012 to attract more applicants to teacher and preschool teacher education.

Research on teachers' importance

There is an extensive body of research showing that teachers play a very important role for students' performance.[375] It is therefore appropriate for the Government to focus on teachers. Attracting suitable people to a *good* teacher education and getting these people to *stay* in the profession is important. The teaching profession's ability to attract students with high grades, good leadership potential and high cognitive ability has fallen sharply in the past 20 years.[376]

There are in principle three ways of making the teaching profession more attractive: (1) changing wage levels and the compensation structure, (2) making teachers' duties more attractive, and (3) reducing the uncertainty and costs associated with entering the profession.

Our assessment of the Government's reforms

It is difficult to see how the Government's reforms could have any appreciable positive effect on the above three factors. Because the municipalities are responsible for schools, the central government's chances of influencing wages are limited. There is no evidence that the continuing education offered within the framework of the skills enhancement initiative for teachers would have provided higher wages or changes in job duties for teachers. The opportunity to participate in continuing education may admittedly help make job duties more attractive, but the issue is if the effect is strong enough

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[375] Björklund et al. (2010) from their review of the literature come to the conclusion that "about 10 % of the variation in students' results can be attributed to the teacher factor" and that "this is a very significant source of variation which is about as important as the students' social and educational background". See also Fredriksson and Vlachos (2011).
[376] See Figure 9.1.

to attract more suitable candidates to the profession. According to the follow-up of the skills enhancement initiative for teachers done by the Swedish Agency for Public Management (Statskontoret), the participating teachers were very satisfied. The analysis indicates that participants were mainly teachers who were already motivated to study.[377] Further education seems to have acted primarily as a reward for highly motivated and thus successful teachers. But it is unclear that this is the best way to reward these teachers and whether these are the teachers who have the greatest need of further education.

The senior teacher classification is intended to be a career path associated with higher wages. But since a teacher's teaching skills do not appear to be related to formal criteria, it probably would have been better to use the senior teacher classification to reward particularly ambitious and pedagogically successful teachers, at least as a complement to the formal criteria. The question is how likely it is that teachers who are already working will choose to undertake several years of post-graduate education.

The new Education Act clarifies who is responsible for student health, and thus should reduce teachers' responsibility for student social issues and free up more time for teaching. But other changes may involve an increase in the administrative burden. Under the new Education Act, more decisions can be appealed and such proceedings require standardised information. In particular, the threat of suspending teacher certification will require every student's circumstances and the teacher's contribution to their progress to be documented. In addition to having a negative impact on the profession's attractiveness, this will take time from teaching and lesson preparation.

With the new and longer teacher education programme, the cost of becoming a teacher will, if anything, increase. In addition, teachers must successfully complete a probationary year in order to become certified and this will further increase the costs. International comparisons have shown that countries that have succeeded in keeping teacher education attractive have also managed to guarantee a smooth transition to the teaching profession once studies are completed.[378]

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[377] Statskontoret (2010).
[378] McKinsey & Company (2007).

Teacher certification as an assurance of quality is based on a good idea: municipalities and private schools should not be able to save money by hiring cheap, uncertified teachers. Furthermore, a mentor may in many cases be a welcome feature for new graduates beginning their teaching careers. But we fear that certification will be problematic for several reasons. First, teachers will be certified by the head teacher in the school in which the probationary training took place. It is reasonable to think that the incentives to withhold certification are weak for the head teacher, who has already employed and invested resources in 'schooling' the teacher for a year. It would be more objective if an external party made the certification decision. Second, there is, unlike health care, for example, no clear measure of good (or bad) teaching. It is more difficult to make an *ex post* external and objective assessment of a teaching situation, which generally extends over a long period, than of a specific health care situation.[379]

At best, the certification will ensure a minimum level in the teaching profession and thus send an important norm-building signal. But at worst, it will not have any real effect on who gets a job as a teacher. It will only increase the administrative burden, which makes the profession less attractive. What the outcome will be is difficult to know in advance.

Since the Government's reforms are unlikely to make the teaching profession significantly more attractive, the number of applications for teacher education is likely to remain low in the future. Courses with low application rates are often also forced to accept less qualified students, thus tending to lead to low admissions requirements. Even if the new teacher education programme increases requirements for subject specialisation and focuses more on stage-specific competencies, it is doubtful whether it will actually be able to maintain a high quality. In our opinion, a sound programme focusing on on-the-job training during teacher education and tougher screening of applicants would have been better.

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[379] For a longer critical discussion of the expected effects of the teacher certification requirement, see Fredriksson and Vlachos (2011).

9.2.2 Compulsory school results

The Government has announced or implemented the following reforms to improve results in compulsory schools:[380]

- The new Education Act will come into force on 1 July 2011. It clearly defines the head teacher's responsibility for running the school, puts municipal schools and private schools on a similar footing and gives them similar obligations, and introduces the option of starting cutting-edge courses with national recruitment.

- A new grading scale will come into effect in the autumn 2011 term. Grades will be assigned starting in grade 6 in the 2012 autumn term.

- There will be national targets for grade 3 and national tests beginning in grade 3.

Research on determinants of compulsory school performance

What determines students' performance and what factors can the state have an influence on? *Teachers* are crucial, as discussed in the section above, but it has proved difficult to determine precisely what makes teachers good or bad.[381] According to international research, indicators shown to affect students' achievement are class size, teacher-student ratios and the extent of (classroom) teaching. The grading system is also important.

International research has shown that *head teachers* have had an important impact on students' performance. A Swedish study by Böhlmark et al. (2011) confirms this. It shows that the head teachers are an important factor in how students perform in national tests and what grades they get, as well as in teachers' work environments and wages and the composition of the teaching staff. Well-functioning schools with a strong academic performance are led by head teachers who exercise active leadership and create a good working environment.

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[380] Furthermore a new comprehensive curriculum and well-defined syllabuses will be introduced beginning in the autumn 2011 term. We have not included any assessment of their likely impact in our analysis.

[381] It has proved difficult to substantiate exactly what effect teachers' theoretical and teaching skills in a subject and their experience have on students' performance, even if these in all likelihood should be significant.

Freedom of school choice was introduced in 1991 when municipalities were required to fund the private schools approved by the National Agency for Education. The following year, more opportunity to choose a school within the municipal school system was introduced. This is, in other words, no new reform, but the trend towards a greater element of customer choice and more private schools has accelerated since 2007. For freedom of school choice and the opening-up of the market to lead to a general increase in quality, students and their parents must be able to make the best possible choice, based on factors that really do affect the knowledge and skills level. From society's perspective, students should not only choose the school that provides them with the most proficiency, but also take factors that affect everyone's knowledge and skills level into account. In other words, they should also take into account all the indirect effects that their choice of education has for society in general.

But incentives in the Swedish school system do not reflect this. First, it is questionable whether there is adequate information enabling parents and children to make such choices. Research shows that choices are affected by the information available and how it is presented. Furthermore, research has found differences between what families value; some put great value on knowledge and schools' average academic performance, while others attach considerable importance to students' well-being.[382]

Second, it is logical for students and parents to choose schools that deliver the highest grades. Consequently, schools are tempted to give higher grades than their students' proficiency justifies. This generates grade inflation.

There are as yet relatively few studies on the implications of the Swedish freedom of school choice reform. Those studies that have been done provide some evidence that the reform has generally resulted in a somewhat higher knowledge and skills level – or rather, less deterioration of knowledge and skills – than would otherwise have been the case. Nothing indicates that the expansion in freedom of school choice would have contributed to the deterioration in the results. The causes must rather be sought elsewhere. This is in line with the international literature, much of which finds positive effects

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[382] See, for example, Jacob and Lefgren (2006), Rothstein (2006) and Black and Machin (2010).

from exposure to competition on school results. The size of the effects varies between studies. This may suggest that the effects of exposure to competition vary between different school systems. It is – thus far – hard to come to any specific conclusions about what conditions have to be met to achieve the best results in Sweden. There needs to be more evaluation of the Swedish system.

But there are many indications that the freedom of school choice has contributed to increased segregation, particularly with respect to academic ability. Segregation in terms of social background has also increased somewhat in the past ten years. But it should be pointed out that the deterioration in performance applies to all students, even the highest achievers. Furthermore, both average performance and the spread between students show similar trends in (small) municipalities with limited opportunities for school segregation and in the country as a whole. Increased segregation as a result of the freedom of school choice reforms can thus not explain why Swedish students' performance has deteriorated in international comparisons.

International research on cutting-edge courses ('elite classes') indicates, not surprisingly, positive effects on student proficiency.[383] Students are surrounded by academically gifted and motivated classmates as well as qualified and ambitious teachers. But it should be pointed out that international studies apply to *elite schools*, while the Swedish pilot programme with national recruitment for *cutting-edge* classes is limited to a maximum of 30 classes in grades 7-9, which are likely to be part of larger schools. It is possible that the positive effects on individual student performance of having talented classmates, as well as the schools' ability to attract particularly talented teachers, will in that case be weaker.

One potential problem for the pilot project with cutting-edge courses for students in grades 7-9 is that other schools or classes will be emptied of talented students, thus adversely affecting the education of the remaining students. Guyon et al. (2010) show that an expansion of elite schools in Northern Ireland led to poorer academic performance by students who remained in traditional schools. But the size of the pilot project is so limited that the risk should be small.

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[383] See Hastings et al. (2007), Guyon et al. (2010) and Jackson (2010b).

Grades have three main functions: providing information on students' knowledge and skills, functioning as a selection tool for post-secondary studies and influencing students' motivation. As these objectives are often incompatible, there are always trade-offs in designing a grading system.

Empirical research on how being graded affects students is extremely limited. Figlio and Lucas (2004) and Betts and Grogger (2003) find that stricter grading tends to motivate academically strong students, but the reverse is true for weak students. Azmat and Iriberri (2009) show that grades containing information on students' relative position in the class lead to better academic performance than grades that only measure a student's own achievements. Since students probably already have a good appreciation of their relative position in the class, the latter suggests that grades may convey valuable information about student performance to the home.

Sjögren (2010) examines the long-term consequences of the abolition of grades at junior and intermediate levels in Swedish compulsory schools in the 1970s. She finds that the total time daughters of low-skilled parents spent studying declined. The opposite was true of sons of highly educated parents: the number of years spent studying and incomes rose when they no longer were graded in their early years.

Fredriksson and Vlachos (2011) show that (a) *teacher-student ratios* in compulsory school have increased throughout the 2000s; (b) *class size* has been relatively constant from 1990 to 2005/2006; and (c) scheduled *teaching time* is relatively short in Sweden but has increased between 2000 and 2009. It is difficult from their report to understand what has happened with teacher-student ratios and teaching time during the current government's time in office. But the Government has not made any explicit effort on the above three points other than the special initiatives in reading, writing and arithmetic, which is discussed in Section 9.2.6 below.

The increase in teacher-student ratios is not necessarily positive for student performance if class size is constant (which it was until 2006). Research shows that a reduction in class size has a stronger effect than putting another teacher in a class of a given size.[384] It is also difficult for the state to control these factors since they are

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[384] Finn and Achilles (1990) and Krueger (1999).

decided by other actors, i.e. local authorities and heads of private schools. Special initiatives may easily lead to lower municipal appropriations so that total resources are not affected.

Resource allocation is *compensatory* in Sweden, as it is in most other countries. The teacher-student ratio is thus higher in municipalities with lower average incomes and education. The same applies to schools where students' parents have lower incomes and education. Despite major changes in in the school system, including municipalisation, the compensatory element appears not to have changed significantly. According to Fredriksson and Vlachos (2011), there has been some increase in the number of teachers between 2000 and 2009, but it is not clear whether it occurred during or prior to the current Government's term of office. It is possible, or even likely, that the best teachers are attracted to schools that have a better student base. There is some evidence showing that the freedom of school choice reform has increased competition for teachers.[385] A more in-depth analysis is needed to determine how the compensation trends in Swedish schools have evolved.

Our assessment of the changes in the Education Act

The stress put on the head teacher's responsibility by the new Education Act seems reasonable, given existing research on the head teacher's importance for the school's performance. It is good that the main responsibility also rests with an agent who has a real opportunity to influence the content of activities. Meanwhile, the head teacher already has primary responsibility for operations, and thus the clarification of the responsibility issue will not necessarily have any real consequences. Therefore it is important for the head teacher to be evaluated regularly, both by the school's principal and by the central authorities.

The new Education Act levels the playing field between private and municipal schools in most respects. It gives private schools the same reporting obligations as municipal schools. It also reduces the chances of private schools failing to provide services such as school libraries and student health. Given all the potential quality problems associated with the freedom of school choice reform - but admittedly

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[385] Results in Hanspers and Hensvik (2011) indicate that wages for certain groups of teachers rise when competition between schools increases.

not apparent yet to any significant extent - these changes are reasonable, even though there is a limit to how far a competitive market can be regulated in detail without having an adverse effect on innovation opportunities. In our opinion, harmonisation of the selection criteria that schools should follow is a missing element. Private schools may continue to use the queue time as a criterion along with sibling preference and geographical distance. This probably leads to substantial social segregation. *Charter schools* in the United States operated with public money must, for example, select students by drawing lots if the number of applicants exceeds the number of places. It is difficult to see what arguments there could be against a similar system in Sweden. A major information effort is also needed to make it easier for all students and their parents to make a rational choice. We also welcome the new sanctions that can be taken against schools that do not keep up the quality provided for in the new Education Act. For competition to provide the efficiency and quality gains that it has the potential for, it is very important that poor schools be allowed to fold and good schools to grow.

As long as the cutting-edge courses are of limited extent, we think that there is little risk of significant adverse effects on students in regular classes. The benefits for students in these elite classes should outweigh this risk.

Our overall assessment is that the new Education Act contains many reasonable changes, but we ask whether they are sufficient to actually improve performance in compulsory schools. Much is based on expectations about the effects of changes in norms. The end result depends on how the reforms are implemented in practice.

Our assessment of the reforms in the grading system

The grading system is being reformed in both the compulsory school and the upper secondary school. The current four stages will be replaced by a six-point scale (A-F). From the point of view of motivation, this change appears to be wise as the most motivation is obtained if the next level of grades lies within reasonable reach. But in upper secondary school, this may imply some disadvantages, which we will return to in Section 9.2.3.

Exactly how the grading system will function will be decided by the actual application. From the point of view of motivation, it should be difficult – but not impossible – to achieve the highest

grade. At the same time, it should not be too difficult to get a pass. This is because of the adverse effects in terms of social exclusion that may occur if there is a high absolute limit for a pass result. A high absolute limit also implies a risk that schools with a high proportion of low-performing students will lower their level of ambition in order to reduce the repercussions of having many students who fail to meet the school's minimum target. This probably also affects how motivating – or stigmatising – the introduction of grades from Grade 6 on will be.

It is difficult to assess what impact the changes in the grading system will have. A cautious conclusion is that grades in Grade 6 do not really entail any dramatic changes, but that some levelling of the future labour market situation can be expected if the grades primarily benefit students with weak academic backgrounds.

We take a positive view of the measures the Government has taken to gather information on test scores and make them available to researchers. National standardised tests will be implemented from the school year 2011/2012 in Grades 3, 6 and 9, and the results from all students' tests will be collected by the National Agency for Education.[386] But the results achieved in subtests in Grade 3 are shown only as "achieved the required level" or not, since grades are not given in Grade 3. But this does not provide enough information since most achieve this target. A systematic collection of statistics is essential to make a credible evaluation possible.

We would also like to see grading firmly based on students' actual performance in order to stem grade inflation. It is difficult to see any alternative other than more national standardised tests that are also marked by an external teacher.

9.2.3 Upper secondary school results

The Government's reforms

The Government has decided to introduce a new upper secondary school beginning in the school year 2011/12. The most important changes are as follows:

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[386] Beginning in the school year 2011/2012, there will be national standardised tests in Grade 6.

- In vocational programmes, less time will be spent on general theory. Instead there will be more time for vocational subjects.

- The room for local courses and specially designed programmes will be limited.

- Entrance requirements for upper secondary school will be changed. In the future, students will have to have the lowest grade Pass in Swedish, English and mathematics and in at least nine other subjects in order to qualify for preparatory programmes for post-secondary education. To qualify for vocational programmes, students will have to have a Pass in Swedish, English and mathematics and in at least five other subjects.

- Two new diplomas will be introduced: a diploma leading to post-secondary education and a vocational diploma. Two alternative courses of study for a vocational diploma will be introduced: apprenticeships in which over half of the training period takes place in a workplace, and school-based vocational education.

- Five introduction programmes will replace the current individual programmes.

- A new grading scale at the upper secondary school level will come into effect starting in the autumn 2011 term.

- A credit system has been in effect since 2010.

Research

Evaluations of the 1991 upper secondary school reform, together with international research, can be used to assess the current reforms. The 1991 reform made two significant changes: practical training was extended to include a third (mainly) theoretical year to facilitate the transition from practical training to university and a sweeping change in the grading system was implemented. Course grades replaced subject grades and goal-related grades were introduced.[387]

Both Swedish and international studies show that a larger element of vocational training at the upper secondary level benefits students

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[387] There was a change from relative grades given on a scale of 1-5 to grades with students' knowledge and skills assessed in relation to established grading criteria for each grade level, with grades of Fail, Pass, Pass with Distinction and Pass with Special Distinction.

from a non-academic background and thus increases throughput. Hall (2009) found that the 1991 introduction of the third year of vocational training increased the number of dropouts, particularly among those with a weaker background for studies. But the reform had no positive impact on the transition rate to higher education, which was one of the main reasons for the reform.

The question of how an optimal grading system should look is far more complicated. How many grade levels a grading system has, how difficult it is to meet the requirements for a Pass, whether the grading system is relative or based on learning outcomes are all examples of factors that influence students' incentives to acquire the best possible skills. The research on what effects such factors have is neither extensive nor unambiguous.

Björklund et al. (2010) have analysed the introduction of goal-related grades and find that the percentage not completing an upper secondary education increased and that it took more time to complete studies. This in turn has a large impact on students' future income by age 26. Average income fell for everyone, but the decline was greatest for individuals at the bottom of the income distribution.

An absolute lower bound for a Pass - as the introduction of goal-related grades entailed - can be expected to have several effects. As it is the teacher who decides whether or not the student will receive a Pass, this may have two consequences: the requirements for all students can be lowered and a large part of the teaching resources can be spent on students who are on the verge of being approved. The introduction of the *No-Child-Left-Behind* Act in the United States shows that incentives linked to the proportion of students with passing grades might lead both to lower requirements and more focus on borderline students, to the detriment of the lowest and the highest achieving students.[388]

Our assessment of the Government's reforms

To assess the Government's upper secondary school reforms, the 1990s reforms must be taken into account. The system of course grades may have an element of stigmatisation, as students carry with them every course grade to final grades. In combination with goal-related grades, students who receive a failing grade are given an early

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[388] Koretz (2008), Reback (2008) and Neal and Schantzenback (2010).

and very clear signal that their academic achievement is not good enough. As described above, the goal-related grades have, research shows, led to a higher dropout rate; again, the increase is particularly large among students who are weaker in general theoretical subjects. In summary, the changes in the grading system and the abolition of the two-year upper secondary programmes have led to an increase in the percentage of those who have not completed their upper secondary education.

On the other hand, the proportion of a youth cohort going on to secondary education is currently significantly higher than it was before the upper secondary school reform in 1991 when three-year vocational programmes were introduced. Overall, the proportion of a youth cohort completing an upper secondary education is about the same – more than 70 per cent on average – as before the upper secondary reform.[389]

The new vocational programmes devote more time to vocational subjects and less time for general theoretical subjects. Research shows that this change may benefit students with a weaker background for studies. The change may therefore improve these students' possibilities of completing an upper secondary vocational education and of entering the labour market. But one potential problem with the vocationally oriented programmes is the relatively difficult theoretical eligibility requirements: a pass in Swedish, English, and mathematics and in a further five subjects.

The number of students applying for the new vocationally oriented programmes prior to the 2011 autumn term is relatively low.[390] Why this is so is too early to say. It will be unfortunate if the theoretical eligibility requirements exclude people with an interest and aptitude for vocational training. It is also problematic if those young people – with an interest in vocational training – who meet the theoretical eligibility requirements instead choose a theoretical education only to gain eligibility for higher education. It may lead to both increased dropouts from secondary schools and a lack of skilled labour in the future.

The individual programme (IV) will disappear and be replaced by five new introduction programmes. In our opinion, abolishing the IV programme was highly justified: the results have been very bad. The

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[389] SCB.
[390] Skolverket (2011).

proportion of students who joined this programme directly from compulsory school was 8.4 per cent in the 2009/2010 school year. The transition rate to national programmes has been very low. Of all those who began the IV programme in 2005, only 23 per cent have completed their upper secondary education after five years.[391] An even lower proportion, 14 per cent, had achieved basic eligibility for higher education.[392]

It is remarkable that no systematic evaluation of the IV programme has been made. The above figures show that about 6.5 per cent of each cohort lacks a completed education five years after finishing compulsory school.[393] These people are said to be a significant part of the 11 per cent of 18-24 year olds who in 2009 had not completed their upper secondary studies and who in the 2011 Spring Fiscal Policy Bill are singled out as the weakest group in the labour market.[394]

But the changes and the launching of the five new introduction programmes replacing IV also have potential drawbacks. The new system leads to a stronger stratification of students than the line system that existed prior to the programme-based upper secondary system. Beginning in the 2011/12 school year, there are basically three ways to acquire vocational training: via the national vocational training programme in which the training is either (i) school-based or (ii) conducted in the form of an apprenticeship, or (iii) via vocational introduction. The (theoretical) eligibility requirements for these three paths differ in strictness. Vocational introduction is the easiest to get into: it is intended for all those who are not eligible for the national programmes. The upside is that it paves the way for these students to enter the labour market. But the downside is that stratification can be stigmatising.

The new six-level grading system in upper secondary schools can be expected to have positive effects on students' incentives, because the next grade level will now be closer than in the four-level system. But at the same time, the risk of ending up at a lower grade level (in the event of a temporary weakness) increases the more refined the grading scale is. The system with course grades further increases this

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[391] Skolverket (2010), Table 8.C. A completed education does not mean pass results.
[392] Utbildningsdepartementet (2009) and Skolverket (2010).
[393] 8.4 per cent $\times$ (100 - 23 per cent) $\approx$ 6.5 per cent.
[394] The 2011 Spring Fiscal Policy Bill, p. 266.

risk. This may reduce the incentive for future studies. At the same time, it is only reasonable to require a sufficiently high minimum standard of knowledge in order for students to be able to advance to the next step in their education. The question of what the lowest level for a Pass should be is thus complicated.

Our opinion is that, as with the compulsory school, it is difficult to predict how the new upper secondary school grading system will affect school results, but it seems doubtful that the consequences will be particularly significant.

The credit system aims to strengthen the incentives to read modern languages, English and mathematics in particular. Credits are earned for the above-mentioned core subjects and area courses (which are valuable for the education being sought). The system is non-transparent and complicated and favours students whose parents are well informed. To achieve the objective that students should focus more on core subjects, it would have been simpler to restrict schools' ability to decide which courses may be offered.

9.2.4 Preschools

The preschool reforms that the Government has announced or carried out are:[395]

- A universal preschool from the age of three (beginning 1 July 2010). Free preschool 15 hours a week will be provided.

- A change in the childcare voucher rules. From 1 July 2009, the childcare voucher, like the school voucher, follows the child regardless of what form of organisation the parents choose.

- Under the new Education Act, the preschool will become a distinct form of school with the same overall objectives as all other schools.

- A revised preschool curriculum (from 1 July 2011), clarifying the learning objectives and preschool teachers' responsibilities.

- Child-raising allowance from 2008. Municipalities have the right to introduce a child-raising allowance of SEK 3 000 for children between the ages of one and three.

[395] A recent inquiry (SOU 2010:67) has also examined the issue of a flexible school start, but the Government has thus far not announced any reform in this area.

Research

There are few reliable studies of the effects of preschools on children's future education and income. Some evidence of the beneficial effects of having attended a preschool can be found in a recent study by Havnes and Mogstad (2010) who examine the preschool expansion in Norway in the mid-1970s. They find a highly positive effect on children's average future education level (the number of years of education). Children with low-skilled mothers benefit more than children with well-educated mothers. Researchers found no effect on average earnings, but the differences in earned income decrease in the municipalities where the expansion has been particularly large. According to research findings, starting in preschool by the age of three seems to be an effective means of strengthening children's future position in the labour market. It could be argued that since most three-year olds currently already attend preschool, the universal preschool from three years of age is likely to have little impact. On the other hand, the cost of having all children attend preschool is also small, and thus the reform may very well be cost effective.

The empirical evidence of a clearer focus on learning goals in preschools is limited. The research provides no guidance on when, or under what conditions, it would be good for children. Another conclusion from the study above is that the preschool initiative should not take too school-like forms, as a later school start appears to deliver better labour market outcomes.

Research on the effect that more exposure to competition has on preschool quality is likewise limited. The 2007 survey by the National Agency for Education indicates that parents of children who attend a private preschool are somewhat more satisfied than parents of children in municipal preschools. But the difference may equally well be due to differences between parents' preferences for private or municipal preschools in general as to quality differences between these two forms of preschool.[396]

Research in other countries has generally found that the quality is lower in for-profit preschools than in non-profit preschools.[397] Quality in these studies is measured using the *Early Childhood*

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[396] Skolverket (2007).

[397] See, for example, Cleveland et al. (2008) for a study of preschools in Canada and Morris (1999) for a study of preschools in the United States.

Environment Rating Scale (ECERS), which is based on questions such as staff routines, the children's activities and environment, if the children are kept clean and tidy and how leaving and fetching children are structured.[398] Evidence from Great Britain indicates that quality in the private sector varies sharply and that the very worst quality to be found is in the private sector.[399] Finally, a Dutch study has found that when parents have better direct opportunities to have a say in the choice of preschools, the choice of school places in more affluent areas grows at the expense of choice in less affluent areas.[400]

The only existing study using Swedish data shows that part-time work among preschool staff is more common in municipalities with a high proportion of private preschools and that preschool staff are more apt to be younger and less well educated in these municipalities. But it is not obvious what these results say about the quality. We have not been able to identify any reliable studies on how exposure to competition has affected the quality of preschools in general.

Our assessment of the Government's reforms

There is friction between too sharp a focus on knowledge on the one hand and voluntary preschools on the other. The goal of the preschool changes is to raise children's knowledge and skills level and narrow the spread between them before the mandatory school start. The spread occurs in the current situation in part because different preschools invest different amounts on the acquisition of knowledge. But as long as not all children participate – as is the case today – and the reform succeeds in increasing the knowledge and skills of participating children, the difference between children who participate and children who do not will in fact *increase*. Aiming at having all children attend preschool makes sense, given that it is an investment in acquiring knowledge. But to achieve this, the preschool should be mandatory. If it is not mandatory, there is a risk that differences in knowledge and skills will increase.

The child raising allowance in this context seems less appropriate. Given the – admittedly limited – evidence of the preschool's positive

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[398] The tool was developed by Harms and Clifford (1980). The Swedish version of ECERS was first used in Kärrby and Giota (1994).

[399] Mathers et al. (2007).

[400] Noailly and Visser (2009). Hanspers and Hensvik (2011) examine how the Swedish reform has affected employment, wages and sickness absence among preschool staff. They do not find any clear results.

effects later in the labour market, there are arguments against the allowance, because it creates economic incentives not to have children in preschool. If in addition the child raising allowance is more often collected by parents with lower social status, the friction between the focus on knowledge and voluntary participation will be further exacerbated. There is some evidence of the latter: according to Statistics Sweden's follow-up, guardians of foreign origin apply for the allowance for longer periods than those with Swedish backgrounds. Similarly, the low-skilled get the allowance for longer periods than the well educated.[401]

It is difficult to predict what consequences opening the preschool market will have. For many parents, the freedom to choose a preschool is de facto limited since many municipalities have a shortage of places. Furthermore, not all municipalities have private preschools. International experience emphasises the importance of systematic follow-up and evaluation and of supervision and control in order to prevent a widening spread in preschool quality and segregation between socially strong and weak children.

9.2.5 A calm learning environment and security at school

It is outside our competence to assess the effects of the Government's special initiatives for a calm learning environment and security at school on students' performance.

9.2.6 Mathematics, technology and science

The reforms linked to the Government's ambition to strengthen skills in mathematics, technology and science are:

- A special initiative to strengthen the teaching of mathematics, science and technology (the MST initiative), 2009-2011.

- A reading, writing and arithmetic initiative directed at students in grades 1-3 from 2008 to 2012.

- An hour more instruction in mathematics per week for three grades. It takes effect beginning in the 2013 autumn term.

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[401] SCB (2011).

- National standardised tests had been introduced in Grade 9 in biology, physics and chemistry as of the 2009/2010 school year (each student writes tests in one of these subjects).

- National standardised tests in mathematics as of the 2008/2009 school year.

According to the PISA surveys, the scheduled lesson time in both reading and mathematics for 15-year-olds increased during the 2000s: from 156 and 164 minutes respectively per week in 1999/2000 to 184 and 189 minutes respectively per week in 2008/2009.[402] But this does not give the whole picture. There are some indications that the time that the teacher spends teaching the whole class has decreased. The teacher's role has also changed from providing instruction to the whole class to the supervision of students working on their own. In a report on TIMMS Advanced, the National Agency for Education notes that "Swedish mathematics students spend most of the teaching time working independently or solving problems together with other students. This is also the most common activity in most other countries but not to the same extent as in Sweden."[403] TIMMS 2007 confirms this picture. According to it, 38 per cent of the mathematics lessons in Grade 4 and 28 per cent of the mathematics lessons in Grade 8 in Sweden are spent working independently on problems without the teacher's guidance, which is the highest percentage among all the participating countries. The average for participating EU/OECD countries is 27 and 19 per cent respectively.[404]

There are not any impact assessments of this change, but indirectly a reduction in teacher-led time could be interpreted as a reduction in both teacher-student ratios and teacher competence and have negative effects on students' performance. An English study by Machin and McNally (2008) shows that a changeover to a *more* structured approach based more closely on the curriculum gave better results for students, particularly for low achievers.

Given the clear decline in Swedish students' knowledge and skills in the core subjects as discussed in Section 9.1, the Government, in our opinion, is right in focusing on these core subjects in its special initiative. As a result of the reading, writing and arithmetic initiative,

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[402] Fredriksson and Vlachos (2011).
[403] Skolverket (2009).
[404] Mullis et al. (2008).

SEK 900 million was allocated to mathematics and Swedish in Grades 1-3 from 2008-2010. In 2008, most of this went to teaching materials; less than SEK 40 million of the SEK 150 million allocated, i.e. 27 per cent, was used for more staff. In 2009, the percentage used for hiring staff rose to 42 per cent of SEK 250 million. In 2010, the initiative peaked at SEK 500 million. Assume that the share allocated to hiring staff at that time was also 42 per cent, or SEK 206 million.[405] Spread this over three cohorts totalling about 300 000 children and assume an average teacher salary of SEK 26 500/month and the average contribution results in a 0.1 per cent decrease in the number of pupils per teacher. The funding increase is marginal. But at the same time the signal alone may be important. The same probably applies to the initiative announced providing an extra hour of mathematics per week.

9.3 Conclusions

According to international surveys, Swedish students' performance has worsened significantly since the 1990s. This deterioration has happened at all levels and in all subjects, even though the decline has been greatest in the upper secondary school and in mathematics and science.

The six challenges that the Government has identified generally appear to be in line with the research. To achieve the objective of "a good education for everyone", the compulsory school should impart good skills and knowledge so that everyone who wants to can continue on to upper secondary school. The prospects should be improved by a calm work environment. It is also appropriate to strengthen vocational education and training in the upper secondary school so that students with less interest and aptitude for theoretical subjects can also successfully complete an upper secondary school education. Teachers are presumably the most important factor for a student's performance, so focusing on teacher quality seems appropriate. As results in the sciences have worsened the most, it is right to focus on these subjects in particular. Last there is little that would dispute the argument that the preschool's potential could – and should – be exploited even better.

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[405] As yet there is no information about this.

Thus far the Government gets a pass. But we are sceptical that the measures are adequate to achieve the objectives. The expected results are largely based on hopes for norm-building signals. How the new rules will be applied is vital for the results. The changes in the grading system are a good example of this. Furthermore, the Government has hardly done enough (if anything) to counter the increased segregation. Most indications are that how schools work has become increasingly dependent on student composition. It is difficult to see how the Government's reforms can have any positive impact in this direction.

There are factors that make it difficult for the Government to implement education policy reforms. The municipalities' responsibility for schools combined with local self-government makes it difficult for the Government to steer the school system. Many not very useful changes were made in the 1990s. Teachers also need a calm work environment and time to adapt to new ways of working. It is not good to change the rules frequently.

There is limited knowledge of what caused the results to deteriorate and of what will work. It is also remarkable that the changes have not been systematically evaluated. A systematic follow-up of what is happening in the municipalities should be in the Government's interest. It is unfortunately difficult to do this ex post as the statistics collected are limited.

Our conclusions on the policy conducted thus far and the changes proposed are:

- It is essential to continue to improve the possibilities for follow-up and evaluation. Some improvement has already taken place with the national standardised tests now introduced in years 3, 6 and 9. In addition, the collection of test results has improved. But there is room for more improvement. In particular, the collection of statistics should be better. We take a positive view of the establishment of the Swedish Schools Inspectorate in 2007 and the announced evaluation unit. Examples of data that should be collected are both registers of preschool children, and registers which link information about teachers to information about their students.

- Much of the research indicates that grades are a better selection instrument than tests.[406] This is because grades are the result of repeated and multidimensional measurements of students' knowledge, while tests capture a narrower spectrum of relevant skills. But the information value of grades decreases when students with the same level of knowledge can have different grades, depending on the school they have attended. The grading system must therefore be given a better basis. It is difficult to see any other alternative for accomplishing this than national standardised tests. For the same reason that grades are superior to tests as a selection instrument, this basis should be at a class or school level rather than at the individual level. Because national standardised tests cannot be held in all subjects, grades in other subjects have to be based on test results; experience shows that otherwise there is a risk that grades will be subject to rapid grade inflation. This is not simple. The risk is that too much time will be spent on improving results in national standardised tests and may take the place of other important lessons. The test results are also open to manipulation both before and – in the case of tests corrected locally – after the test is held. It is therefore important that tests are always corrected externally.

- There is a risk that course grades combined with goal-related grades at the upper secondary level 1 make students less motivated as it is difficult to fix a temporary weakness. Dropouts, particularly among students who are weak in general theoretical subjects, have also increased since course grades were introduced. Therefore a return to subject grades should be considered.

- In our opinion, the credit system is non-transparent and complicated. To achieve the objective that students should focus more on core subjects, it would be much easier quite simply to prohibit some of the practically oriented and less knowledge-intensive courses.

- The upper secondary school reform focuses more clearly on job skills in the vocational programmes. This has the potential to make a change for the better. But it is unclear to us why in con-nection with this change the theoretical eligibility requirements

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[406] See, for example, Björklund et al. (2010).

for these programmes are being tightened. The solution now chosen carries the risk of excluding students from attending upper secondary school. The sharp decline in the percentage of young people applying for the vocationally oriented programmes in the new upper secondary school is a cause for particular concern.

- We welcome those changes in the new Education Act that put private and municipal schools on an equal footing. But the Government should consider rescinding the right of private schools to use queue length as a selection criterion. Supervision of existing private schools, like those wishing to enter the market, should be further strengthened.

- The change in the Education Act from July 2011 providing that students should have continuous and active teacher support with structured instruction sounds good. Research indicates that more individualised instruction has contributed to the deterioration in results in Swedish schools. The Government has announced that the National Agency for Education will be given the remit to draw up a general advisory to provide guidance and support to schools and teachers in the teaching situation.[407] This sounds positive but we are sceptical of how effective these changes will be in practice. Information as to the best teaching method is limited. We recommend a systematic collection of data on teaching methods, which can be matched with data on students' results in order to analyse the relation between them.

- In our opinion, initiatives for teachers are insufficient to make a significant difference to students. There are good arguments for reconsidering the teacher certification system. We believe more in a solution where skilled and experienced teachers act as mentors to other teachers or otherwise assist schools with weak results.

Our overall assessment is that the Government has good intentions and good overall objectives, but concrete measures are not well-targeted. We are convinced that more can and should be done. The amount allocated to improving teaching in the schools is only a fraction of the amount allocated to labour market initiatives: an in-

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[407] Dagens Nyheter (2011a).

crease in resources of SEK 7-8 billion over a four-year period compared with SEK 70 billion a year on the earned income tax credit.

Lars Tobisson's reservation

I agree that the capacity to deal with financial instability should be strengthened. But to entrust the Riksbank with this task is not an alternative I would consider.

Influenced by the financial crisis in the early 1990s, measures were taken to promote long-term monetary stability. An independent central bank was given the overall objective of maintaining price stability, primarily through control of the short interest rate. At the same time, a fiscal framework with a surplus target, an expenditure ceiling, a balanced budget requirement for municipalities and county councils, etc. were introduced to improve fiscal stability.

The combination of an anti-inflationary monetary policy and a norm-based fiscal policy has – as the Fiscal Policy Council has pointed out in various contexts – helped make the recent financial crisis relatively manageable and short lived in Sweden. The problems that arose were solved in cooperation between the institutions active in the area, primarily the Ministry of Finance, the Swedish Financial Supervisory Authority (FSA), the Swedish National Debt Office and the Riksbank. Against this background, it does not entirely stand to reason that a liberal economist would be a keen supporter of far-reaching macroprudential regulation. "If it ain´t broke, don´t fix it!"

Under no circumstances would I recommend delegating the leading role in this area to the Riksbank. During the work of the inquiry that preceded changing monetary policy and securing the independence of the Riksbank, the idea of assigning the supervision and regulation of the financial system to the central bank as in some other countries was considered. But this was rejected principally because it would be a mistake to assign the Riksbank a second, ancillary – and in some situations competing – objective for its activities. As for supervision of the kind that now rests with the FSA, the Riksbank's independence is also a complication. Financial supervision is to a considerable extent about application of the law, but who is to review decisions of an independent central bank? Should the FSA as a consequence continue to be responsible for microprudential supervision and macroprudential regulation transferred to the Riksbank, there would inevitably be demarcation problems.

As a justification for letting the Riksbank also take responsibility for macroprudential financial stability, the report states that the Riksbank under the Sveriges Riksbank Act has the remit to "promote a safe and efficient payment system" and that there are more than 45 qualified economists at the Riksbank, whose services can be used in this context. But the provision cited had at its creation only limited scope: to ensure the supply of means of payment in the form of banknotes and coins. And if the Riksbank has so many economists available for analytical work in this area, it perhaps mainly testifies to the fact that the bank is not subject to the tough budget review otherwise taking place in the state administration.

The same principled and practical objections that have been made against the proposal to give the Riksbank a key role in macroprudential regulation, and thus jeopardise its future effectiveness in the fight against inflation, cannot be raised against the alternative of entrusting the task to an independent financial stability council with mostly analytical and coordinating functions. It should be a matter for the newly created financial crisis committee to further consider the need and the design of such a body.

Erik Åsbrink's reservation

I do not share some of the opinions expressed by the majority of the Council's members in the section on education policy that concerns the new vocational programmes. I do not see it as a disadvantage that the eligibility requirements for theoretical competence have been tightened. It is admittedly true that as a result of tighter requirements, some students may not qualify for an education programme. Nevertheless, the tighter requirements reflect the need for well-educated people in modern professional life and for proficiency in what are called theoretical subjects, which are to an increasing extent also of benefit in more practically oriented occupations.

Another change which was recently made, but which I am critical of, is that the new vocational programmes no longer give students eligibility for higher education. There is a risk of creating dead-ends for young people who later in life want to reconsider their choice of occupation.

The National Agency for Education recently presented a preliminary report on students' provisional choices for autumn. It shows that the percentage of students who have applied for programmes leading to higher education as their first choice has increased substantially and that the percentage of students who have applied for vocational programmes as their first choice has decreased substantially.

Even though the preliminary study only concerns a sample of counties and admissions to upper secondary school will not be finalised before the autumn, the shift in applications is remarkable. That this can be explained by the tightening of the theoretical eligibility requirements for vocational programmes seems unlikely. If so, why would there be a shift to programmes that typically have even more theoretical content? It seems more likely that the explanation for the change in behaviour is that the new vocational programmes do not provide eligibility for higher education.

It may lead both to increased dropouts from upper secondary schools and to a shortage of skilled labour in the future.

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Appendix 1 Models for the relationship between structural net lending and the GDP gap

Let S_t^* represent structural net lending in year t. Our model with the output gap is then:

$$S_t^* = a + b \times Outputgap_t + c \times Debt_{t-1} + d \times S_{t-1}^*,$$

where $Debt_{t-1}$ is the general government consolidated gross debt in year t-1. The model without the output gap is given by:

$$S_t^* = \alpha + \gamma \times Debt_{t-1} + \delta \times S_{t-1}^*.$$

Appendix 2 The automatic stabilisers

If we assume that taxes are proportional to GDP and government expenditure independent of GDP, general government net lending can be expressed as:

$$B = tY - G,$$

where
B = general government net lending
t = (proportional) tax rate
Y = GDP
G = government expenditure

All variables are measured in constant prices.

Net lending as a percentage of GDP is:

$$b = \frac{B}{Y} = t - \frac{G}{Y},$$

where

b = general government net lending as a percentage of GDP.

It follows that:

$$\frac{db}{dY/Y} = \frac{G}{Y}.$$

A one *per cent* increase in actual GDP thus increases net lending by G/Y percentage points. The usual formulation is that there is a *budget elasticity* of G/Y. If government expenditure as a percentage of GDP is 51 per cent (cf. Section 1.2.1), then a one per cent increase in GDP will increase net lending by 0.51 per cent of GDP.

Distinguish now between the local government sector and the remainder of the public sector (the state). The local government sector is denoted by the index k and the rest of the public sector by the index s. General government consolidated net lending as a percentage of GDP will then be:

$$b = \left(t_k + \frac{S}{Y} - \frac{G_k}{Y} \right) + \left(t_s - \frac{S}{Y} - \frac{G_s}{Y} \right),$$

where
t_k = the local government tax rate
t_s = tax rate in the rest of the public sector (state tax rate)
S = central government grants to local governments (transfer payments to the local government sector from the rest of the public sector)
G_k = local government expenditure
G_s = central government expenditure excluding grants to local governments

The balanced budget requirement for local governments is:

$$t_k + \frac{S}{Y} - \frac{G_k}{Y} = 0.$$

Hence:

$$b = t_s - \frac{G_s}{Y} - \frac{S}{Y}$$

and

$$\frac{db}{dY/Y} = \frac{G_s + S}{Y}.$$

An increase in GDP of one per cent will now increase net lending as a percentage of GDP by $(G_s + S)/Y$ percentage points. If general government expenditure excluding local government expenditure is 28 per cent of GDP and the central government grants to local governments are 4 per cent of GDP (cf. Section 1.2.1), a one per cent increase in GDP will thus result in an increase in net lending of 0.32 percentage points.

Appendix 3 Emergence of scope for reform

General government net lending can be expressed as:
$$\tilde{B} = \tilde{T}(P, Y; \alpha) - \tilde{G}(P, Y; \beta) - i\tilde{S},$$
where

$\tilde{B}$ = nominal net lending

$\tilde{T}$ = Nominal tax revenue

P = price level

Y = real GDP

α = other factors affecting tax revenue

$\tilde{G}$ = primary nominal government expenditure, i.e. government expenditure excluding interest payments

β = other factors affecting primary government expenditure

i = interest on the general government debt

$\tilde{S}$ = Nominal general government debt

General government net lending as a percentage of GDP is:

$$\frac{\tilde{B}}{PY} = \frac{\tilde{T}(P, Y; \alpha)}{PY} - \frac{\tilde{G}(P, Y; \beta)}{PY} - \frac{i\tilde{S}}{PY}.$$

If this equation is totally differentiated, the change in net lending as a percentage of GDP can be expressed as:

$$d\left(\frac{\tilde{B}}{PY}\right) = \frac{\tilde{T}}{PY}\left[\left(\varepsilon_P^{\tilde{T}} - 1\right)\frac{dP}{P} + \left(\varepsilon_Y^{\tilde{T}} - 1\right)\frac{dY}{Y} + \left(\varepsilon_\alpha^{\tilde{T}} - 1\right)\frac{d\alpha}{\alpha}\right]$$
$$- \frac{\tilde{G}}{PY}\left[\left(\varepsilon_P^{\tilde{G}} - 1\right)\frac{dP}{P} + \left(\varepsilon_Y^{\tilde{G}} - 1\right)\frac{dY}{Y} + \left(\varepsilon_\beta^{\tilde{G}} - 1\right)\frac{d\beta}{\beta}\right] - di \times s$$
$$- ds \times i,$$

where
$\varepsilon_P^{\tilde{T}} = (\partial \tilde{T}/\partial P)(P/\tilde{T}) =$ Elasticity of tax revenue with respect to the price level
$\varepsilon_Y^{\tilde{T}} = (\partial \tilde{T}/\partial Y)(Y/\tilde{T}) =$ Elasticity of tax revenue with respect to real GDP
$\varepsilon_\alpha^{\tilde{T}} = (\partial \tilde{T}/\partial \alpha)(\alpha/\tilde{T}) =$ Elasticity of tax revenue with respect to other factors
$\varepsilon_P^{\tilde{G}} = (\partial \tilde{G}/\partial P)(P/\tilde{G}) =$ Elasticity of primary government expenditure with respect to the price level
$\varepsilon_Y^{\tilde{G}} = (\partial \tilde{G}/\partial Y)(Y/\tilde{G}) =$ Elasticity of primary government expenditure with respect to real GDP
$\varepsilon_\beta^{\tilde{G}} = (\partial \tilde{G}/\partial \beta)(\beta/\tilde{G}) =$ Elasticity of primary government expenditure with respect to other factors
$s = \tilde{S}/PY =$ debt ratio

If the tax system is progressive $\varepsilon_P^{\tilde{T}} > 1$ and $\varepsilon_Y^{\tilde{T}} > 1$. If the tax system is proportional $\varepsilon_P^{\tilde{T}} = \varepsilon_Y^{\tilde{T}} = 1$. If government expenditure is not fully indexed to the price level and to real GDP $\varepsilon_P^{\tilde{G}} < 1$ and $\varepsilon_Y^{\tilde{G}} < 1$.

Assume that other factors, interest and the debt ratio are unchanged, i.e. that $d\alpha = d\beta = ds = di = 0$ and that $\tilde{T} = \tilde{G}$ so that primary net lending is zero. A sufficient condition for net lending to increase when the price level rises is then that $\varepsilon_P^{\tilde{T}} \geq 1$ and $\varepsilon_P^{\tilde{G}} < 1$. Similarly, a sufficient condition for net lending to increase when real GDP grows is that $\varepsilon_Y^{\tilde{T}} \geq 1$ and $\varepsilon_Y^{\tilde{G}} < 1$.

If no government expenditures are indexed to either prices or real GDP, so that $\varepsilon_P^{\tilde{G}} = \varepsilon_P^{\tilde{G}} = 0,$ the taxes are proportional, so that

$\varepsilon_P^{\tilde{T}} = \varepsilon_Y^{\tilde{T}} = 1$, and interest, the debt ratio and other factors are constant, it follows that:

$$d\left(\frac{\tilde{B}}{PY}\right) = \frac{\tilde{G}}{PY}\left[\frac{dP}{P} + \frac{dY}{Y}\right],$$

i.e. net lending as a percentage of GDP increases with the nominal growth rate for GDP (the sum of the price increase and real GDP growth) multiplied by government expenditure as a percentage of GDP. If so, this is the 'scope for reform' that emerges in the absence of fiscal decisions.

If the percentage of government expenditures that are (fully) indexed to the price level is $\mu\mu$ and the percentage that is (fully) indexed to real GDP is π, the increase in net lending in the absence of active decisions is instead:

$$d\left(\frac{\tilde{B}}{PY}\right) = \frac{\tilde{G}}{PY}\left[(1-\mu)\frac{dP}{P} + (1-\pi)\frac{dY}{Y}\right].$$

As

$$d\left(\frac{\tilde{B}}{PY}\right) = \frac{d\tilde{B}}{PY} - \frac{\tilde{B}d(PY)}{(PY)^2},$$

the nominal scope for reform is given by

$$d\tilde{B} = PY\left[d(\frac{\tilde{B}}{PY}) + \frac{d(PY)}{PY}\frac{\tilde{B}}{PY}\right] \approx PYd(\frac{\tilde{B}}{PY}),$$

i.e. approximately the change in net lending as a percentage of GDP multiplied by nominal GDP.

Appendix 4 Decomposition of the change in unemployment

Let P denote the population, L the labour force, E employment, U the number of unemployed, $u = U/L$ the unemployment rate (unemployment as a percentage of the labour force), $e = E/P$ the employment rate (employment as a percentage of the population) and $l = L/P$ labour force participation (the labour force as a percentage of the population).

The number of persons unemployed is the difference between the number of persons in the labour force and the number of employed persons:

$$U = L - E.$$

Thus the unemployment rate can be written as:

$$\frac{U}{L} = 1 - \frac{E}{L}$$

and

$$u = 1 - \frac{\dfrac{E}{P}}{\dfrac{L}{P}} = 1 - \frac{e}{l}.$$

It follows that:

$$1 - u = \frac{e}{l}.$$

Taking logs of this expression, we obtain

$$\ln(1 - u) = \ln e - \ln l.$$

Differentiation gives

$$-du \frac{1}{(1 - u)} = dln\, e - dln\, l.$$

This expression can be written as

$$du = (1 - u)\left[\frac{dl}{l} - \frac{de}{e}\right].$$

The change in unemployment as a percentage of the labour force is thus equal to employment as a percentage of the labour force multiplied by the difference between the percentage change in labour force participation and the percentage change in the employment rate.

Appendix 5 Decomposition of the change in the number of hours worked per person

Let H be the total number of hours worked, P the population aged 16-64, L the number of persons in the labour force, E the number of employed, A the number of persons in work, U the number of unemployed and u the unemployment rate, i.e. the number of unemployed in relation to the labour force (U/L).

In a first step, the number of hours worked per person can be decomposed into the employment rate (E/P) and the number of hours worked per person employed, i.e. average hours worked (H/E). In a second step, the employment rate can be decomposed into labour force participation (L/P) and employment as a percentage of the labour force (E/L). Average hours worked can be decomposed into the percentage of persons employed who are in work (A/E) and the number of hours worked per person in work (H/A).

$$\frac{H}{P} = \frac{E}{P}\frac{H}{E} = \frac{L}{P}\frac{E}{L}\frac{A}{E}\frac{H}{A}.$$

Taking logs, we obtain

$$ln\frac{H}{P} = ln\frac{L}{P} + ln\frac{E}{L} + ln\frac{A}{E} + ln\frac{H}{A}.$$

Differentiation gives:

$$\frac{d\left[\frac{H}{P}\right]}{\frac{H}{P}} = \frac{d\left[\frac{L}{P}\right]}{\frac{L}{P}} + \frac{d\left[\frac{E}{L}\right]}{\frac{E}{L}} + \frac{d\left[\frac{A}{E}\right]}{\frac{A}{E}} + \frac{d\left[\frac{H}{A}\right]}{\frac{H}{A}}.$$

The percentage change in the number of hours worked per person is thus equal to the sum of the percentage changes of the respective components.

Appendix 6 The overlap between unemployment insurance funds and unions

In Box 7.2 the overlap coefficient for the economy as a whole is defined as:

$$\text{Overlap coefficient for the whole economy } = \sum_{i=1}^{n} \sum_{j=1}^{m} K_i F_{ij}^2,$$

where K_i shows how large a proportion fund i has of the total number of persons who are members in the n unemployment insurance funds who are directly affected by collective agreements. F_{ij} shows how large a proportion of the members in fund i union j negotiates for. $\sum_{j=1}^{m} F_{ij}^2$ is the overlap coefficient in fund i. m is the number of unions in the economy. Table A6.1 shows the estimated overlap coefficient for the various funds and their shares of the total number of fund members.

Table A6.1 Overlap coefficient for various unemployment insurance funds

Fund	Overlap coefficient	Share of total fund membership
Graduates´ (AEA)	0.16	0.19
ALFA	0.00	0.02
Building Workers´	0.94	0.03
Electricians'	0.57	0.01
Pharmacy Employees'	1.00	0.00
Building Maintenance Workers'	1.00	0.01
Financial and Insurance Employees'	0.59	0.02
GS	1.00	0.02
Commercial Employees'	0.82	0.05
Hotel and Restaurant Workers'	0.98	0.02
Industrial and Metal Workers'	0.86	0.09
Journalists'	0.71	0.00
Municipal Workers'	1.00	0.16
Management Staff's	0.02	0.02
Food Workers'	0.63	0.01
Teachers'	1.00	0.05
Pulp and Paper Workers'	1.00	0.01
SEKO	0.91	0.03
Local Government Officers' (SKTF)	1.00	0.04
ST's	0.00	0.02
Theatre Workers'	0.04	0.00
Transport Workers'	1.00	0.02
The Union's	0.76	0.16
Total	**0.68**	

Sources: Swedish Unemployment Insurance Board and National Mediation Office.