

Swedish Fiscal Policy

Fiscal Policy Council Report 2017

The Swedish Fiscal Policy Council is a Government agency, whose 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.

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Foreword

The Fiscal Policy Council is tasked with monitoring and analysing fiscal policy. The Council also aims to promote more public debate in society about economic policy.

The Council consists of six members. Since the previous report in May 2016, the appointments of John Hassler and Oskar Nordström Skans have come to an end. Harry Flam is the new chairman, and Peter Englund and Bertil Holmlund are new members of the Council.

The Council is assisted by a secretariat consisting of Joakim Sonnegård (Head of Agency), Niklas Frank (Deputy Head of Agency and Senior Economist, on leave from February 2017), Christina Håkanson (Senior Economist), Hannes Jägerstedt (Economist) and Charlotte Sandberg Gavatin (Head of Administration).

This is the Council's tenth report. The analytical work was completed on 27 April. The Council has commissioned three background papers. They will be published in the Council's publication series, *Studier i finanspolitik* (Studies in fiscal policy):

1. Herman Donner, Peter Englund and Mats Persson – Distributional effects of deregulating the Stockholm rental housing market
2. Elin Ryner – Beräkning av S35-indikatorn [Calculation of the S35 indicator]
3. Pär Stockhammar – Utvärdering av regeringens prognoser [Evaluation of the Government's forecasts]

We have received many valuable comments. We would particularly like to thank all those who have presented reports at Council meetings: Urban Hansson-Brusewitz, Jesper Hansson, Jens Henriksson, Camilla Holmén, Hans Karlsson, Danne Mikula, Joakim Skalin, Ole Settergren, Pär Stockhammar and Annika Wallenskog.

Our dialogue with colleagues at the National Institute of Economic Research is valuable in our work. Discussions with Tomas Forsfält, Erik Glans, Urban Hansson-Brusewitz, Göran Hjelm, Karolina Holmberg, Georg Marthin, Kristian Nilsson, Elin Ryner, Åsa Olli Segendorf, Markus Sigonius, Joakim Skalin, Pär

Stockhammar and Ylva Hedén Westerdahl throughout the year were especially helpful.

We would like to join with the whole of the secretariat in thanking Åsa Andersson, Jakob Almerud, Anna Daniels, Thomas Eisensee, Jesper Hansson, Albin Kainelainen, Mats Karlsson, Philip Löf, Anna Hansson, Karine Raoufinia, Thomas G Pettersson, Hans Sacklén, Hovick Shahnazarian and Ann-Sofie Öberg for their interesting views and constructive comments. Finally, the Council wishes to thank Mats Persson and Herman Donner for their work on the background paper on deregulation of the rental market.

Stockholm, 4 May 2017

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Abbreviations

AP	General pension
LFS	Labour Force Surveys (Statistics Sweden)
BP	Budget Bill
GDP	Gross Domestic Product
ECB	European Central Bank
ESA	European System of Accounts
ESV	Ekonomistyrningsverket (Swedish National Financial Management Authority)
EU	European Union
EC	European Commission
FASTT	Distribution analysis system for incomes and transfers
HEK	Household Finances (Statistics Sweden)
HP	Hodrick-Prescott
IMF	International Monetary Fund
NIER	National Institute of Economic Research
LAS	Lagen om anställningsskydd (Employment Protection Act)
LINDA	Longitudinal Individual Data Base (Statistics Sweden)
NAIRU	Non-accelerating inflation rate of unemployment
NAWRU	Non-accelerating wage rate of unemployment
MAE	Mean absolute error
ME	Mean error
OECD	Organisation for Economic Cooperation and Development
RiR	Riksrevisionen (Swedish National Audit Office)
RMSE	Root mean squared error
SCB	Statistiska centralbyrån (Statistics Sweden)
SFS	Svensk författningssamling (Swedish Code of Statutes)
SNS	Studieförbundet näringsliv och samhälle (Centre for Business and Policy Studies)
TRIF	Aggregated income distribution statistics (Statistics Sweden)
VP	Spring Fiscal Policy Bill
VÄB	Spring Amending Budget
WTO	World Trade Organization
ÅP	Old-age pension system

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The Fiscal Policy Council's remit

The Fiscal Policy Council has been instructed to review and evaluate the extent to which the fiscal and economic policy objectives proposed by the Government and decided by the Riksdag are being achieved, and thus to contribute to more transparency and clarity about the aims and effectiveness of economic policy.¹

In particular, the Council, with the Spring Fiscal Policy Bill and the Budget Bill as a basis, is required to assess whether fiscal policy is consistent with:

1. long-term sustainable public finances, and
2. budgetary targets, particularly the surplus target and the expenditure ceiling.

The Council, with the Spring Fiscal Policy Bill and the Budget Bill as its basis, is also required to:

1. assess whether the fiscal stance is consistent with the cyclical position of the economy, and
2. evaluate the Government's forecasts of economic development and reports to the Riksdag on the public finances. This evaluation should comply with Article 4(6) of European Council Directive 2011/85/EU of 8 November 2011, in its original wording.

The Council is also tasked with reviewing and assessing whether fiscal policy is in line with healthy long-term sustainable growth and leads to long-term sustainable high employment, examining the clarity of the Spring Fiscal Policy Bill and the Budget Bill, particularly with respect to the stated basis for economic policy and the reasons for proposed measures, and analysing the effects of fiscal policy on the distribution of welfare in the short and long term.

The Council also works to stimulate more public debate on economic policy.

¹ SFS 2011:446 and SFS 2016:1088.

The fiscal policy framework

The fiscal framework consists of the fundamental principles that fiscal policy is to follow to be sustainable in the long term.¹ Some of these principles are governed by law, while others follow practice.

Budgetary policy is a core component of the fiscal policy framework. The budgetary framework includes a surplus target for general government net lending, an expenditure ceiling for central government expenditure, excluding interest expenditure, and for old-age pension system expenditure, and a balanced budget requirement for local authorities.

Under the Budget Act, the Government is required to present a proposed target for general government net lending. The Riksdag has set the surplus target such that net lending should average 1 per cent of GDP over a business cycle.

Under the Budget Act, the Government has to propose an expenditure ceiling for the third year ahead in the Budget Bill. The Riksdag sets the expenditure ceiling. Under the expenditure ceiling, there is customarily a budget margin of a specified size. This is mainly there to act as a buffer if expenditure develops in an unexpected way because of cyclical developments.

The expenditure ceiling is the overarching restriction in the budget process. In the budget process, priorities are set for different expenditure types and expenditure increases are considered in the light of a predetermined total fiscal space provided by the expenditure ceiling and the surplus target. The main thrust is that proposals for expenditure increases in an expenditure area have to be covered by proposals for expenditure reductions in the same area.

Since 2000 there has been a balanced budget requirement in effect in the local government sector. The balanced budget requirement states that each municipality and county council must plan for a balanced budget, if there are no exceptional reasons.

The Government has drawn up a number of principles to guide stabilisation policy. Fiscal policy's most important contribution to stabilising the economy is to maintain confidence in the long-term sustainability of the public finances. In the event of normal demand shocks, monetary policy will stabilise both inflation and demand in

¹ This summary is based on Ministry of Finance (2011a).

the economy. The Government then sees no reason to take any active fiscal policy measures. Given shocks of this kind, fiscal policy will have a countercyclical effect via the automatic stabilisers.

In the event of very large demand and supply shocks, an active fiscal policy may be needed. The fiscal measures in this case will help limit the rise in unemployment, reduce the risk of unemployment becoming entrenched and mitigate the consequences for particularly vulnerable groups.

The stabilisation policy measures should also be designed in such a way that they do not prevent net lending from returning to a level compatible with the surplus target when capacity utilisation is once again normal.

It is the Government's view that, in financial crises, it has to take special measures to contribute to financial stability. The Government presumes that the fiscal consequences of such measures should be limited. Any losses arising in the financial sector must initially be borne by the credit institutions themselves, their shareholders and others who have contributed risk capital.

Comments on the proposals from the Surplus Target Committee and the Government's position

Last autumn, the Surplus Target Committee (SOU 2016:67) presented a series of proposals aimed at strengthening the fiscal policy framework. The Government sets out its views on the Committee's proposals in the 2017 Spring Fiscal Policy Bill (VP17). We welcome many of the Committee's proposals and the Government's views on them. However, as we wrote in our response to consultation, one of the Committee's suggestions represents a threat to the Council's independence.¹

The Committee suggests that the model for appointing members to the Council should be altered such that a nomination committee including members of the Riksdag's Parliamentary Committee on Finance should in future nominate new Council members rather than the Council itself. The Committee believes that this will strengthen the Council's independence from the Government. We believe the opposite, that the Committee's proposal would reduce the Council's independence. The Committee's proposal will allow the Minister of Finance to influence who the members of the Parliamentary Committee on Finance put forward as new members of the Council, which would considerably reduce the Council's independence from the Government. Even if this option is not exercised, it is liable to reduce faith in the Council's independence.

Other consulting bodies have also stressed the importance of the Council remaining independent of the Government and that the composition of its membership is fundamental to this.² The Swedish Agency for Public Management believes, for example, that the Committee's model means that 'party-political interests could be considered in the preparatory work' and suggests that the Government should rule on the composition of the Council in the authority's instructions.³

The Government writes in VP17 that the present arrangement for appointing members to the Fiscal Policy Council, whereby the Council itself nominates new members who are then appointed by

¹ Fiscal Policy Council response to consultation on SOU 2016:67, ref. 7-2016-12.

² E.g. the Riksbank and the NIER.

³ Swedish Agency for Public Management response to consultation on SOU 2016:67, ref. 2016/192-4.

the Government, is unique in an international perspective. The Government has previously noted that the fact that the Council itself nominates its members helps to safeguard the Council's independence.⁴ In spite of this, the Government now agrees with the Surplus Target Committee that this method of appointing Council members risks producing a one-sided make-up of the Council. Instead, it is suggested that the Surplus Target Committee's proposal for a nomination committee, including members of the Parliamentary Committee on Finance, should be implemented.⁵ We believe that this reduces the Council's independence, and certainly damages trust in it. If the Government decides to implement the proposal, it is important that members of the Parliamentary Committee on Finance should not form a majority of the nomination committee, and that the chair of this committee should not be a member of the Riksdag.

⁴ See Bill 2013/14:173, p. 30.

⁵ VP17, p. 86.

Summary

The main task of the Fiscal Policy Council is to review and evaluate the extent to which fiscal and economic policy objectives are being achieved. Our principal conclusions in this year's report are as follows:

Economic conditions and stabilisation policy

1. The upturn in the Swedish economy is expected to continue both this year and next, and resource utilisation will become more and more stretched. The global economic situation is also improving and the outlook is relatively good.
2. The Swedish Government's active fiscal policy is not well balanced. In light of the economic situation and the surplus target, the policy should be much more restrictive.
3. A more restrictive active fiscal policy could also contribute to greater macroprudential stability. A properly designed structural policy, e.g. lower interest deductions and a higher property charge, could check both house prices and household debt.

The surplus target and the expenditure ceiling

4. Structural net lending is well below the level required by the current surplus target even though the economy is booming.
5. In the prevailing economic situation, the Government has chosen to weaken the public finances this year. This is remarkable, and the Government needs to justify its policy and explain how it can be reconciled with the fiscal policy framework.
6. There are good grounds for believing that net lending in both the pension system and the local government sector – which have been positive until now – will turn negative in the next four years. In order to attain the surplus target, the State portion of general government net lending needs to be bigger than it has been at any time since the target was introduced.
7. There is great uncertainty as to what should be regarded as a long-term level of costs for receiving and integrating asylum-

seekers. For reasons of prudence, the Government should allow in its budgets for the possibility of these costs being higher than projected.

8. The space under the expenditure ceiling is historically large relative to recent years. The level of the expenditure ceiling therefore provides little support for the surplus target. Such a large space begs the question as to what the Government regards as an appropriate tax take. The Government needs to state what it considers to be an appropriate trend in expenditure and a reasonable tax take over the next four years.
9. The Government intends to achieve the surplus target no later than 2020. The surplus target that the Government is referring to appears to be the new proposed target of 1/3 per cent of GDP on average over the business cycle, and not the present target of 1 per cent. The Government needs to clarify how it sees the transition from the current surplus target to the proposed lower target.

Follow-up on the surplus target

10. The period 2006–2015 may be said to constitute a whole business cycle. Average net lending in this period amounted to 0.3 per cent of GDP. The target of 1 per cent average net lending over the business cycle has therefore not been attained.
11. Even allowing for the fact that this period was marked by an unusually deep and prolonged downturn, the surplus target was not attained; structural net lending averaged 0.7 per cent of GDP in the period 2006–2015.
12. We also note that average net lending has fallen short of the target in every eight-year period from 2005–2012 to 2011–2018.

The debt anchor

13. The Surplus Target Committee has proposed a debt anchor of 35 per cent of GDP. We believe that this provides a sufficient safety margin to weather a serious economic crisis, assuming that real interest rates are low and that long-term growth in the Swedish economy does not fall dramatically.

Long-term sustainable public finances

14. The calculations of the sustainability of the public finances up to 2030 carried out by the NIER on behalf of the Council suggest that there is only a slight risk of imbalances.
15. Unless the integration of newly arrived immigrants into the labour market is considerably improved, asylum immigration will place a long-term burden on the public finances.
16. The retirement age needs to be gradually raised in order for the public finances to be sustainable in the long term and for income-based pensions to reach an acceptable level. The custom of retiring at the age of 65 needs to be changed.

Employment and unemployment

17. The main problem in the Swedish labour market relates to the big differences in employment and unemployment between people born in Sweden and those born outside Europe. In last year's report, the Council advocated continued investment in training and subsidised jobs, and suggested that the social partners should consider the possibility of low-skilled jobs paying below today's minimum wage.
18. We believe that the Government will not achieve its target of the lowest unemployment rate in the EU by the year 2020. This is partly because full-time students who are also looking for work account for a comparatively large proportion of unemployment in Sweden, and because immigrants are not being effectively integrated into the labour market.
19. As previously suggested by the Council, the Government should reformulate its unemployment target into separate targets for different groups, such as asylum immigrants, young people with poor qualifications and the long-term unemployed.
20. The Government expects equilibrium unemployment to fall to 6.2 per cent by 2020, while the NIER expects it to be at 6.7 per cent from 2017–2020. The Government should explain clearly the estimates that have been made, and

present sensitivity analyses to show how the calculations of potential GDP and structural net lending are affected by alternative assumptions of equilibrium unemployment.

21. The principal basis for the Government's retrospective assessment of equilibrium unemployment comes from estimates produced by the European Commission. International collaboration on model development is valuable, but the model needs to be reviewed by the Ministry of Finance before it can be further adapted to Swedish conditions.
22. There is a strong indication that matching within the labour market has worsened since the financial crisis of 2008–2009. This is especially true of people born outside Sweden, and probably implies a certain upward pressure on equilibrium unemployment.

Forecast evaluation

23. The Government still has a lower forecast of resource utilisation in the economy in the coming years than most other analysts. This means that the Government's estimate of structural net lending is higher than would otherwise be the case, which then affects one's assessment of whether the target for general government net lending has been achieved.
24. The Council's evaluation shows that the Government's projections of major macro variables were less accurate than those of the NIER in the period 2007–2016. For most of the variables examined, the Government also fails to surpass a 'naive forecasting method', in which the latest known value is assumed to persist into the future too, at the two to three year horizons. There is also a tendency to systematically over-estimate GDP growth and general government net lending and to under-estimate unemployment. The Government should be able to produce better forecasts and calculations. This is particularly true of fiscal and structural net lending, where the Government alone has access to the most up-to-date information.

25. The Government's calculation of the public finances results in a systematic overstatement of fiscal and structural net lending over the next two to three years. We believe that the Government should apply an extrapolation method to provide a more realistic picture of how the public finances are likely to develop.

Rent control and income distribution

26. Mobility in the labour market is likely to increase and the conditions for growth should improve following an adjustment of the present system towards market rents. Rent control protects those who are already in the rental market at the expense of those outside. Even for those inside the market, regulation creates problems. It does keep their rents down, but it also restricts their mobility and freedom of choice.
27. No amendment should be made, however, without considering the impact on the distribution of disposable income. Our calculation of the short-term distribution effects shows that a move to market rents would increase rents slightly more for households in higher income bands, but that households with lower incomes would be hit harder in terms of the percentage of disposable income. A move to market rents should therefore be accompanied by other measures, such as increased housing allowances. At the same time, a move to market rents would bring capital gains to property owners. A one-off tax on property owners could help to finance increased housing allowances.

Nomination of members of the Fiscal Policy Council

28. The Government intends to establish a nomination committee including members of the Riksdag's Parliamentary Committee on Finance. We feel that this could compromise the Council's independence, or at least damage people's faith in its independence. If the Government decides to implement the proposal, it is important that members of the Parliamentary Committee on Finance should not form a

majority on the nomination committee, and that the chair of this committee should not be a member of the Riksdag.

1 The economic situation

Chapter 1 provides a general picture of the economic situation. The Council discusses and evaluates the Government's economic policy in the light of this in subsequent chapters. The Council produces no economic forecasts of its own; rather, this chapter is based on material published by other analysts and forecasters.¹

1.1 The international economic situation

The global economy continued to improve in 2016. The large negative output gap arising from the financial crisis is gradually closing (Figure 1.1). Several confidence indicators are above their historical average levels in the USA, the Eurozone and the UK, which suggests that the economic situation will continue to improve.² Investments are increasing as a percentage of GDP, after a prolonged downturn with restrained levels of investment.

The IMF expects global growth of around 3.5 per cent in 2017 and 2018 (see Table 1.1). The advanced economies are growing by 2 per cent on average, compared to the developing economies which are expected to average 4.5 per cent growth in 2017 and 4.8 per cent in 2018.³ However, there are very big differences within different groups of countries. Among the developing economies, the growth is driven mainly by China and India. However, the changes in the Chinese economy seem likely to hold back global demand in the future too. India is expected to grow slightly faster than so far this century. The Russian economy has climbed out of the recent recession, helped by rising oil prices. It seems that the pattern of negative growth in Brazil could change, but the country is in great need of structural reform and continued support from economic policy.

The advanced economies have not yet returned to the growth rates that prevailed before the financial crisis. The US economy is expected to grow by 2.3 per cent this year. The recovery in the Eurozone continues, and growth is projected to be around 1.7 per

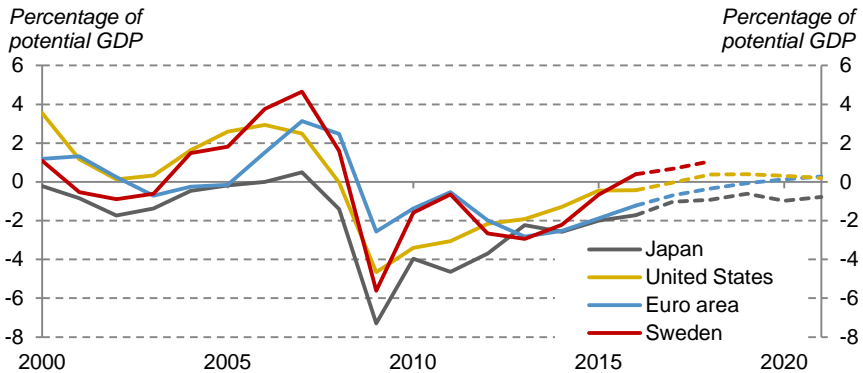
¹ The picture of the international economic situation is based largely on IMF (2017a), IMF (2017b), OECD (2016b) and NIER (2017b).

² NIER (2017b).

³ The definitions of developed and developing economies are taken from World Economic Situation and Prospects (WESP), guidelines developed by the UN.

cent in the current year. The UK is growing faster than many analysts feared after the referendum on leaving the EU, but the expectation is that this growth will slow over the next few years. In Japan, development remains sluggish and the downturn looks set to persist according to IMF forecasts. As can be seen from Figure 1.1, the Swedish economy is currently strong on a global comparison.

Figure 1.1 Output gap in selected countries



Note: The output gap shows how actual GDP differs from its long-term level (potential GDP), and is expressed as a percentage. In its April 2017 forecast, the IMF estimates the output gap for Sweden only up to 2018.
Source: IMF (2017b).

Table 1.1 GDP growth in selected countries

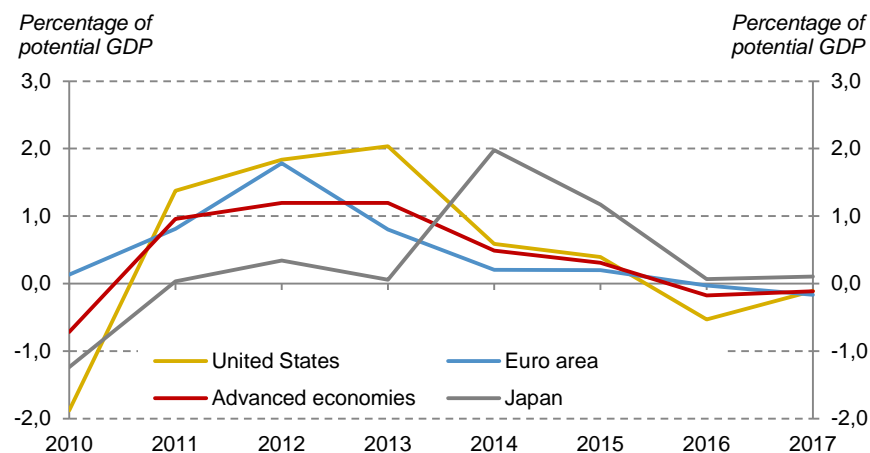
Percentage change	2000–2007	2008–2015	2016	2017	2018
World	4.5	3.5	3.1	3.5	3.6
Advanced economies	2.7	1.2	1.7	2.0	2.0
Developing economies	6.6	5.6	4.1	4.5	4.8
Sweden	3.3	1.5	3.3	2.7	2.4
USA	2.7	1.3	1.6	2.3	2.5
Eurozone	2.2	0.5	1.7	1.7	1.6
Japan	1.5	0.5	1.0	1.2	0.6
UK	2.9	1.1	1.8	2.0	1.5
China	10.5	9.2	6.7	6.6	6.2
India	7.1	7.4	6.8	7.2	7.7
Russia	7.2	1.9	-0.2	1.4	1.4
Brazil	3.6	2.7	-3.6	0.2	1.7

Note: The table shows the annual percentage change in real GDP. The definitions of advanced and developing economies are taken from the WESP guidelines which are used by the IMF and the World Bank, among others.
Source: IMF (2017b) and Macrobond.

In March, inflation in the Eurozone reached the ECB's target level for the first time in four years, prompting Bank chief Mario Draghi to change his tone slightly regarding the policy outlook.⁴ However, the price increases are mainly driven by energy prices, and core inflation remains low. It is thus uncertain how permanent the higher inflation will be, and monetary policy in the Eurozone is still expansive. The way in which prices, and hence monetary policy, in the Eurozone develop in the future will have implications for economic activity and subsequently on the shaping of fiscal policy.

Fiscal policy has been very tight in many countries in recent years, and there are signs that we may now expect a less restrictive, and in some cases even expansive, approach (see Figure 1.2). This is particularly true in the USA, where the administration has promised fiscal policy stimuli in the form of tax breaks and public infrastructure investments. The OECD urges a mildly expansive fiscal policy strategy after a long period of consolidation of the public finances in many areas following the financial crisis.⁵

Figure 1.2 Change in structural net lending



Note: A positive change in net lending means that the policy has been made more restrictive, and vice versa.

Source: IMF (2017b) and Macrobond.

All in all, the short-term prospects for the global economy look relatively good. However, they are fraught with a number of risks,

⁴ In his statement, Draghi said that he was prepared to use 'all available instruments' to combat price stagnation. This was interpreted as a cautious signal that the extraordinary monetary policy stimuli in the Eurozone could start to be phased out. Financial Times (2017a).

⁵ See OECD (2016b).

not least political, which could have an impact in the medium to long term if they come to pass. One such risk relates to uncertainty about economic policy, particularly in the USA and China. Global growth is dependent on support from fiscal policy, particularly in the USA but also in China and the Eurozone. The OECD estimates that fiscal policy stimuli in these countries will contribute around 0.5 percentage points to the global growth rate in the coming years. The IMF also believes that uncertainty about fiscal policy, especially in the USA, could affect global growth prospects. In the UK and the largest developing countries, the indicators used by the OECD and the IMF point to an unusual degree of uncertainty surrounding economic policy.⁶

Future collaboration within the EU is currently facing a number of major challenges, including the terrorist threat, the refugee crisis and strained relations with Turkey. On top of these, the negotiations on the UK's exit from the EU and the elections in France and Germany are also helping to create an uncertain investment climate in Europe.

Among the developing economies, there are risks of high debt levels in the corporate sector, falling profitability and weak public finances. These risks, often aggravated by low commodity prices, also give rise to higher risk premiums and capital outflows, as well as exchange rate risks for the banks.⁷

Another cloud on the horizon is the possible turn that trade policy could take in the future and the implications of this for global trade. The growth in trade is unusually weak compared to GDP growth, and several international organisations are warning of further developments in this direction. Research shows that both structural factors and factors of a more random nature, such as increased uncertainty over policy and protectionist rhetoric, have contributed to this trend.⁸

⁶ See OECD (2016b) and IMF (2017a).

⁷ See IMF (2017a).

⁸ The IMF, the World Bank, the OECD and the WTO have all expressed concern about an increasingly negative attitude to globalisation and trade in many parts of the world. See e.g. Haugh et al. (2016), WTO (2016) and Constantinescu et al. (2017).

1.2 Developments in Sweden

In the winter of 2015/2016, the high levels of asylum immigration in the second half of 2015 were the focus of political debate. The measures to limit the influx of asylum-seekers which the Government and parts of the opposition agreed on at the end of October 2015 had an immediate effect.⁹ The number of applications per week peaked at the beginning of November when just under 11,000 people sought asylum in Sweden. Applications then fell back sharply to around 2-3,000 per week at the end of December. In all, 162,915 people applied for asylum in Sweden in 2015. In previous years, the number of asylum-seekers varied widely during the year, with a distinct increase in the autumn. This seasonal increase was not seen in 2016; instead, between 400 and 600 people per week continued to seek asylum. A total of 28,939 people applied for asylum in Sweden in 2016, the lowest figure since 2009.¹⁰ It is unclear whether this should be seen as a stable long-term level or whether the number of asylum-seekers will increase when the temporary legislation ceases to apply.¹¹ It is important to take account of this uncertainty, because the impact on the public finances could vary greatly depending on the levels that occur.

As the Council wrote in its 2016 report, it takes time for the costs of taking in refugees to tail off. A large part of the costs of asylum immigration in 2015 is therefore likely to persist for several years, however many people seek asylum in the future.

1.2.1 The economic situation

According to the National Institute for Economic Research (NIER), the Swedish economy entered an upturn in 2016, with a slightly positive output gap. Several different indicators of resource utilisation confirm this picture (Figures 1.3 and 1.4). The NIER believes that the economy will continue to improve during the year

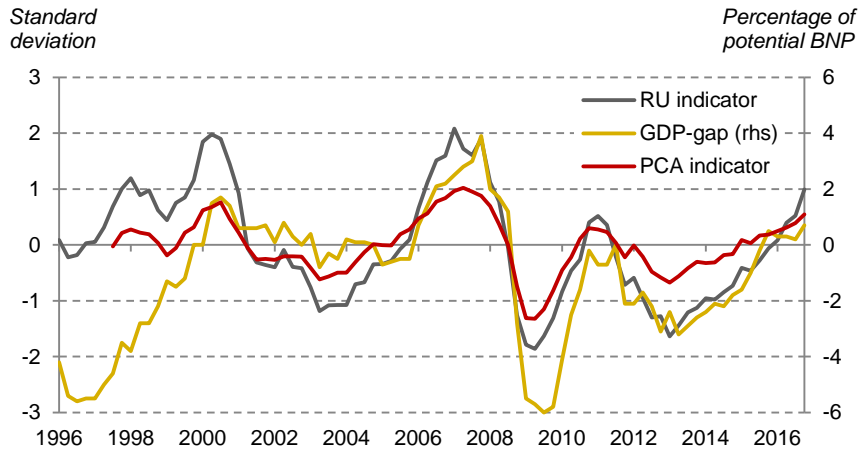
⁹ The arrangement means that Sweden has introduced temporary restrictive rules on migration in line with the EU's minimum levels. Temporary border controls were also introduced on 12 November 2015; see Government (2015).

¹⁰ Migration Agency (2016) and Migration Agency (2017a).

¹¹ In the summer of 2016, the Riksdag decided to introduce time-limited residence permits, to restrict the right of families to enter the country, and to tighten the maintenance requirement. The Act (SFS 2016:752) will remain in force for three years and will then be re-assessed. On 7 February 2017, the Government decided to retain the temporary border controls until 10 May 2017; see Government (2017).

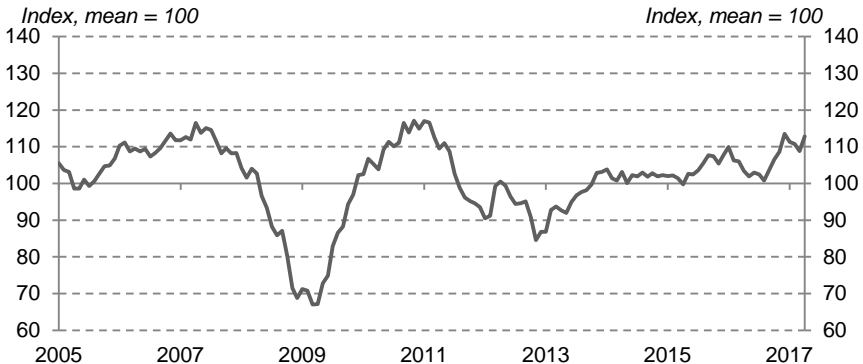
and that this increase will peak in 2018 (Table 1.2). The Riksbank paints an even brighter picture of the economy going forward. However, its view of the economic situation is not shared by the Government, and VP17 assumes a much smaller output gap in the coming years, although the Government forecasts higher GDP growth than the NIER. We will return to possible causes and consequences of these differences in Chapter 3.

Figure 1.3 The Swedish economy



Note: The Riksbank’s indicator of resource utilisation, RU, combines information from survey data and labour market data with the aid of principal component analysis (PCA). The PCA indicator is the NIER equivalent. The indicators are standardised around a mean of 0 and a standard deviation of 1.
Source: Sveriges Riksbank and NIER (2017b).

Figure 1.4 The Economic Tendency Survey, April 2017



Note: The Economic Tendency indicator summarises the current view of the economy among Swedish companies and households. The series is standardised around a mean of 100 and a standard deviation of 10.
Source: NIER (Economic Tendency Survey, April 2017).

Table 1.2 Key macroeconomic indicators for the Swedish economy

BP17 September 2016				VP17 April 2017		
	2016	2017	2018	2016	2017	2018
GDP	3.5	2.3	1.9	3.3	2.9	2.2
Output gap	0.0	0.2	0.0	-0.1	0.5	0.4
Employment	1.8	1.5	0.6	1.5	1.8	1.0
Unemployment	6.8	6.3	6.3	6.9	6.6	6.4
CPI	1.0	1.5	2.1	1.0	1.5	1.6
Gov. net lending	-0.2	-0.3	0.0	0.9	0.3	0.6
Structural net lending	0.2	-0.3	0.1	1.0	0.3	0.6
Gross debt	42.0	40.9	39.5	41.6	39.5	37.3
NIER August 2016				NIER March 2017		
	2016	2017	2018	2016	2017	2018
GDP	3.3	2.0	1.9	3.3	2.5	2.1
Output gap	0.5	0.7	0.6	0.4	1.0	1.1
Employment	1.8	1.3	0.8	1.5	1.7	0.8
Unemployment	6.7	6.3	6.2	6.9	6.7	6.5
CPI	1.0	1.4	2.7	1.0	1.5	1.6
Gov. net lending	-0.6	-0.3	0.2	0.9	0.5	0.6
Structural net lending	-0.5	-0.8	-0.3	0.6	0.4	0.4
Gross debt	41.7	40.2	39.1	41.3	39.2	37.5
Riksbank September 2016				Riksbank April 2017		
	2016	2017	2018	2016	2017	2018
GDP	3.2	2.2	2.4	3.3	2.8	2.3
Output gap	0.5	0.8	1.3	0.4	1.3	1.6
Employment	1.6	1.0	0.7	1.5	1.8	0.7
Unemployment	6.9	6.7	6.7	6.9	6.7	6.6
CPI	1.1	1.8	2.6	1.0	1.6	2.1
Gov. net lending	0.1	0.0	0.2	0.9	0.6	0.7

Note: Output gap and structural net lending are specified as a percentage of potential GDP, unemployment as a percentage of the labour force (aged 15–74) and net lending and gross debt as a percentage of GDP. Other figures represent annual percentage change.

Source: BP17, VP17, NIER (2016a), NIER (2017b), and Sveriges Riksbank (2016a) and Sveriges Riksbank (2017b).

The NIER estimates that the growth rate in GDP in 2017 will be 2.9 per cent, which is much higher than in comparable countries (see section 1.1). A major contributory factor behind this trend are relatively high gross investments (see Figure 1.5). A lot of these are investments in housing, but industrial investments have also been growing faster recently.

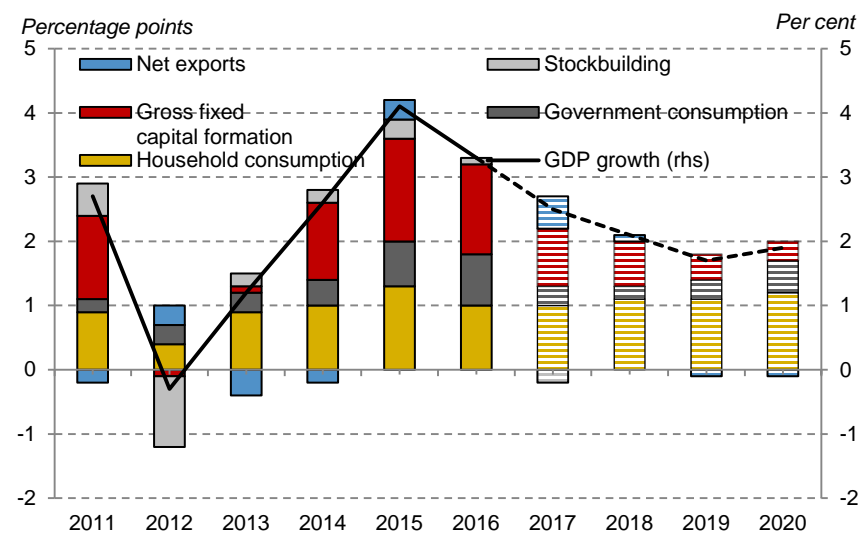
Public consumption was relatively high in 2015 and 2016. One reason for this was the large influx of refugees. Another explanation

is the increased demographic burden on the welfare system as the proportion of young and elderly people in the population rises. In all, public consumption has accounted for a large part of GDP growth over the last two years. However, the growth rate in public consumption is likely to ease off in the future and return to a more normal rate once the costs of taking in refugees start to decrease.

Export growth increased at the end of 2016 and, in import-adjusted terms (not shown in Figure 5.1), is expected to account for the lion’s share of the growth this year and next. The increase covers a broad front: exports of both goods and services have increased rapidly and global demand for Swedish industrial products has grown significantly. Future export growth – of around 4 per cent per year – is in line with the historical average since 1981.

Consumption by Swedish households is growing in line with the average since 2000, although the Economic Tendency Survey suggests that households are taking a more optimistic view of the economy than normal. According to the NIER, major reasons for this are a modest growth in real incomes and wealth, and in increase in precautionary and buffer saving.

Figure 1.5 GDP development and expenditure components, 2011–2020



Note: The line shows the change in GDP at constant prices, in relation to the previous year. The bars show how the various expenditure components contributed to the change in GDP.
Source: NIER (2017b).

1.3 The labour market

Developments in the Swedish labour market include both positive and problematical elements. Employment levels have made a quick recovery since the financial crisis, and are higher in Sweden than any other EU country. At the same time, unemployment remains high, and the Government's target for Sweden to have the lowest unemployment in Europe by 2020 looks very hard to achieve. A particular problem is the trend towards growing differences in labour market outcomes between different groups, particularly between those born in Sweden and those born abroad, and between qualified and unqualified people. There are also signs of aggravated matching problems in the labour market, evidenced by a slow decrease in employment in spite of a relatively rapid increase in the number of vacancies.

In our 2015 report, we highlighted the risks from the conflicts that exist between the Government's unemployment targets and other economic policy targets. There is a risk that fiscal policy stimuli could cause the economy to overheat, as the Government has declared that the unemployment target is to drive economic policy. In our 2016 report, we suggested that the Government should reformulate its unemployment target into separate targets for different groups, including targets for improving labour market integration for asylum immigrants.¹² As more and more of the people who arrived in Sweden in 2015 and 2016 are starting to enter the labour market, a more targeted policy is more important than ever.

In this section, we study developments in the labour market, focusing on labour force participation, employment and unemployment. We compare the Swedish position with the situation in other EU countries and highlight differences in labour market outcomes between different groups.¹³

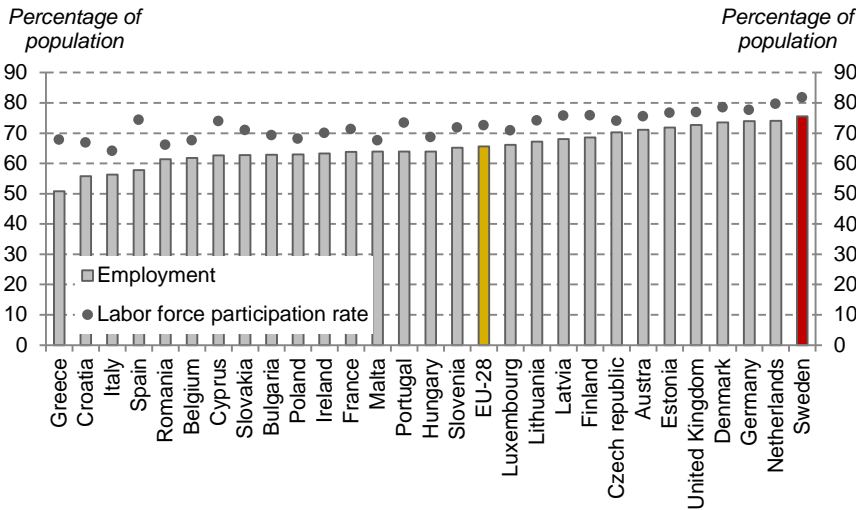
¹² See Fiscal Policy Council (2015) and Fiscal Policy Council (2016). This criticism of the wording of the unemployment target is shared by other analysts; see e.g. SNS (2017), p. 11. Here, the SNS also suggests that the present target should be replaced with appropriate targets to direct the policy towards the areas where there are problems, and that these should focus on shortening the time to employment for marginal groups such as poorly qualified young people, older unemployed persons and refugees and their families.

¹³ The data sources are Statistics Sweden's Labour Force Surveys (LFS), Eurostat and, in some cases, the OECD Employment Outlook. The age boundaries vary somewhat between the sources and variables examined. The LFS have focused on the 16-64 age group for a number of years. Since the mid-2000s, the LFS have also reported figures for the group aged 15-74 (in line with EU Regulations).

1.3.1 Labour force participation and employment

Sweden has a higher labour force participation and a higher employment rate than all the other EU countries (Figure 1.6). The differences in labour force participation and employment between men and women were up to 30 percentage points around 1970, but decreased dramatically in the 1980s and 1990s, stabilising around 3-4 percentage points since the mid-90s (Figure 1.7 and Figure 1.8). The high labour force participation and the high employment rate in Sweden arise mainly from a high uptake among women, particularly older women. The financial crisis had a negligible impact on labour force participation and relatively little effect on the employment rate, particularly compared to other EU countries and with the crisis in the early 1990s. In the period 2010–2016, the employment rate increased by 4 percentage points for the 16-64 age group and by 2.7 percentage points for the 15-74 age group. The number of hours worked increased by 4 per cent in the same period.¹⁴

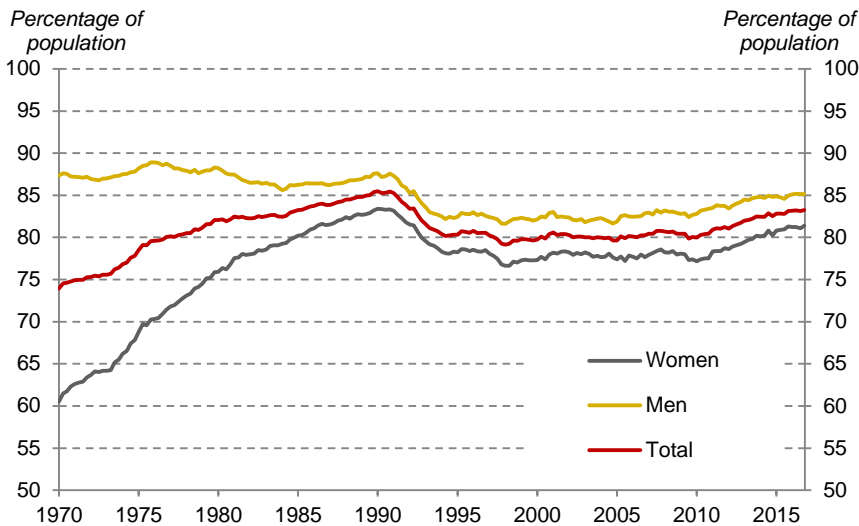
Figure 1.6 Employment levels and labour force participation in the EU



Note: Age 15–64, 2015.
Source: Eurostat.

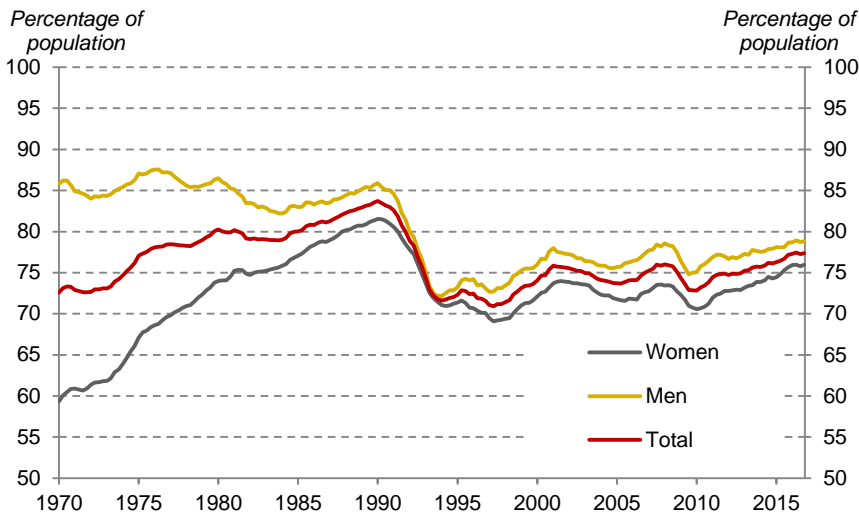
¹⁴ Figure for hours worked are hours per person aged 15–74.

Figure 1.7 Labour force participation among women and men



Note: Seasonally-adjusted quarterly data. Age 16-64.
Source: SCB (LFS).

Figure 1.8 Employment levels among men and women



Note: Seasonally-adjusted quarterly data. Age 16-64.
Source: SCB (LFS).

The aggregated employment figures mask big differences between people born in Sweden and those born abroad, and between qualified and unqualified people. Figure 1.9 shows the change in the employment rate since 2005 by level of education and birth region.

We will focus on the ‘core groups’ in the labour market, in the 25–54 age range, and will mainly look at differences in outcomes between the well-qualified (post-upper secondary education) and poorly qualified (pre-upper secondary only) and differences in outcomes between persons born in Sweden and those from outside Europe.¹⁵

For people born in Sweden, the employment gap based on education – the difference in employment rate between qualified and poorly qualified persons – has increased over time. It reached 20 percentage points in 2016. It is likely that some of this increase is driven by shifts in the population. The proportion of the population aged 25–54 not completing upper secondary school has decreased dramatically since the early 1970s (from 60 per cent to under 10 per cent today). As more and more people go on to higher education, the group with limited qualifications is being gradually drained of attributes favouring access to the labour market.¹⁶ For persons born outside Europe, the employment gap based on education is also increasing over time: from 16 percentage points in 2005 to 27 percentage points in 2016. The trend in employment is slightly positive for well-educated people born outside Europe and slightly negative for low-skilled people from the same birth region.

For low-skilled people, the employment gap based on education – the difference in employment rate between persons born in Sweden and outside Europe – is relatively stable over time and stands at around 30 percentage points. For well-qualified people, the gap decreased from 27 to 21 percentage points in the period 2005–2016. It should be noted that the employment gap between low-skilled people born in Sweden and educated persons born outside Europe was *positive* and reached 14 percentage points in 2005. The difference did then decrease, but it is noteworthy that the employment rate among qualified persons born outside Europe is still no higher than it is for unskilled people born in Sweden.

The differences in labour force participation between different groups are smaller than the differences in employment.¹⁷ One reason is probably that labour force participation entitles people to

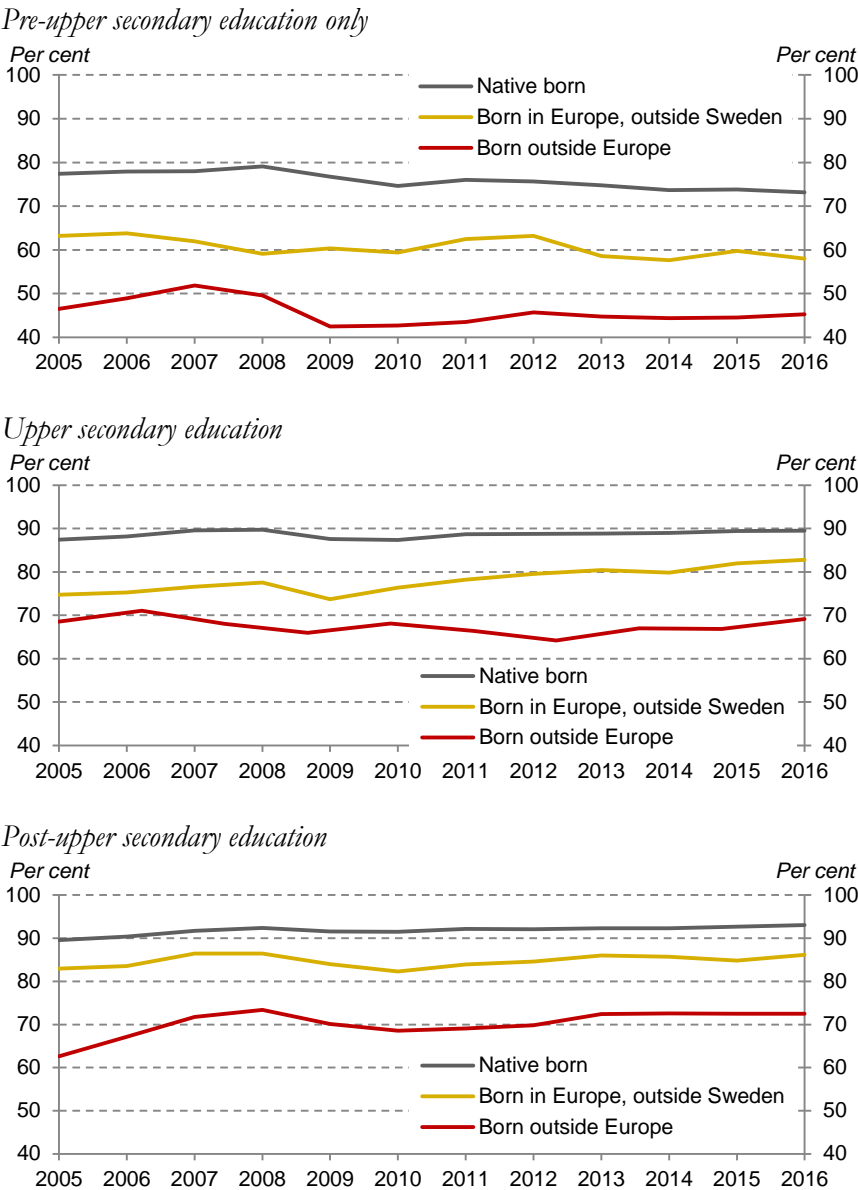
¹⁵ The large number of asylum-seekers in 2015 does not affect the comparisons because most of these people were not entered in the population register by 2016.

¹⁶ See Bengtsson et al. (2014) for a more detailed discussion and empirical evidence.

¹⁷ The difference in employment rate between people born in Sweden and those born abroad in the 16–64 age group was 15 percentage points in 2016, while the difference in labour force participation was 7 percentage points.

unemployment benefits or participation in labour market programmes.

Figure 1.9 Employment rate by level of education and origin

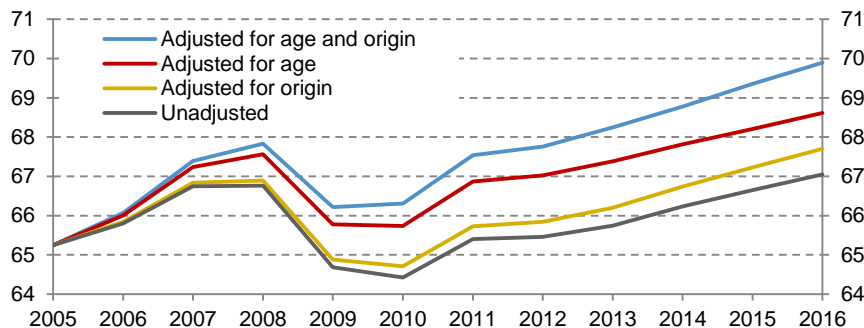
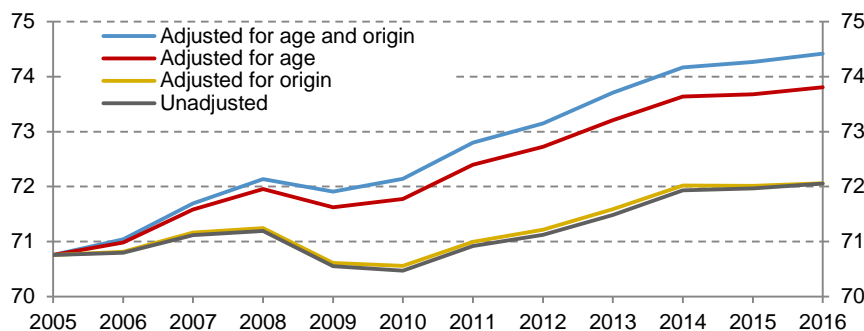
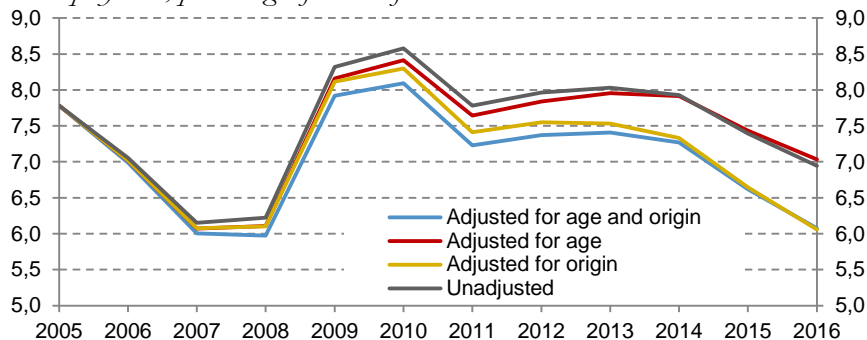


Note: Percentage of population aged 25-54.
Source: SCB (LFS) and own calculations.

The proportion of people born in Sweden in the 15–74 age group has decreased, while the percentage from outside Europe has almost doubled since 2005 (from 5.8 to 10.8 per cent). This demographic development has a ‘mechanical’ effect on the aggregated outcome for labour force participation and employment rate. The top chart in Figure 1.10 shows the employment rate for the 15–74 age group, adjusted for changes in the composition of the population in terms of age and origin.¹⁸ As can be seen from the chart, the demographically adjusted employment figures have increased much faster than the actual employment rate. The difference from actual employment is due to the population breakdown by both age and origin. In terms of age structure, the percentages of the population aged 35–44 and 55–64, which both have a high average employment rate, have fallen. At the same time, the groups of young (aged 20–24) and older people (65–74), where the employment rate is much lower, have increased as a proportion of the population. This demographic trend has also tended to slow the increase in the aggregate employment rate. Adjusted for demographic changes, the employment rate has risen by almost 5 percentage points since 2005.

Labour force participation is less affected by the demographic adjustment. The effect overall is roughly half as big, and the breakdown by age is the predominant factor. All in all, this means that adjusted unemployment has fallen faster than the actual rate. For the last few years, the demographic effect equates to about one percentage point lower unemployment compared to 2005, attributable entirely to the breakdown by origin.

¹⁸ An adjusted employment outcome is obtained by keeping the breakdown of the population into three groups by origin (Sweden, rest of Europe, outside Europe) and seven age-groups (15–19, 20–24, 25–34, 35–44, 45–54, 55–64, 65–74) constant at 2005 levels. The actual values for each group’s employment rate are then applied.

Figure 1.10 Actual and adjusted labour market outcomes*Employment rate, percentage of population**Labour force participation, percentage of population**Unemployment, percentage of labour force*

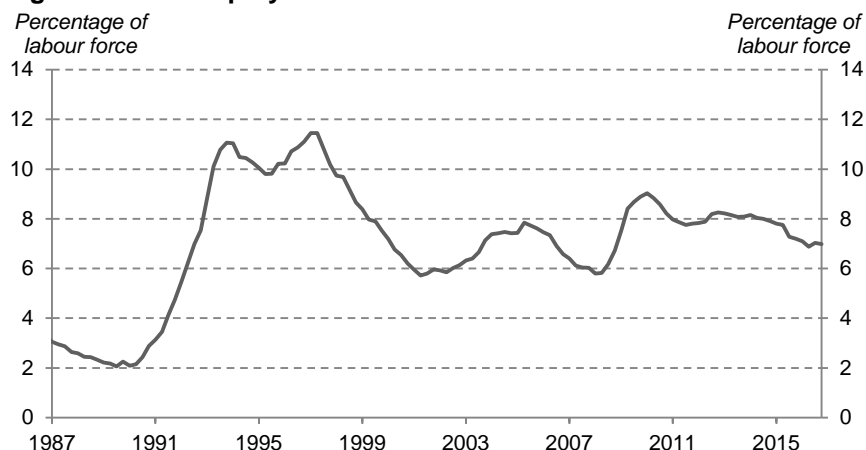
Source: SCB (LFS) and own calculations.

Note: An adjusted employment outcome is obtained by keeping the breakdown of the population into three groups by origin (Sweden, rest of Europe, outside Europe) and seven age-groups (15–19, 20–24, 25–34, 35–44, 45–54, 55–64, 65–74) constant at 2005 levels. The actual values for each group's employment rate and labour force participation are then applied. The adjusted unemployment rate \hat{u} is then the remainder from the calculations of the adjusted employment rate \hat{e} and adjusted labour force participation \hat{l} , i.e. from the formula $\hat{e} = (1 - \hat{u})\hat{l}$.

1.3.2 Unemployment and under-employment

In the 1970s and 1980s, Swedish unemployment was between 2 and 4 per cent. The crisis in the 1990s brought a dramatic change in the unemployment figure, which went over 10 per cent (Figure 1.11).¹⁹ Since the turn of the century, unemployment has fluctuated between 6 and 9 per cent, with the biggest increase accompanying the financial crisis in 2008–2009. At the end of 2016, unemployment was still about one percentage point higher than the level before the financial crisis. Twelve of the EU-28 countries had a lower unemployment rate than Sweden in 2015–2016 (Figure 1.12).²⁰

Figure 1.11 Unemployment in Sweden 1987–2016



Note: Seasonally adjusted quarterly data. Group aged 16–64.

Source: SCB (LFS).

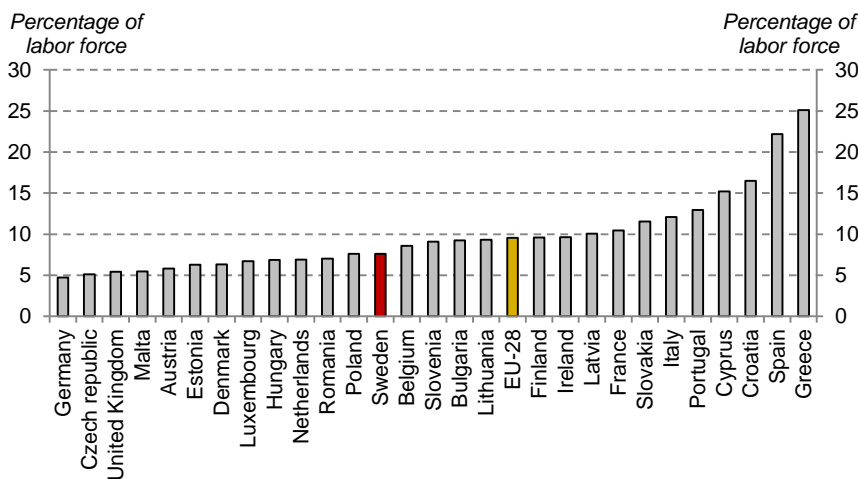
A broader measure of unemployment also includes the *under-employed* (persons working less than they would like, who could work more) and *latent job-seekers* (persons outside the labour force who are willing and able to work). By aggregating a (desired) capacity in hours among unemployed and under-employed persons and latent job-seekers, we obtain a measure of the total *unused* labour supply. The total supply is obtained from the sum of the unused supply and the *used* supply, i.e. the actual number of hours worked by employed persons. The ratio between the unused and total supplies gives a measure of

¹⁹ The unemployment time series combine current and older series to match current definitions. Among other things, this means that full-time students looking for work count as unemployed.

²⁰ Unemployment for the 16–64 and 15–74 age groups is almost identical (the differences are no more than a tenth of a percentage point).

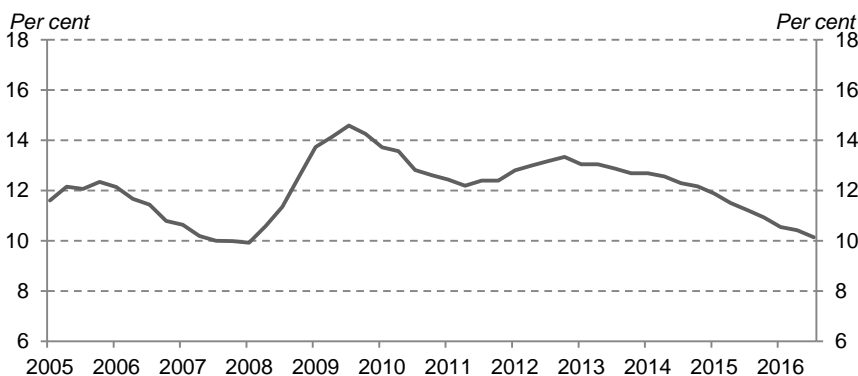
unemployment (‘hourly unemployment’) which is analogous to the conventional measure of unemployment but takes account of actual and desired working hours, and is also broader in that it includes the under-employed and latent job-seekers. Hourly unemployment has fluctuated between 10 and just over 14 per cent since 2005 and has displayed a marked decrease in recent years (Figure 1.13). At the end of 2016, hourly unemployment had reached roughly the level that obtained before the financial crisis (10 per cent).

Figure 1.12 Unemployment in the EU, 2015



Note: Group aged 15-64.
Source: Eurostat and own calculations.

Figure 1.13 Unused labour supply (hourly unemployment)

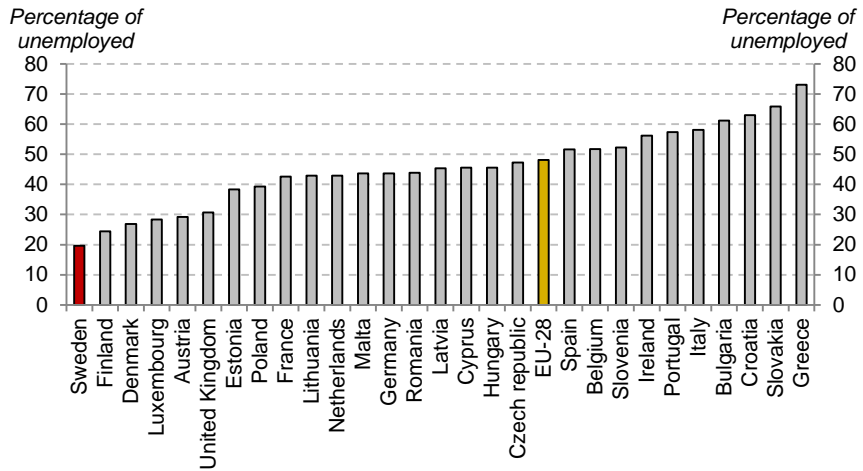


Note: Hourly unemployment is a measure of the unused supply of working hours as a percentage of the total supply of working hours. It includes under-employed people and latent job-seekers.
Source: SCB (LFS).

Under-employment (part-time unemployment) is roughly the same in Sweden as in other EU countries (4.1 per cent of the labour force in 2015 both for Sweden and as an average for the EU-28). Latent job-seekers are less common in Sweden than in other EU countries (2.4 per cent in Sweden and 3.8 per cent in the EU as a whole).

Long-term unemployment is relatively low in Sweden, and is the lowest in the EU according to a widely-used indicator (percentage of people unemployed for a whole year); see Figure 1.14. Part of the reason is probably the fact that Sweden has extensive labour market policy measures which break up periods of ‘open’ unemployment. If we look instead at the Swedish Public Employment Service’s activity statistics from October 2016, 40 per cent of those registered had had a period out of work exceeding 12 months.²¹ Of the EU countries, Denmark has the most ambitious active labour market policy, measured as a percentage of GDP (1.9 per cent in 2014) followed by Sweden (1.3 per cent of GDP) and Finland (1.1 per cent).²² As can be seen from Figure 1.16, Denmark and Finland also have a low rate of long-term unemployment.

Figure 1.14 Percentage of long-term unemployed in the EU, 2015



Note: To count as long-term unemployed, a person must have been out of work for at least a year.
Source: Eurostat.

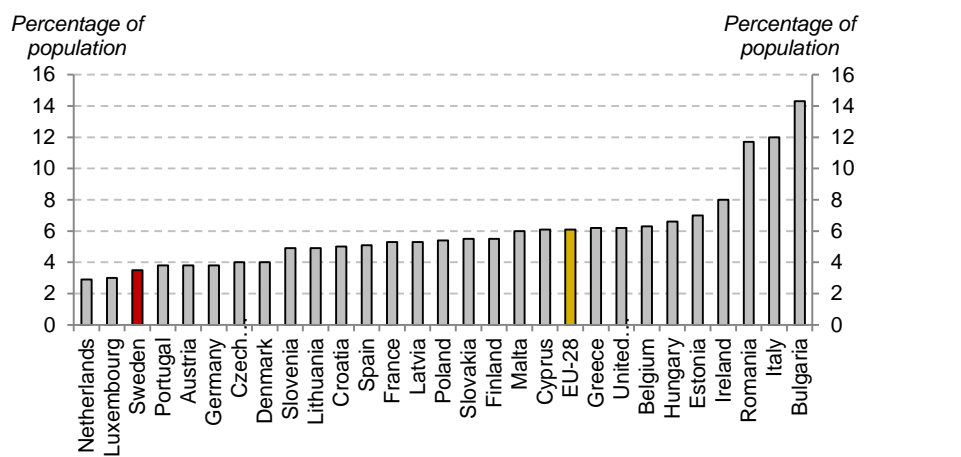
²¹ This is the Swedish Public Employment Service’s definition of long-term unemployment. For people registered as unemployed and aged up to 25, the definition is ‘out of work for more than six months’; see Swedish Public Employment Service (2016). The criterion used to count a person as unemployed differs between the LFS and the Swedish Public Employment Service, and the group only partly overlaps between the two sources; see SCB (2016b).

²² Source: OECD (2016a).

Youth unemployment as conventionally measured is almost twice as high in Sweden (19 per cent) as in Denmark (12 per cent), and almost three times as high as in Germany (7 per cent). The average for the EU is 19 per cent - the same as for Sweden.²³ In the period 2010–2016, youth unemployment in Sweden fell from 25 to 19 per cent. Around half of unemployed Swedish young people are full-time students looking for work, including people at upper secondary school. Differences between the countries when it comes to youth unemployment are heavily influenced by differences in the education systems, particularly the existence of sandwich courses which cause students looking for jobs to be classed as employed rather than unemployed.²⁴

In recent years, a new indicator of young people’s labour market outcomes has been produced within the EU. The intention is to measure the degree of ‘inactivity’ among young people, and the indicator is known by the acronym NEET (‘not in employment, education or training’). NEET includes people who have no jobs and are not pursuing formal or informal studies. Participants in some labour market programmes are classed as students.²⁵

Figure 1.15 Inactive young people (‘NEETs’) in the EU in 2015



Note: Group aged 15-24.
Source: Eurostat.

²³ Refers to the 15-24 age group, 2016.
²⁴ See SCB (2013).
²⁵ The LFS report NEET for four five-year age groups (15-19, 20-24, 25-29 and 30-34).

NEETs in the 15-24 age group varied between 7 and 10 per cent in the years 2007–2016 (see Figure 1.15). Compared to most EU countries, the Swedish figures have been relatively low. In Sweden, the NEET figure is highest for the 20-24 age group (9 per cent in 2016) and lowest for the 15-19 age group (3 per cent in 2016). NEET is much higher among young immigrants (almost 10 per cent in 2016) than among those born in Sweden (6 per cent).

Many older people who become unemployed find it hard to get a new job within a reasonable time. On the whole, however, the position of older people in the labour market has improved since the mid-2000s. The employment rate in the 55-64 age group increased from 70 to 76 per cent in the period 2005 to 2016. For the 65-74 age group, employment increased from 10 to 16 per cent in the same period. The rise in employment was driven by an increase in labour force participation. Unemployment among older people also increased slightly (by just under one percentage point), but it is and has been much lower than for the labour force as a whole. Unemployment among older people is lower in Sweden than in most other EU countries.²⁶

The fact that the positive trend in employment for older people has coincided with a slight increase in unemployment shows that there may sometimes be a conflict of goals between high employment and low unemployment. Faster growth in the labour force can bring higher unemployment via a larger influx into unemployment. A larger labour force may also cause longer periods of unemployment as more people in the labour force have relatively low productivity.

All in all, it is very challenging to increase employment in groups with a weak affiliation to the labour market, particularly asylum immigrants with poor qualifications. As more and more new arrivals enter the labour market, the importance of a more targeted policy increases. In its 2016 report, the Council discussed e.g. the need to allow simple jobs to emerge. Our view of the state of research is that changes to minimum wages have relatively small effects on employment in general. However, the research suggests that the effects are greater for vulnerable groups, particularly if the minimum

²⁶ OECD (2016a) reports unemployment among older people for 23 EU countries. Three of these have lower unemployment among older people than Sweden.

wages are comparatively high in the first place, as in Sweden.²⁷ Two extensive reports on the Swedish labour market were published in the spring, from the SNS Economic Policy Council, and from the Swedish Labour Policy Council. Both reports make suggestions for lowering the thresholds for entry into the labour market, including the emergence of simple jobs, but also emphasise the importance of early action in the form of training and placements.²⁸

1.4 Income distribution

The Council's remit also includes 'analysing the effects of fiscal policy on the distribution of wealth in the short and the long term.'²⁹ This section provides an overview of income development since 1995, focusing especially on what has happened in the last five years. For an in-depth analysis, see the Council's earlier reports.³⁰

1.4.1 Distribution of disposable income

The Council has previously noted that income differences in Sweden have increased over the last two decades. Between 1995 and 2013, incomes above the median rose faster than those below.³¹ The highest incomes increased by 115 per cent, compared to 40 per cent for the lowest (Figure 1.16).

However, disposable incomes rose in real terms for all income groups: the average increase in income for the whole population was approx. 70 per cent (median income increased by almost 60 per cent). The distribution of income increases in the period is not significantly altered by the fact that capital gains, i.e. profit or loss from the sale of assets (e.g. shares, units or properties) are excluded.

Figure 1.17 shows how average disposable incomes have developed in each decile group since 2011. In the last five years, the change has been more evenly distributed. The lowest incomes – in

²⁷ See Fiscal Policy Council (2016), p. 79-80.

²⁸ See SNS (2017) and Swedish Labour Policy Council (2017).

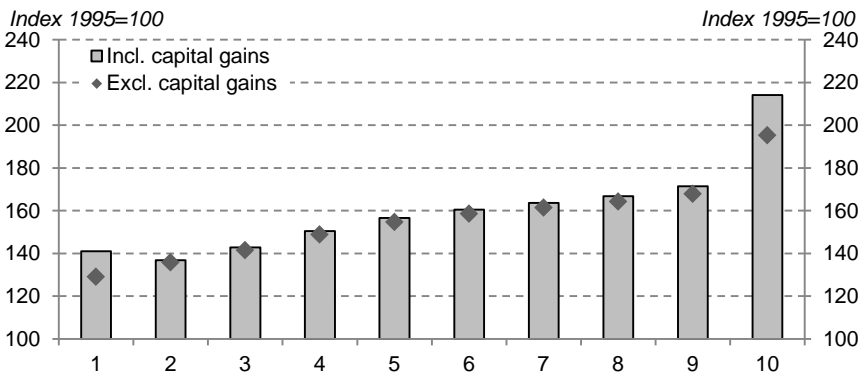
²⁹ Section 8 of Ordinance (2011:446) states that the Council *may* evaluate the effects on income distribution.

³⁰ See e.g. Fiscal Policy Council (2015) and (2016).

³¹ From the 2014 survey year onwards, Statistics Sweden changed its method of analysing income distribution from a sample-based (HEK) to a register-based (TRIF) method. The new statistics are now reported from 2011 onwards and the old up to 2013. We will therefore analyse the periods 1995-2013 and 2011-2015 separately. To find out more about the changes, see SCB (2015).

decile group 1 – have increased faster than the median in this period. In spite of this, the spread in incomes is still widening because the highest incomes have risen at a much faster rate than other incomes.

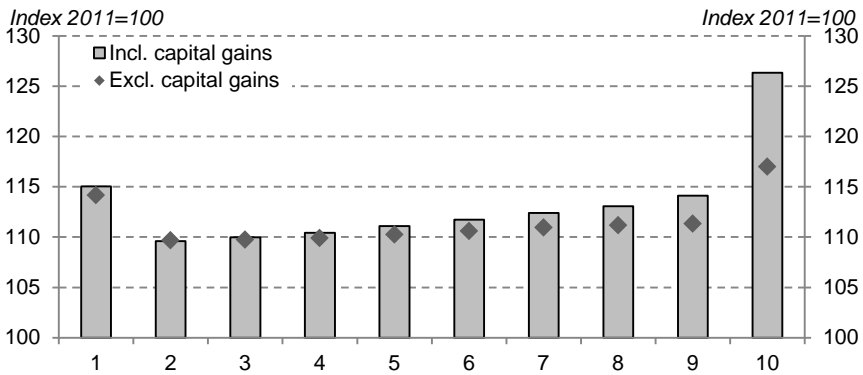
Figure 1.16 Average disposable income by decile group, 1995–2013



Note: 2013 disposable incomes, indexed to base year 1995. Disposable income is the sum of all taxable and tax-exempt income, minus tax and other negative transfers. The incomes are calculated at fixed prices (2014 price levels). The sorting by size of income is done separately for incomes including and excluding capital gains, so the same individuals are not necessarily included in the various decile groups for both measures.

Source: SCB (HEK) and own calculations.

Figure 1.17 Average disposable income by decile group, 2011–2015



Note: 2015 disposable incomes, indexed to base year 2011. Disposable income is the sum of all taxable and tax-exempt income, minus tax and other negative transfers. The incomes are calculated at fixed prices (2015 price levels). The sorting by size of income is done separately for incomes including and excluding capital gains, so the same individuals are not necessarily included in the various decile groups for both measures.

Source: SCB (TRIF) and own calculations.

It is clear that capital gains had a bearing on the income increases among those with the highest incomes, but even if capital gains are excluded, the highest incomes have risen the fastest.

Between 2014 and 2015, disposable incomes (including capital gains) increased by an average of 5.5 per cent (Table 1.3). This is an unusually big jump compared to the last twenty years or so. The differences between different income groups are still substantial. Incomes in the upper part of the distribution have risen fastest, but the lowest incomes have still to make up some of the gap to the median. Overall, then, the most up-to-date figures still show income differences increasing.

Table 1.3 Average annual percentage change in income

<i>Percentage change</i>	1995–2011	2011–2015	2014–2015
Decile group 1	1.8	3.6	4.6
Decile group 2	1.8	2.3	2.7
Decile group 3	2.1	2.4	3.0
Decile group 4	2.5	2.5	3.1
Decile group 5	2.7	2.7	3.3
Decile group 6	2.8	2.8	3.5
Decile group 7	2.9	3.0	3.7
Decile group 8	3.1	3.1	3.9
Decile group 9	3.2	3.4	4.2
Decile group 10	4.6	6.0	10.9
All	3.1	3.7	5.5
Median	2.8	2.7	3.4

Note: Disposable income including capital gains.

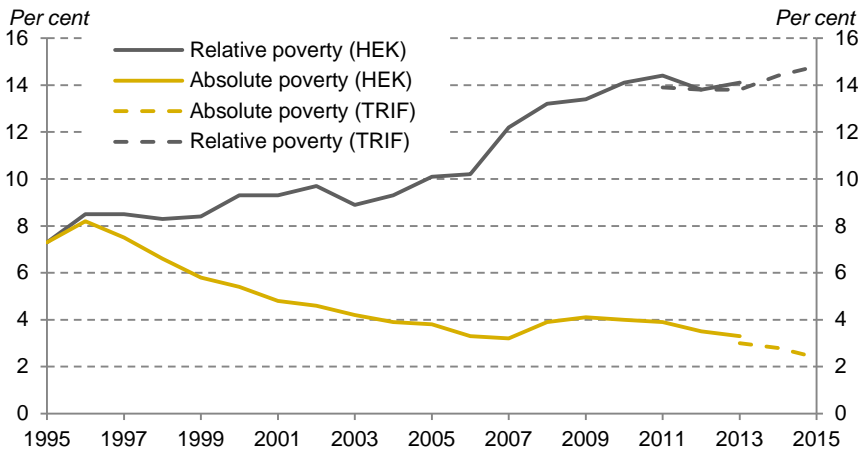
Source: SCB (HEK and TRIF).

1.4.2 Absolute and relative poverty

The increased spread of incomes has led to an increase in relative poverty since 1995, a trend which has continued in recent years (see Figure 1.18). The proportion in relative poverty has increased in just over 20 years from approx. 7 per cent to almost 15 per cent. In the same period, the percentage in absolute poverty has fallen from 7 per cent to just over 2 per cent.³² All parts of the population have therefore gained higher real incomes, but not equally quickly. Absolute poverty increased slightly between 2007 and 2008. This is partly because the lowest incomes fell sharply between these years, and partly because average income (including capital gains) fell slightly.

³² See note to Figure 1.22 for an explanation of the difference between absolute and relative poverty.

Figure 1.18 Absolute and relative poverty



Note: Relative poverty relates to the percentage of people living in a household with a disposable income per consumption unit of less than 60 per cent of the median value for all individuals in a given year. Absolute poverty relates to the percentage of people living in a household with a disposable income per consumption unit of less than 60 per cent of the median value for 1995 price-adjusted income. The chart uses two different data sources, HEK and TRIF. The reason for this is that Statistics Sweden changed its method of analysing income distribution from the 2014 survey year onwards; see SCB (2015).

Source: SCB (HEK and TRIF) and Ministry of Finance.

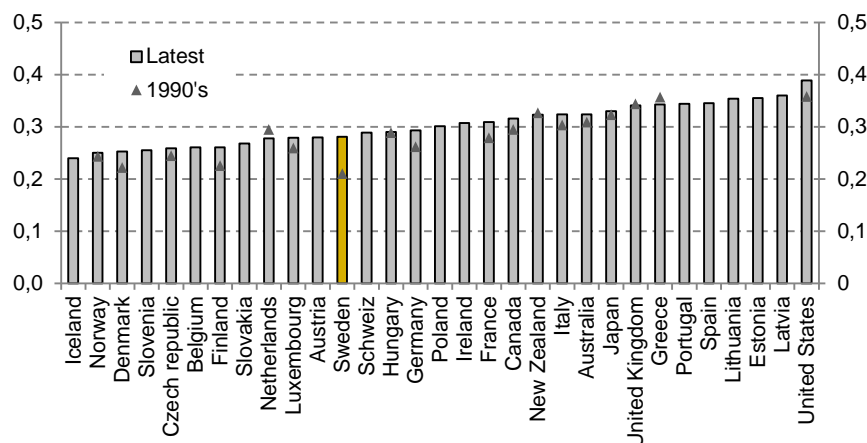
1.4.3 The Gini coefficient

An international comparison shows that Sweden has a relative small spread of incomes. The Gini coefficient, a measure of how unequally incomes are distributed in a given country, is low compared to most EU countries (Figure 1.19).³³ However, several comparable countries, including our Nordic neighbours, have a smaller spread. Figure 1.19 also shows that the Gini coefficient in Sweden is higher now than it was in the 1990s, which confirms that the spread of incomes has increased. A contributory factor is the fact that the Swedish transfer system has become less and less redistributive since the mid-1990s.³⁴

³³ See note to Figure 1.19. For a definition of the Gini coefficient, see e.g. Sen (1973).

³⁴ For a more detailed discussion of redistribution in the Swedish taxation and transfer system, see Fiscal Policy Council (2015).

Figure 1.19 Gini coefficient for adjusted disposable income, international comparison



Note: The Gini coefficient is a number between 0 and 1, where 0 means that incomes are completely equally distributed and 1 means that all income goes to one individual. The figures relate only to the latest available years, and the average for the 1990s.

Source: OECD (Income Distribution and Poverty Database).

1.5 Assessments and recommendations

The prospects for the global economy have improved and currently look relatively bright, but there are significant risks on the downside, particularly political and geo-political. If these risks come to fruition, they could threaten the recovery in the global economy. This will have a big impact on Sweden, which is a small, open economy with great exposure to the world around it.

The Swedish economy is in a broad upturn, as confirmed by various different indicators. Exports are driving much of this, along with comparatively high levels of investment. Analyses by the NIER and the Riksbank were pointing to a positive output gap for the years 2016–2018 as early as the autumn of 2016, while the Government only came round to this view in VP17. We note that resource utilisation in the Government's assessment is still out of line with the analyses by the NIER and the Riksbank.

The main problem in the Swedish labour market is the big differences in employment and unemployment between persons born in Sweden and those born outside Europe. High thresholds to entry into the labour market make life hard for groups with the most tenuous connection to the labour market. At the same time,

unemployment among highly-qualified individuals born in Sweden is very low, and companies have difficulty finding workers with the desired skills. Economic policy faces major challenges when it comes to promoting employment in groups with a weak affiliation to the labour market. The differences between the various groups are hardly affected at all by a general fiscal and monetary policy, but need to be addressed with structural measures in the areas of labour market and educational policy.³⁵ In earlier reports, we have questioned the Government's target of the lowest unemployment in the EU by 2020, and argued instead for more directed goals and initiatives, such as separate targets for faster entry into the labour market for new arrivals in Sweden. In the past, the Council has also discussed the need to lower the thresholds to entry into the labour market and facilitate the emergence of simple jobs. We stand by these conclusions and believe that action in this direction is now even more urgent.

The high level of asylum immigration in the second half of 2015 has tailed off, partly because of the migration agreement. It is unclear, however, whether asylum immigration will increase again once the temporary legislation ceases to apply. The uncertainty that prevails in this area has a major bearing on the shaping of economic policy going forward.

The income differences have increased since 1995 and this trend has continued in recent years. This means that the proportion of people in relative poverty is still rising, although absolute poverty has fallen steadily since 1995. The increased differences in income can also be seen from the Gini coefficient, which has risen noticeably since the 1990s.

³⁵ A detailed discussion of various structural measures to reduce this division can be found in SNS (2017).

2 Equilibrium unemployment and matching in the labour market

Equilibrium unemployment is a key concept in economic theory and monetary and fiscal policy. It represents long-term unemployment when the effects of various type of disruption have played out. The Government's view of equilibrium unemployment is intended both to enable a calculation of structural net pending and to assess the need for structural measures and provide support for economic policy. The level of equilibrium unemployment affects estimates of potential GDP, i.e. the level of production that can be maintained in a 'balanced' or 'normal' economic situation. The difference between actual and potential GDP – the 'output gap' – is thus closely related to what we might call the 'unemployment gap', defined as the difference between actual unemployment and equilibrium unemployment.¹

Equilibrium unemployment cannot be directly observed in the data but has to be estimated from econometric models or by other methods. Different models and methods often give different results and, in practice, there is great uncertainty as to the level of equilibrium unemployment and hence also the level of potential GDP and the output gap.

2.1 Theoretical background

Equilibrium unemployment is thus long-term unemployment after the effects of real or nominal distortions have been factored out. A related concept is NAIRU, which stands for 'non-accelerating inflation rate of unemployment'. The concept of NAIRU has its roots in the 'Phillips curve', which describes the relationship between inflation and unemployment. NAIRU is the level of unemployment consistent with a constant rate of price inflation.² A similar definition focuses on wage inflation rather than price inflation, and goes by the acronym NAWRU ('non-accelerating wage rate of unemployment'),

¹ See Chapter 3 for a more detailed description of how potential GDP depends on equilibrium unemployment and other factors.

² A more accurate – but even more awkward – acronym would be NIIRU (non-increasing inflation rate of unemployment).

i.e. the level of unemployment consistent with a constant (nominal) rate of wage inflation.³

Another theory of equilibrium unemployment is based on search and matching models with the emphasis on permanence, with constant unemployment where the influx into unemployment is equal to the exit rate ('flow equilibrium'). These models are usually formulated in real terms and identify factors that affect equilibrium unemployment, but they have no direct implications for price and wage inflation.

A third model of equilibrium unemployment is associated with the work of Richard Layard and Steve Nickell, the 'Layard-Nickell model'.⁴ This model focuses on pricing and wage-setting behaviour, and equilibrium unemployment is the outcome that produces consistency between pricing and wage-setting decisions. Under some conditions, the model can be described in the short term in terms of a traditional Phillips curve. The factors determining equilibrium unemployment broadly match the predictions from the search and matching models.

2.1.1 The Phillips curve and NAIRU

In the 1960s, the prevailing view was there was a stable relationship between unemployment and inflation, as illustrated by a downward-sloping *Phillips curve*.⁵ This inverse relationship between unemployment and inflation could be observed in data for various countries. In the economic policy debate, it was thought that it should be possible to choose between different combinations of inflation and unemployment; an expansive financial or monetary policy could be used to 'buy' lower unemployment at the cost of a higher rate of inflation. The Phillips curve is based on the hypothesis that nominal wage increases get smaller when unemployment is low because there is then a relative shortage of workers. Faster wage increases will be followed by faster price increases if companies set their prices as a mark-up on their wage costs.

³ Other closely related concepts are natural unemployment and structural unemployment, which are often treated as synonyms for NAIRU.

⁴ See Layard et al. (1991).

⁵ According to an influential article by Phillips (1958), who studied the relationship between wage inflation and unemployment in the UK.

In the 1970s, *both* unemployment and inflation increased in a number of countries, a trend which was not consistent with the Phillips curve. There was also a theoretical movement which questioned the earlier received view of the relationship between unemployment and inflation. Economists like Milton Friedman and Edmund Phelps argued that unemployment and inflation are ultimately *independent* of each other. According to these new theories, there was only one level of unemployment consistent with a stable rate of inflation. Milton Friedman called this level ‘natural’ unemployment. In the long run, therefore, the Phillips curve should be *vertical*.

Why is the Phillips curve negative in the short term but vertical in the long term? The reason is that nominal wages are affected not only by the state of the labour market but also by the *expected* rate of inflation. Individuals and trade unions pay more attention to *real wages* rather than nominal wages. That is why they increase their demands for nominal wage rises if the expected rate of price inflation increases. If an expansive policy results in a higher inflation rate, expectations of future inflation will increase in its wake. A higher expected inflation rate may be described as an upward shift of the short-run Phillips curve. Differences between actual and equilibrium unemployment arise out of *inflation surprises*, i.e. differences between actual and expected inflation. NAIRU reflects the unemployment that prevails in the *long term* when the expectations of the players as to wage and price development are realised. See box below.

The traditional NAIRU model using retrospective inflation expectations has been criticised for lacking a well-founded basis in theory, and a number of researchers have tried more recently to develop inflation models with a stronger theoretical underpinning.⁶ These models focus on undertakings that operate under monopolistic competitive conditions with restrictions on their ability to alter prices. It can be shown that one can derive equations for inflation that closely resemble the conventional expectations-augmented Phillips curve. The important difference is in how the inflation expectations are represented.

⁶ See e.g. Roberts (1995) and Galí and Gertler (1999).

Box 2.1 A simple model – the Phillips curve and NAIRU

The relationship between NAIRU and the Phillips curve in the short and the long term can be illustrated with a simple model. Let π be the inflation rate, π^e the expected inflation rate, π_{-1} the inflation rate in the previous period and u unemployment. The ‘expectations-augmented’ short-run Phillips curve can then be expressed as

$$\pi = \alpha - \beta u + \pi^e$$

where α includes variables that affect structural factors in the markets, such as wage bargaining systems and competitive conditions in product markets. The short-term effect of unemployment on inflation is represented by β ; $\beta > 0$. In a state of equilibrium, actual and expected inflation will be equal, i.e. $\pi = \pi^e$, which in turn implies equilibrium unemployment $u^* = \alpha/\beta$. If the inflation expectations are backward-looking, i.e. based on previous actual inflation, $\pi^e = \pi_{-1}$, there will be a relationship between the *change* in the inflation rate and unemployment, i.e. $\pi - \pi_{-1} = \alpha - \beta u$. NAIRU is here the (constant) unemployment which equates to a constant rate of inflation: $u^* = \alpha/\beta$. We can also observe that the inflation rate rises if unemployment is lower than NAIRU and falls if unemployment is higher than NAIRU:

$$\pi - \pi_{-1} = -\beta(u - u^*)$$

In this simple model, equilibrium unemployment can be *quantified* by proposing an equation of the type $\pi - \pi_{-1} = \alpha - \beta u$ which gives values for α and β . However, these estimates are based on the assumption that the Phillips curve is vertical in the long term. In order to *test* this hypothesis empirically, the expectations-augmented Phillips curve can be written as

$$\pi = \alpha - \beta u + \gamma \pi_{-1}$$

where $\gamma = 1$ is the testable NAIRU hypothesis.. The empirical literature in this area includes both quantifications of NAIRU and empirical tests of the NAIRU model. NAIRU may of course vary over time as a result of altered structural conditions on the product and labour markets. Estimates of time-varying NAIRU call for different statistical models than the simple case with constant NAIRU. Various types of statistical filters have been used to extract

the long-term trend in time series data, and this trend has often been interpreted as an estimate of NAIRU.

In the recent (neo-Keynesian) literature, it is expectations of future inflation that affect the current rate of inflation. In the traditional Phillips curve, on the other hand, it is yesterday's expectations of today's inflation that matter.

Akerlof et al. (1996) argued that nominal wage rigidity can give rise to an inverse *long-term* correlation between inflation and unemployment – a negative Phillips curve – with very low inflation figures. Individual companies and industries are constantly exposed to supply and demand problems which tend to alter the relative wages between different companies and occupations. With a moderate rate of inflation, relative pay adjustments can be made by increasing nominal wages at different rates in different areas, but with very low inflation, nominal wage decreases are 'needed' to bring about relative wage changes. If nominal wage decreases are not possible, real wages in one part of the economy will be higher than they would otherwise have been. A policy that keeps inflation very close to zero or leads to deflation (falling prices) could therefore cause unemployment which is permanently higher than the equilibrium level reached if inflation is above a certain minimum level.

Akerlof et al. (2000) presented a related model which also implies a long-term negative correlation between inflation and unemployment at low inflation rates. The model is influenced by evidence from the psychological literature which suggests, among other things, that some players display limited rationality (or 'near rationality'). Limited rationality combined with low inflation means that many companies choose to ignore inflation when setting wages and prices. The costs of ignoring inflation become greater as inflation rises. The effect on inflation of a higher expected inflation rate will depend on how high the inflation is. The long-run Phillips curve will be hump-shaped: negative with low inflation, vertical at high inflation and positive in between. Equilibrium unemployment is then not unique; there is a range of possible unemployment levels which are all compatible with stable inflation, and unemployment will be minimised at a certain level of inflation.

2.1.2 Search and matching models

Simple NAIRU models based on the Phillips curve do not provide much information on the factors that affect equilibrium unemployment. What are the effects of changes to the tax system or unemployment insurance, for example, or the costs of hiring and firing workers? Search and matching models have therefore become the dominant theoretical framework for analysing equilibrium unemployment. This theoretical framework describes the interplay between job-seeking individuals and companies looking for workers, and focus on real outcome variables such as unemployment and real wages. The labour market is characterised by search frictions which cause unemployment and vacancies to arise at the same time.⁷

Two key concepts in this theory are the matching function and the Beveridge curve. The matching function is an aggregated production function and describes how the flow of new hires depends on input factors in the matching process, i.e. the number of job-seekers and the number of vacant positions. The Beveridge curve can be derived from the matching function and shows co-variations between unemployment and vacant jobs. In a normal economic situation, the correlation between unemployment and vacancies is negative; unemployment is low when there are many vacant positions and high when there is a shortage of vacancies. The position of the Beveridge curve is affected by the outflow from unemployment into work, but also by the inflow into unemployment from people in work (or from groups outside the labour force). Less efficient matching leading to longer periods of unemployment will mean higher unemployment with a given number of vacancies; the Beveridge curve will shift upwards. Faster structural change causing more workers to be dismissed will normally also mean a larger inflow into unemployment and higher unemployment for a given number of vacancies. The Beveridge curve is shifted upwards in this case too. More effective matching between vacancies and unemployed people will shift the Beveridge curve downwards; unemployment will be lower at any given level of vacancies.

The search and matching models cover not only the Beveridge curve but also the relationships which characterise wage-setting and job creation. These relationships may be summarised as a 'supply

⁷ See e.g. Pissarides (2000).

curve for vacancies' producing a positive correlation between vacancies and unemployment. Higher unemployment tends to push real wages down, which in turn increases the incentive for companies to create more vacant posts. The long-term equilibrium in the labour market is given by the intersection between the supply curve for vacancies and the long-term Beveridge curve, i.e. the relationship that pertains when the inflow into and outflow from unemployment balance each other out.

With the aid of search and matching models, we can study a number of determining factors for equilibrium unemployment, such as unemployment benefits, taxes and the costs of hiring and firing workers. Some of these factors may however be difficult or impossible to observe, such as vacancy costs and indicators of the parties' bargaining power when it comes to pay. The models can also be used to study regional and occupational imbalances between unemployed persons and vacant jobs ('mismatches').⁸

2.2 What do empirical studies show?

There is international literature and a number of Swedish studies on equilibrium unemployment.⁹ Some of these studies involve models for pricing and wage-setting, basically variants of the Phillips curve or the Layard-Nickell model. Many studies present quantifications of NAIRU (or NAWRU) based on untested assumptions that the long-run Phillips curve is vertical. Other studies attempt an empirical test of the NAIRU hypothesis. The results are mixed and very sensitive to the parameters and assumptions used.

Forslund (1995) drew up a Layard-Nickell model focusing on Swedish price and wage formation in order to calculate how equilibrium unemployment changed in the period 1990–1993. One major finding was that just a fifth of the big increase in unemployment could be tied to increased equilibrium unemployment.

Other studies are based on so-called UC models.¹⁰ The studies by Assarsson and Jansson (1998) and Apel and Jansson (1999) are two

⁸ See e.g. Marthin (2012).

⁹ See Forslund (2008) for a summary of Swedish papers.

¹⁰ The acronym UC stands for 'unobserved components' and means, among other things, that the long-term trend in unemployment is modelled using statistical filters.

examples with very different results. According to the former, Swedish equilibrium unemployment is almost perfectly correlated with actual unemployment from the early 1970s to the mid-1990s; in the latter, however, equilibrium unemployment can be quite well described by an almost linear positive trend for the period 1980–1996. A different pattern emerges in the study by Lindblad and Sellin (2003). This indicates a rise in Swedish equilibrium unemployment in the period 1980–1985 and a relatively stable level thereafter. Persistence effects are taken into account in a study by Mossfeldt and Österholm (2011). Here, higher structural unemployment spills over to some extent into a higher NAIRU. The effect is significant and implies that NAIRU in Sweden rose by 4.5 percentage points between 1992 and 1999.

The Ministry of Finance report from 2011 on ways of assessing developments in the labour market outlines various models for equilibrium unemployment. The models differ in the extent to which they take account of persistence effects. The estimates of equilibrium unemployment for 2006 vary across the different models, ranging from 5.8–6.7 per cent. The uncertainty is considerable: a 95 per cent confidence interval covers around 3–4 percentage points.¹¹ The Ministry of Finance (2011b) assessment of the development of equilibrium unemployment from 1980–2006, based on the model from Lindblad and Sellin (2003), is shown in Figure 2.1.¹²

As mentioned earlier, there are reasonable technical objections to the hypothesis of long-term independence between inflation and unemployment.¹³ Several empirical studies support the hypothesis of a negative long-term correlation between inflation and unemployment when inflation is low. A study based on Swedish data finds some support for a hump-shaped long-run Phillips curve with a negative slope at low inflation. The estimates suggest that an increase in the Swedish inflation target from 2 to 4 per cent would reduce unemployment in the long term by several percentage points.¹⁴

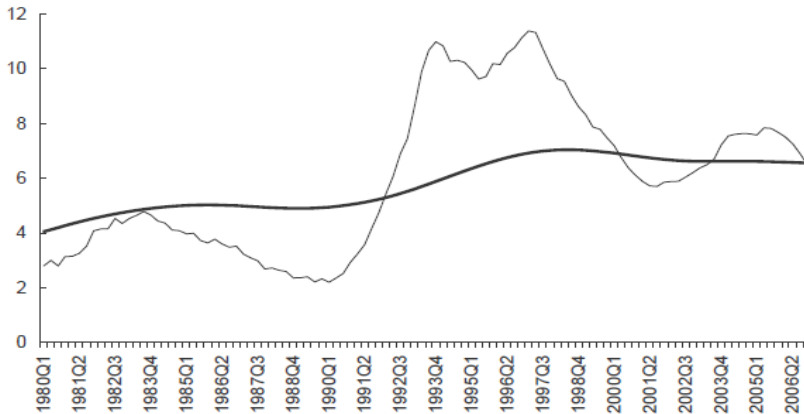
¹¹ The uncertainty is of roughly the same order as that estimated for NAIRU in the USA (Staiger et al., 1997).

¹² Ministry of Finance (2011b) is an official enquiry by the economic section. The time series for equilibrium unemployment in the chart has been smoothed with a so-called HP filter.

¹³ See Akerlof et al. (1996) and (2000).

¹⁴ See Lundborg and Sacklén (2006).

Figure 2.1 Equilibrium unemployment and actual unemployment 1980–2006 according to Ministry of Finance (2011)



Note: The thick line is equilibrium unemployment and the thin line is actual unemployment.
Source: Ministry of Finance (2011b).

2.3 NAWRU models

Most international studies of equilibrium unemployment based on the Phillips curve focus on NAIRU, the level of unemployment consistent with a stable rate of price inflation. Within the EU and the OECD, on the other hand, people have often chosen to study NAWRU, the level of unemployment consistent with constant wage inflation. The time series for price and wage inflation are strongly correlated, and it possible that the results for equilibrium unemployment are not significantly affected by the series used. However, there appear to be no systematic studies of this issue.

2.3.1 Estimates from the European Commission

The Swedish Government's present assessment of equilibrium unemployment for the years 1996–2015 is based entirely on the European Commission's estimate. This in turn is based on estimates from the NAWRU model developed at the Commission.¹⁵ The NAWRU model has its roots in various OECD reports from the 1990s, and studies the historical relationship between wage growth

¹⁵ See Ministry of Finance (2016) and Havik et al. (2014).

and the unemployment gap.¹⁶ The Swedish estimates use aggregated time series data from the start of the 1960s and also include forecast data. The model has been derived for all EU countries and provides information on how NAWRU has changed over time.

From 2014 onwards, the European Commission switched from deriving a traditional Phillips curve based on retrospective expectations to estimating (for most countries) a neo-Keynesian Phillips curve with forward-looking expectations. The estimate for the forward-looking Phillips curve entails a restriction whereby the unemployment gap assumes a mean of 0, i.e. that the gap is symmetrical over the business cycle. There is no such restriction in the estimates for the retrospective Phillips curve. As different approaches are taken for different EU countries, the estimates are adjusted to take account of these variations. The adjustment means that the average difference between the two approaches is subtracted from the estimated NAWRU for countries where the forward-looking Phillips curve tends to give a higher level. For most countries, the difference between the two approaches is small, but for some – including Sweden – the difference viewed over the whole calculation period is substantial, at 0.94 percentage points.¹⁷ A further argument for making adjustments is that business cycles tend to be asymmetric, meaning that slumps are more prolonged than boom periods. If so, this could also cause the average unemployment gap to be negative. How negative is very uncertain, however.¹⁸

The NAWRU estimates from the European Commission quantify equilibrium unemployment based on the assumption that the Phillips curve is vertical in the long term.¹⁹ Figure 2.2 shows the development of NAWRU in Sweden according to the Commission. NAWRU is at a very low level (under 2 per cent) until the end of the 1980s and increases to almost 7 per cent by the end of the 1990s. The changes in these years are therefore relatively small. The unemployment gap (Figure 2.3) shows that actual unemployment is higher than NAWRU in most years; the unemployment gap averages 1.4 per cent over the

¹⁶ See e.g. Elmeskov and MacFarland (1993) and Elmeskov (1994).

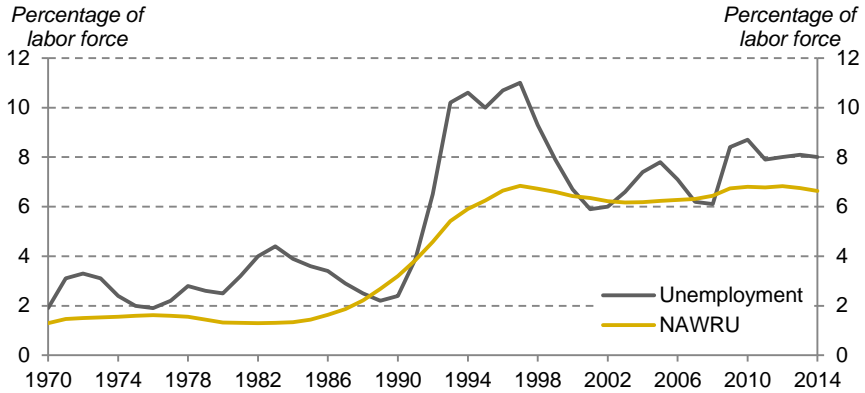
¹⁷ It should be noted that the difference between the approaches has been very small in recent years. Viewed over the whole period, however, it is significant. See Havik et al. (2014).

¹⁸ The mean (1981–2016) of the NIER's output gap is e.g. -0.98 per cent and the unemployment gap 0.61 per cent.

¹⁹ Orlandi (2012) uses panel data for various countries to examine the extent to which variations in NAWRU can be explained by changes in a number of conventional structural factors.

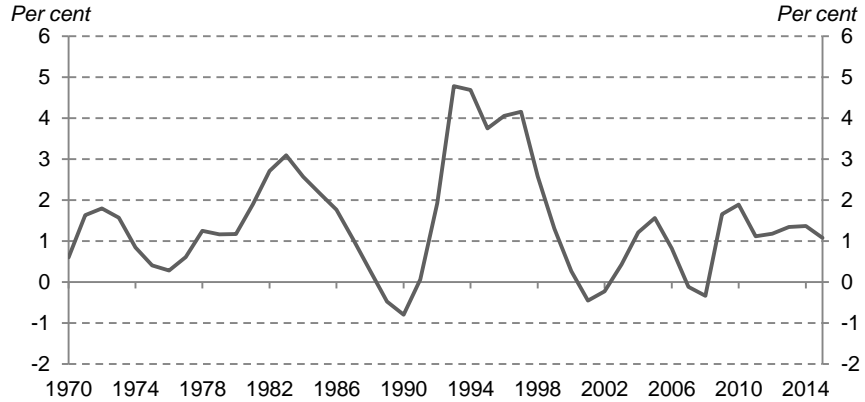
period 1970–2015.²⁰ In terms of a conventional Phillips curve, this means that periods of falling inflation were more usual than periods of rising inflation in the years covered.

Figure 2.2 Unemployment and NAWRU 1970–2015



Note: NAWRU refers here to the European Commission’s estimate from the autumn of 2016.
Source: SCB (LFS) and EC (AMECO).

Figure 2.3 Unemployment gap 1970–2015



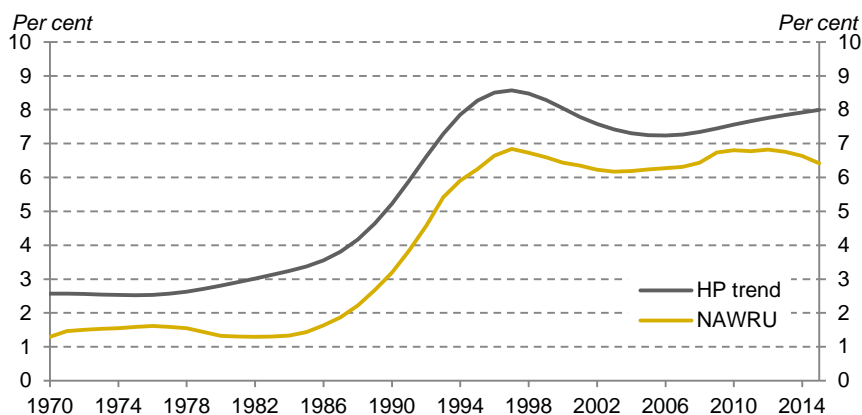
Source: SCB (LFS) and EC (AMECO).

²⁰ The unemployment gap is calculated as $Gap = u - NAWRU$ where u is unemployment according to Statistics Sweden’s linked LFS data. The unemployment series in the European Commission’s database is not completely consistent with the LFS data. For the years 1970–2000 the Commission reports relative big differences from LFS. Average unemployment for the period 1970–2015 is 5.6 for the LFS series and 5.1 for the Commission series. For the period 1970–2000, the LFS mean is 4.7 and the Commission mean is 4.1. For the period 2001–2016 the equivalent figures are 7.3 and 7.3. The unemployment gap calculated from the Commission’s unemployment data averages 0.98 for the period 1970–2016.

It is also worth noting that NAWRU increases from just over 1 per cent to approx. 6–7 per cent from the mid-1900s to the mid-1990s. It is hard to identify any institutional or structural factors that might explain this trend. In the prevailing theory, equilibrium unemployment is primarily determined by factors relating to wage formation, search behaviour and matching in the labour market. These include the design of unemployment insurance, the scope and direction of labour market policy, the wage bargaining system, taxes and employment law. The changes that took place in these areas from the mid-1980s to the mid-1990s were not such as to explain the dramatic increase in equilibrium unemployment indicated by the NAWRU estimates.²¹

The development of NAWRU according to the European Commission's estimates does not differ much from the trend produced by an 'HP filter', a popular atheoretical method of extracting the trend from a time series (Figure 2.4).²² The differences in level average 1.4 percentage points. The reason is that the unemployment gap calculated using the HP filter is construed in such a way that the average is zero.

Figure 2.4 Equilibrium unemployment according to the European Commission (NAWRU) and the HP trend



Note: The HP trend is calculated from LFS data.

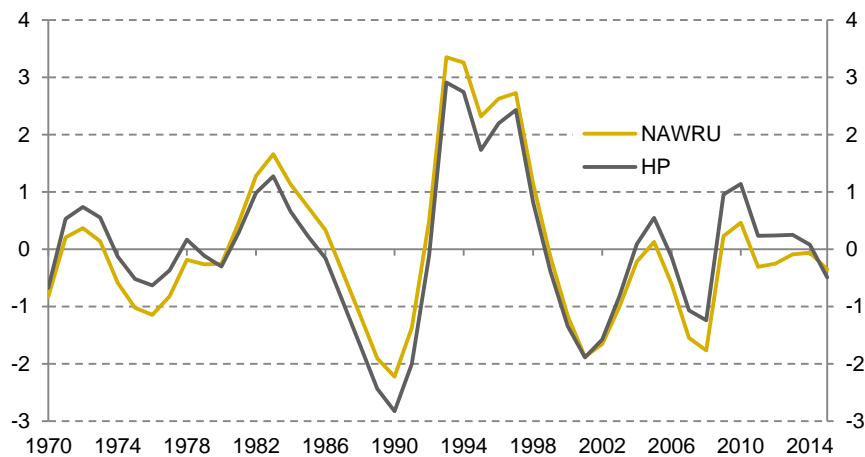
Source: SCB (LFS), EC (AMECO) and own calculations.

²¹ See Holmlund (2006) for a more detailed discussion of the causes behind the big increase in Swedish unemployment between the 1980s and the 1990s.

²² See Chapter 3 for a description of the HP (Hodrick-Prescott) filter. An HP filter is similar to a moving average. The degree of smoothing of the time series is governed by the value chosen for the parameter λ . We have chosen $\lambda=100$, a usual value for annual data.

Figure 2.5 shows the unemployment gap calculated from the European Commission's NAWRU estimate and from the HP trend, from which the average difference in level has been eliminated. The correlation between the two series is high ($R=0.95$).

Figure 2.5 The unemployment gap calculated from NAWRU and the HP trend



Source: SCB (LFS), EC (AMECO) and own calculations.

2.3.2 NAWRU and inflation

Are the NAWRU estimates from the EC reasonable? We have estimated simple Phillips correlations for the period 1970–2015, using the Commission's time-varying NAWRU estimate to derive a variable for the unemployment gap. The estimates may be seen as a simple plausibility test of the EC's NAWRU calculations.²³ The key question is whether a larger unemployment gap pushes the inflation rate down. The models take the form

$$\pi_{w,t} = \alpha_0 + \alpha_1 \text{Gap}_t + \alpha_2 \pi_{w,t-1} + \alpha_3 \pi_{p,t-1} + \varepsilon_{w,t} \quad (1)$$

$$\pi_{p,t} = \beta_0 + \beta_1 \text{Gap}_t + \beta_2 \pi_{p,t-1} + \varepsilon_{p,t} \quad (2)$$

²³ Compare Flodén (2005) and Jansson and Palmqvist (2005), who discuss how the NIER's 'labour market gap' affects inflation. Holden and Nymoen (2002) study how a moderate unemployment gap affects wage inflation in the Nordic countries, and find that the gap has basically no effect. Their method of estimating NAWRU does however differ from that used by the Commission.

where π_{wt} and π_{pt} represent wage and price inflation, $Gap_t = u_t - NAWRU_t$ is the unemployment gap and u_t the relative unemployment figure. The stochastic random variables are called $\varepsilon_{w,t}$ and $\varepsilon_{p,t}$. The results are shown in Table 2.1. In the first three columns, wage inflation is a dependent variable; in the last three columns, the dependent variable is the relative change in the price deflator for private consumption. The results are consistent with conventional Phillips correlations, with a significant negative slope in the short term ($\alpha_1 < 0, \beta_1 < 0$). The hypothesis of a vertical long-run Phillips curve cannot be discarded; the estimated parameters for the lagged inflation variables sum to one ($\alpha_2 + \alpha_3 = 1, \beta_2 = 1$).

We can also ease the ‘gap restriction’ $Gap = u - NAWRU$ by including unemployment and NAWRU as separate variables and testing whether the coefficients for u and $NAWRU$ sum to zero (not included in the table). For the wage inflation equation, the gap restriction cannot be discarded, but it can be discarded for the price inflation equation (where NAWRU also has the wrong sign).²⁴

Table 2.1 Estimated Phillips correlation, annual data 1970–2015

	Wage inflation ($\pi_{w,t}$)			Price inflation ($\pi_{p,t}$)		
	(1)	(2)	(3)	(4)	(5)	(6)
Gap_t	-0.55 (2.06)	-0.64 (2.22)	-0.61 (2.04)	-0.37 (2.52)	-0.41 (2.75)	-0.41 (2.83)
$\pi_{w,t-1}$	0.37 (2.49)	0.31 (2.08)	0.36 (2.03)	- -	- -	- -
$\pi_{p,t-1}$	0.44 (2.84)	0.57 (2.95)	0.64 (restr.)	0.88 (10.98)	0.93 (17.63)	1.00 (restr.)
$D91-92$	- -	-4.88 (4.38)	-5.41 (6.63)	- -	-3.73 (2.65)	-4.11 (2.87)
$R^2_{adj.}$	0.62	0.67	0.67	0.75	0.78	0.79
DW	1.81	1.81	1.85	2.73	2.86	2.96

Note: Price inflation refers to the deflator for private consumption. D91–92 is a dummy for the 1991–1992 stabilisation agreement. Absolute values of t-quotients in brackets. The models also contain intercepts which are not shown in the table. Columns (3) and (6) show estimates with restrictions such that the coefficients for the independent inflation variables sum to one.

Source: SCB (LFS) and EC (AMECO).

Estimates based on an unemployment gap calculated from an HP trend (rather than NAWRU according to the EC) give very similar

²⁴ The results generally stand if the unemployment gap is based on the EC’s unemployment data rather than Statistics Sweden’s linked data.

results. Of course, this is not surprising given that the two alternative unemployment gaps are strongly correlated.

2.3.3 Importance of inflation expectations

Svensson (2015) studied the impact on unemployment of a (Swedish) situation where expectations of inflation are assumed to be based on a credible inflation target, while the average rate of inflation has been below the inflation target. This situation leads to a long-term inverse correlation between inflation and unemployment. We can write the Phillips curve as

$$\pi_t = \gamma_0 + \gamma_1(u_t - u_{t-1}) + \gamma_2 u_{t-1} + \beta \pi^e + \varepsilon_t$$

where π^e is a constant determined by the inflation target. We expect $\beta = 1$ from the theory, but β cannot be identified if the inflation expectations are constant. The parameter γ_2 represents the long-term inflation effect of higher unemployment.

Table 2.2 shows estimated quarterly data for two periods, 1997Q4–2011Q4 and 1997Q4–2016Q3. The estimates suggest an inverse long-term relationship between inflation and unemployment: a one percentage point increase in unemployment lowers the inflation rate by around 0.8 percentage points. The estimates are close to those reported by Svensson (2015).²⁵

Table 2.2 Estimated Phillips correlation for CPI inflation, quarterly data from 1997Q4 onwards

	1997Q4–2011Q4	1997Q4–2016Q3
u_{t-1}	-0.76 (3.81)	-0.83 (4.39)
$u_t - u_{t-1}$	-2.23 (2.63)	-2.26 (3.08)
$R^2_{\text{adj.}}$	0.23	0.29
DW	1.80	1.74

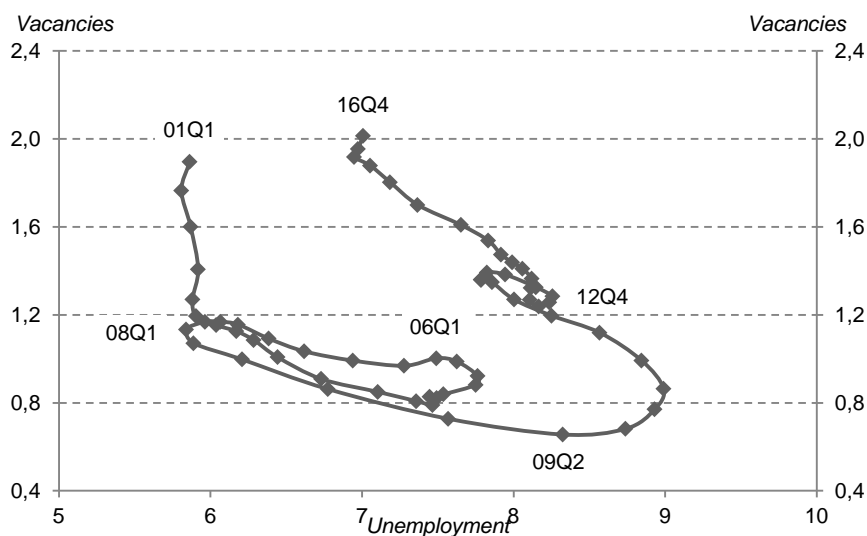
Note: Absolute values of t-quotients in brackets. Inflation relates to quarterly changes expressed in annualised form.

²⁵ We use data on actual inflation, while Svensson (2015) mainly uses real-time inflation.

2.4 Matching in the labour market

Figure 2.6 shows the co-variation between unemployment and vacant jobs in Swedish data from 2001 onwards as a ‘Beveridge curve’. The clear inverse correlation between the variables in the period 2001–2009 is broken around 2009, when both unemployment and vacancies increase. Unemployment over the last few years has also been much higher than it was in the early 2000s at given vacancy rates.²⁶ The Beveridge curve seems to have shifted outwards. A similar pattern can be seen for the USA (Figure 2.7), where unemployment around 2011 is approx. 2–3 percentage points higher than around 2003, despite roughly the same vacancy figures.²⁷

Figure 2.6 Unemployment and vacant jobs 2001–2016



Note: Vacancies and unemployment as a percentage of the labour force. Seasonally adjusted and smoothed quarterly data.

Source: SCB (LFS and vacancy statistics).

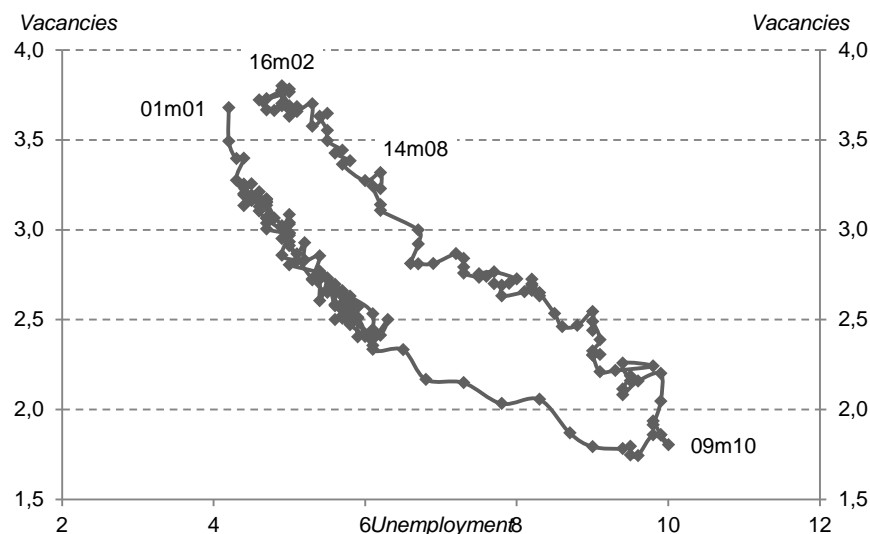
The shift in the Beveridge curve which we see in Sweden seems to be at least partly the result of less effective matching between unemployed people and vacant jobs. Since the financial crisis, the

²⁶ Vacancies are defined by Statistics Sweden as unfilled vacant jobs that can be filled immediately. A broader measure of unsatisfied labour force demand is what Statistics Sweden calls ‘vacant jobs’, where the employer has started external recruitment but has not yet filled the post. Vacant jobs also include jobs where recruitment is in progress while the position is taken by e.g. a temp.

²⁷ Unemployment and vacant jobs are measured in similar (but not identical) ways in Sweden and the USA.

number of new hires has decreased by around ten per cent for a given number of unemployed persons and vacant jobs.²⁸ But theory and empirical findings from various countries also show that economic fluctuations cause variations in vacancies and unemployment which can be depicted as ‘anti-clockwise loops’ in a Beveridge diagram. The loops may be explained by the fact that unemployment is persistent and reacts to an improved vacancy situation with a certain delay. Such loops can be clearly seen for both Sweden and the USA and indicate that what may look like poorer matching may be partly the product of a normal economic cycle.²⁹

Figure 2.7 Unemployment and vacant jobs in the USA 2001–2016



Note: Vacant jobs as a percentage of total jobs (employed persons plus vacant jobs); unemployed people as a percentage of the labour force. Seasonally adjusted monthly data 2001–2016.

Source: Bureau of Labor Statistics (JOLTS).

It is possible in principle to estimate equilibrium unemployment from a search and matching model, but this raises substantial difficulties in practice. One problem is that the model includes a lot of non-observed values, such as vacancy costs and indicators of the parties’

²⁸ Holmlund (2016) estimates a matching function for monthly data from 2001–2014 which takes the form $\ln(H_t) = \alpha \ln(U_{t-1}) + \beta \ln(V_{t-1}) + \gamma D + \dots$, where H is the number of new hires in the economy, U is the number of unemployed, V is the number of vacant jobs in the economy, and D is a dummy variable for the period 2009–2014. The estimates show $\alpha > 0, \beta > 0$ (statistically significant) and a constant return to scale ($\alpha + \beta = 1$) cannot be discarded. We also find $\gamma \approx -0.1$ (statistically significant).

²⁹ The pattern is similar in most other countries; see OECD (2012).

wage bargaining power, which are key to determining wage outcomes and job creation. Another problem is the way in which persistent states can be identified from data covering outcomes based on long-term equilibrium. Existing empirical applications and search and matching models have generally been based on calibrations rather than econometric estimates.

Changes in the composition of the labour force are probably part of the reason for the increased difficulties in matching vacancies and unemployed persons.³⁰ The proportion of immigrants in the population aged 15–74 has increased from 15 to 20 per cent since 2005, and the proportion born outside Europe has increased from 6 to 11 per cent in the same period. Because job opportunities are lower and unemployment risks higher among immigrants than among people born in Sweden, the result has been a marked increase in the proportion of immigrants in the unemployment figures. According to the LFS, this element in the 15–74 age group has risen from 24 to 45 per cent since 2005. The proportion of unemployed immigrants with no more than pre-upper secondary qualifications has increased from 8 to 16 per cent in the same period.

Persons with especially big difficulties in finding work – ‘vulnerable groups’ in the terminology used by the Swedish Public Employment Service – include the low-skilled (no more than pre-upper secondary education), persons born outside Europe, persons with disabilities and older unemployed people (aged 55–64). The proportion of vulnerable groups among the job-seekers with the Swedish Public Employment Service has increased sharply in recent years, and is now almost 60 per cent of the registered unemployed.

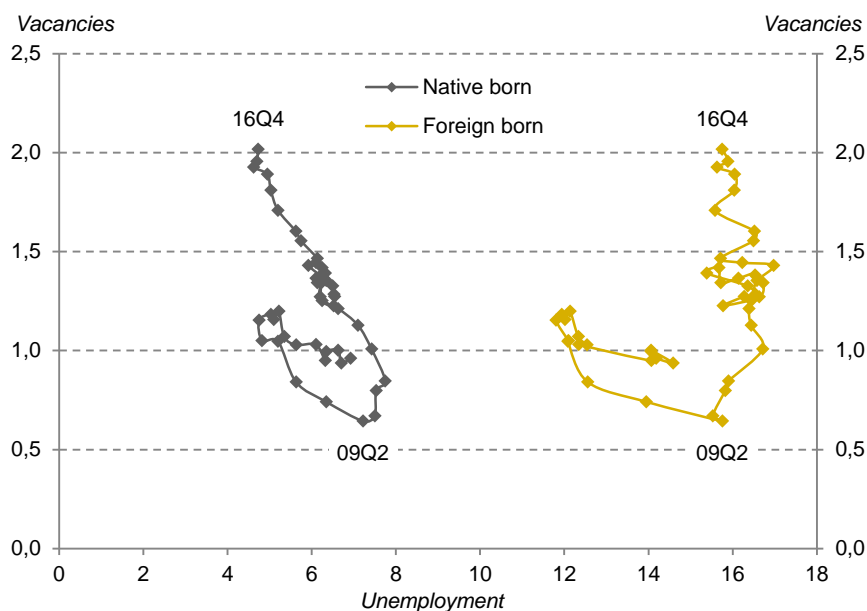
As shown in Chapter 1, the change in unemployment adjusted for composition by age and origin has been more positive than for actual unemployment. The ‘demographic effect’ amounts to around one percentage point compared to 2005.

Figure 2.8 illustrates the relationship between vacant jobs and unemployment for people born in Sweden and those born abroad. The ‘normal’ inverse correlation between unemployment and vacancies is clear for those born in Sweden but not for immigrants since the financial crisis. For the latter group, unemployment is around four percentage points higher in 2010 than in 2007 even

³⁰ See also Håkanson (2014) for a discussion of matching efficiency and the composition of unemployment.

though there is roughly the same number of vacant jobs. The indications of worsening matching problems are thus much stronger for the immigrant group than for the group of those born in Sweden, a pattern which is probably driven by the fact that a growing proportion of immigrants are low-skilled.

Figure 2.8 Unemployment and vacant jobs among native born and those born abroad



Note: Vacant jobs are the total number of vacant jobs as a percentage of the whole labour force. Unemployment is the number of people out of work as a percentage of the labour force within each group. Seasonally-adjusted quarterly data.
Source: SCB (LFS and vacancy statistics).

2.5 Assessments and recommendations

The principal basis for the Government's assessment of equilibrium unemployment comes from the econometric NAWRU estimates produced by the European Commission. In the case of Sweden, they represent a very big increase in equilibrium unemployment from the mid-1980s to the mid-1990s. It is hard to identify any structural (institutional) factors that might explain this trend. For this period, the Government uses its own assessment, which suggests a less dramatic increase. On the other hand, the Government's assessment

of equilibrium unemployment for the years 1996–2015 is based entirely on estimates from the European Commission.

The EC estimates NAWRU for all Member States according to a common agreed methodology. The Swedish Ministry of Finance is among those involved in the ongoing development work at the EU level. International cooperation in model development is of course valuable, but the aim should not be to standardise the model specifications. The institutions in the labour market differ between EU countries and this can give rise to differences in the model definitions. We therefore believe that the model should be produced independently by the Ministry of Finance, to allow it to be further adapted to Swedish conditions. This development work is currently in progress within the Ministry. We believe that the Government should prioritise this and report the results as quickly as possible, including the data series, model specifications and estimates used in the assessments of equilibrium unemployment. The modelling work should also allow for theoretical pluralism, allowing for alternatives to the present one-sided focus on NAWRU (or NAIRU). The hypothesis that inflation and unemployment are independent of each other in the long term is not uncontested and should be empirically tested and not taken as fact.

The demographic changes brought by an ageing population and a growing proportion of immigrants have probably exerted a certain upward pressure on equilibrium unemployment since the mid-2000s. The trend in unemployment viewed in relation to the number of vacancies indicates worsening matching problems in the labour market after the financial crisis in 2008/2009.

3 The Government's calculation methods and forecasts

Chapter 3 is intended both to describe the methods used by the Government to assess economic development and its effects on net lending, and to evaluate the Government's forecasts. We focus on the methods used to separate the macroeconomic changes in GDP and unemployment from the respective trends. These methods are the basis for the Government's calculations of structural net lending. In all cases, the Government's methods are also compared with those of other analysts, particularly the NIER. Finally, we also discuss the method used by the Government to arrive at preliminary income estimates and expenditure limits for the second and third budget years to come.

3.1 The Council's new instruction

Since the beginning of the year, the Council has had a new instruction. Among other things, this states that:

Based on the Spring Fiscal Policy Bill and the Budget Bill, the Council should also evaluate the Government's forecasts for the development of the economy and its report to the Riksdag on the public finances. The evaluation of the forecasts and the report should comply with Article 4(6) of Council Directive 2011/85/EU of 8 November 2011 on requirements for budgetary frameworks of the Member States, in the original wording.¹

The previous instruction already allowed the Council to review and assess the quality of the Government's forecasts and of the models on which these forecasts are based. In our 2010 report, for example, we examined the Government's forecasts for GDP, inflation and unemployment. What is new in the instruction is that the Council not only *can* evaluate the Government's forecasts, but that we *should* do so, and that this should be done in compliance with an EU Directive. Article 4(6) of the Directive states:

¹ Section 7 of the Ordinance amending Ordinance (2011:446) on the instruction to the Fiscal Policy Council. The last phrase of this section has been added to ensure that the content of the section is not automatically changed if the EU amends Directive 2011/85/EU.

The macroeconomic and budgetary forecasts for fiscal planning shall be subject to regular, unbiased and comprehensive evaluation based on objective criteria, including ex post evaluation. The result of that evaluation shall be made public and taken into account appropriately in future macroeconomic and budgetary forecasts. If the evaluation detects a significant bias affecting macroeconomic forecasts over a period of at least 4 consecutive years, the Member State concerned shall take the necessary action and make it public.²

The purpose of the Directive, which is addressed to the EU Member States, is to prevent “biased and unrealistic macroeconomic and budgetary forecasts [which] can considerably hamper the effectiveness of fiscal planning and consequently impair commitment to budgetary discipline”.³ This is to be achieved through transparency on the part of the Member States and discussions on the forecasting methodologies to be used. The Fiscal Policy Council’s contribution to this work will be to present regular evaluations of the Government’s macroeconomic and budgetary forecasts and the forecasting methods that it uses.

In this year’s report, we discuss the Government’s forecasting methods for potential GDP, equilibrium unemployment and structural net lending. We examine the scale of the forecasting error over three years in the Government’s forecasts for a number of variables (GDP, unemployment, net lending and structural net lending) and compare this to the NIER’s forecasting accuracy.

3.2 The Government’s calculations of equilibrium unemployment and potential GDP

In the longer term, GDP development is determined by the structural conditions in the economy, such as the willingness and ability to work, the size and qualifications of the labour force, technological development and access to capital. Potential GDP is the level of GDP that can be sustained in a balanced economic situation with a stable rate of inflation.

The actual GDP development differs from the potential because the economy is constantly exposed to supply and demand issues. It

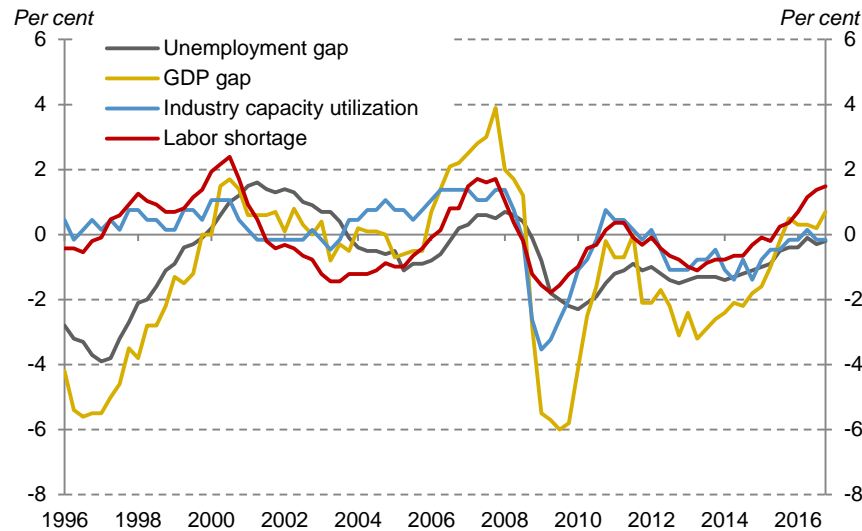
² Council Directive 2011/85/EU of 8 November 2011.

³ Ibid.

takes time for the economy to adapt to these disruptions as prices can be assumed to be rigid in the short term and it is costly to increase or decrease the capacity in the economy. Actual GDP development therefore fluctuates around the trend, and the difference between them is called the output gap.⁴ When actual production is higher than the long-term trend (a positive gap), the economy is in a boom, and vice versa. In an economic upturn, actual GDP grows faster than potential GDP, resource utilisation rises in the economy and the shortage of labour increases. Conversely, when actual GDP grows more slowly than potential GDP, resource utilisation in the economy decreases, unemployment rises and the shortage of labour decreases (see Figure 3.1). The output gap is thus closely related to the unemployment gap, i.e. the difference between actual unemployment and equilibrium unemployment.

The assessments of resource utilisation in the economy are an important means of assessing macroeconomic development and the need for stabilisation and structural policies. They are therefore fundamental components of the Government’s forecasts.

Figure 3.1 The economic situation and resource utilisation



Note: The chart shows the unemployment gap the sign reversed.

Source: NIER (2017b) and own calculations.

⁴ The output gap is usually expressed as the difference between actual and potential GDP, as a percentage of potential GDP.

The level of equilibrium unemployment has a crucial bearing on both stabilisation and structural policy.⁵ High equilibrium unemployment is in itself an important signal to decision-makers of the need for structural measures in the labour market. If actual unemployment is well above equilibrium unemployment, this should prompt a more expansive policy than when unemployment is close to its equilibrium level. Equilibrium unemployment is also used to calculate potential GDP and, by extension, structural net lending.⁶ The assessment of equilibrium unemployment thus affects a large number of macroeconomic forecasts and sustainability analyses, and an evaluation of the surplus target. It is therefore crucial for the estimates of equilibrium unemployment and potential GDP to be as accurate as possible, to enable appropriate economic policy measures to be identified and implemented.

Neither equilibrium unemployment nor potential GDP is an observable variable – it is impossible to know after the event whether any individual forecast was good. A lot of different methods and models are used to estimate potential variables, and there is no consensus as to which method is ‘best’, which means that different institutions and forecasters take partly or wholly different approaches and so arrive at different assessments. The methods that work better may also vary between countries and over time. In view of this, it is important that there should be transparency in the calculations and that calculations not based on a model should be clearly specified and explained.

3.2.1 The Government and equilibrium unemployment

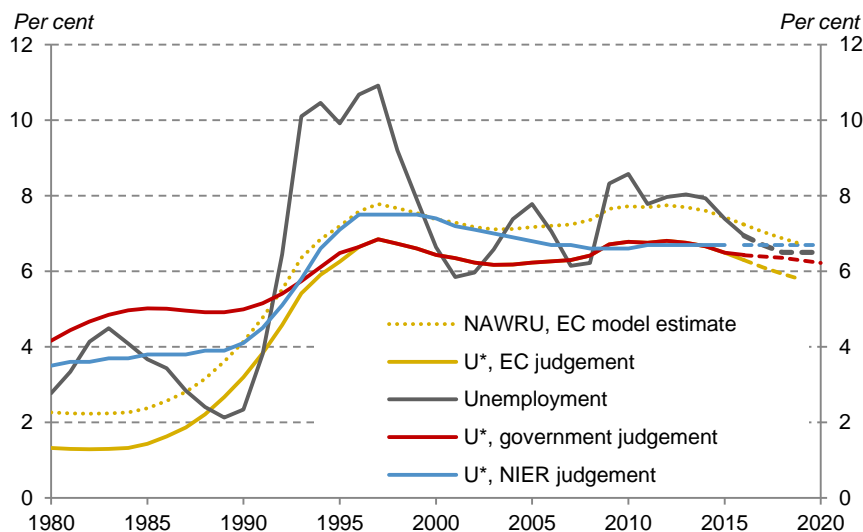
In BP17, the Government provides estimates of the development of equilibrium unemployment in the period 2011–2015, and projections for the period up to 2020. Equilibrium unemployment is stated to be 6.8 per cent in the years 2011–2013, gradually decreasing thereafter. In 2020 the level is expected to be 6.2 per cent, an estimate which has been retained in VP17. The Government’s current estimate of

⁵ Chapter 2 of this report provides a more detailed overview of equilibrium unemployment in both theory and practice, focusing on the model used in the Government’s assessment.

⁶ If unemployment in a given year is higher than the equilibrium level, structural net lending will be adjusted upwards relative to actual net lending.

equilibrium unemployment for the years 1996–2015 is based entirely on the series published by the EU, which is in turn based on estimates from a NAWRU model developed by the Commission.⁷ For most countries, equilibrium unemployment is identified with the aid of a forward-looking Phillips curve which captures the relationship between real unit labour costs and the unemployment gap. In the Commission's published series for equilibrium unemployment, the NAWRU estimate has been adjusted for differences in methodology between countries (see also section 2.3.1). For Sweden, the adjustment is relatively large, and means that the estimated NAWRU is reduced by 0.94 percentage points for every single year (Figure 3.2).

Figure 3.2 Unemployment and different estimates of equilibrium unemployment



Note: Actual unemployment for persons aged 15–74 according to LFS and the NIER's forecast of March 2017, the Commission's model assessment and estimated (model incl. adjustment) equilibrium unemployment (U^*) from the 2016 autumn forecast, the Government's estimated equilibrium unemployment according to VP17, and the NIER's estimate in 'The Swedish economy', March 2017. Source: NIER (2017b), EC (2016b) and VP17.

The NIER also publishes regular estimates of equilibrium unemployment. The methodology may be described as theory-based

⁷ See Ministry of Finance (2016) and Havik et al. (2014). For the period prior to 1996, the Government ignores the Commission's estimate and instead uses an estimate based on calculations by the Ministry of Finance (2011b). Section 2.3.1 describes the Commission's methodology in more detail.

informal estimates.⁸ The NIER bases its calculations on the unemployment in the years when the labour market was last judged to be in equilibrium. According to the NIER, this was in 2006–2007 when unemployment stood at 6.5–7 per cent. Together with estimates of the change in the structural factors that affect equilibrium unemployment according to the current theory, this level constitutes the basis for the NIER’s overall estimate of equilibrium unemployment.⁹

Table 3.1 compares estimates from the Government, the NIER and the Commission of equilibrium unemployment for Sweden.

Table 3.1 Comparison of equilibrium unemployment with statistical measures

		Government	NIER	EC
1980–2016	mean	5.9	5.8	4.9
	standard deviation	0.8	1.5	2.2
	minimum	4.2	3.5	1.3
	maximum	6.8	7.5	6.8
1996–2016	mean	6.5	6.9	6.5
	standard deviation	0.2	0.3	0.2
	minimum	6.2	6.6	6.2
	maximum	6.8	7.5	6.8
	level 2016	6.4	6.7	6.3
	level 2020	6.2	6.7	5.6

Source: BP17, VP17, NIER (2017b), and EC (2016b).

Viewed over the period 1980–2016 the views of the Government and the NIER regarding average equilibrium unemployment are similar. The Commission’s average, on the other hand, is much lower, by around 1 percentage point. There is greater variation in the NIER’s equilibrium unemployment than the Government’s, partly because of a lower estimate of equilibrium unemployment in the 1980s and partly because equilibrium unemployment was judged to be rising more during the crisis of the 1990s. The biggest variation, however, is in the Commission’s estimate, which has a minimum

⁸ In terms of theory, the NIER works from search and matching models; see Pissarides (2000) and section 2.3.2 of this report. This means that the NIER does not use a NAIRU or NAWR concept, but a flow equilibrium.

⁹ The estimate of equilibrium unemployment is based on a series of indicators including shortfall figures, vacancy level, job opportunities etc.; see NIER (2016b).

value just over 2 percentage points lower than the others.¹⁰ For a slightly shorter period, 1996–2016, the variation in equilibrium unemployment is much lower and does not differ significantly between the different estimates (standard deviation 0.2–0.3). However, equilibrium unemployment is higher on average according to the NIER (almost half a percentage point).

Equilibrium unemployment until 2020

The pictures from the Government, the NIER and the Commission of how equilibrium unemployment is likely to develop until 2020 differ widely from each other. By 2020, the Government believes that the level will have fallen to 6.2 per cent, while the Commission's estimate is over half a percentage point lower (see Table 3.1).¹¹ The NIER uses a method for the forecast years which is broadly the same as the Government's. Differing views of the effects of policy on the workings of the labour market mean, however, that it arrives at a different estimate. In its latest forecast, the NIER judges that the labour market is now in balance, which implies equilibrium unemployment of 6.7 per cent, which is set to remain at this level until 2020. This is roughly half a percentage point higher than the Government's estimate and almost a whole percentage point higher than the Commission's.¹²

After 2015 the Government no longer uses the Commission's equilibrium unemployment but makes an independent assessment. The Commission arrives at its estimate for the forecast years with the aid of a model extrapolation and a long-term 'anchor' for equilibrium unemployment which is intended to capture the longer-term structural component of unemployment. This anchor, which currently stands at around five per cent for Sweden, is estimated in a separate model which takes account of institutional factors like the payout level in the unemployment fund, taxes, the scope of labour market programmes and the strength of the trade unions.¹³ The

¹⁰ The exceptionally low equilibrium unemployment in the 1980s is a consequence of the adjustment made by the Commission to provide for comparability between countries and allow for asymmetry in the economic situation. It should be noted that the Commission here believes that unemployment was higher than equilibrium unemployment for most of the 1980s, whereas the Government believes it was lower than the equilibrium level in the same period.

¹¹ For the Government's forecast, see BP17 Appendix 2, p. 11.

¹² See NIER (2017b).

¹³ See Havik et al. (2014) and Orlandi et al. (2012).

Government does not use any such anchor but, like the NIER, bases its forecast of equilibrium unemployment on a demographic projection taken from Statistics Sweden's population forecast.¹⁴

Apart from the demographic projection, the Government then assesses the effects of economic policy, persistence in unemployment and the effects of migration in the short and long term. The Government and the NIER believe that the various labour market reforms in BP17 will help to reduce equilibrium unemployment slightly (see Box 3.1). The reforms are thus considered to counteract the increase in equilibrium unemployment arising from the fact that it takes time for new arrivals to establish themselves in the labour market.¹⁵

Some of the difference between the forecasts from the Government and the NIER is down to the fact that they start the demographic projection at different levels of equilibrium unemployment. For 2015, which is the last year for which the Government uses the Commission's estimate, the difference between the two forecasts is around 0.2 percentage points.¹⁶ As the estimates are based on similar demographic projections, the remaining difference arises because the Government assumes that the integration of new arrivals into the labour market is going better, that the effects of the policy being pursued are greater, or the persistence in unemployment is decreasing faster than the NIER assumes. Several of these factors could come into play.

As described earlier, the Commission's equilibrium unemployment is the result of a model estimate which has been adjusted so the unemployment gap is negative on average (representing the average difference between estimates with the forward-looking and retrospective Phillips curve). Nevertheless, the Commission finds that the difference between the two approaches has been very small in recent years. Adjusting for the whole of the average difference carries the risk that the level used as the starting point for the

¹⁴ In simple terms, the demographic projection means that the labour force, employment and hours worked are extrapolated forwards at a detailed level by age, gender and origin based on the employment rate and the labour force participation for each sub-group in the latest outcome year.

¹⁵ See VP17, p. 60.

¹⁶ Since March 2017, the NIER has used 2016 as its base year.

Government's projection of equilibrium unemployment may not be the best estimate.¹⁷

As equilibrium unemployment is the basis for calculating potential GDP and structural net lending, it is desirable for the Government to account more clearly for the estimates made for the forecast years and to present sensitivity analyses for the calculations performed. Other things being equal, for example, a lower estimate of equilibrium unemployment will mean that structural net lending is higher (see also section 3.3). Lower equilibrium unemployment also implies higher potential employment and a higher potential GDP.

¹⁷ This risk is reduced by the fact that the Government also reviews its estimate of resource utilisation in the labour market today with the aid of a number of indicators, including shortfall figures and various indicators of matching in the labour market. See VP16, p. 85.

Box 3.1 Reforms in BP17 affecting equilibrium unemployment

The main intention behind most of the changes proposed in BP17 is to support the groups which are furthest from the labour market, but the overall effects of the policy in the longer term are judged to be relatively small. This box briefly describes the principal reforms that may be expected to affect equilibrium unemployment.

- The target groups for trainee jobs and vocational introduction positions have been expanded to include new arrivals in Sweden.¹⁸ The Government also intends to make extra services currently aimed at the long term unemployed available to new arrivals.
- The Government is introducing 5,000 ‘modern preparatory jobs’ in the State authorities, where the long-term unemployed and recent immigrants can be employed to carry out simple tasks.¹⁹
- The level of subsidies in fresh-start jobs for recent immigrants and persons who have been out of work for more than three years is increasing. In order to reduce displacement effects, the subsidy levels for persons with shorter periods of unemployment (less than two years) are also being lowered and the maximum support periods shortened.²⁰
- Unemployment insurance for the part-time unemployed has been made more generous. This may be expected to reduce unemployment by increasing the incentive to take part-time work rather than being unemployed.²¹

Overall, the Government judges that the various reforms in the labour market area will help to reduce equilibrium unemployment somewhat in the longer term. The NIER also believes that the proposed reforms will have positive effects on employment overall, but that these will be small.²²

¹⁸ See BP17 expenditure area 14, p. 27.

¹⁹ Ibid., p. 44.

²⁰ Ibid., p. 45.

²¹ Ibid., p. 46-47.

²² See NIER (2016c), p. 94.

3.2.2 Potential GDP

Potential GDP is estimated by various econometric and statistical methods. The simplest way is to apply a statistical filter directly to actual GDP development, in order to separate cycles from the trend. A Hodrick-Prescott filter (see Box 3.2) is often used, but there are a number of problems with this.²³ Apart from the statistical problems, one disadvantage of this method is that the resulting trend lacks any economic interpretation as it is decoupled from economic theory. A common approach is therefore to estimate GDP using a production function instead. A Cobb-Douglas production function is often used, with constant or time-varying labour force participation.²⁴

Another way is to work from a productivity trend.²⁵ Together with estimates of the number of hours worked, this can be used to calculate potential GDP. The method is certainly transparent, but here too, there is no clear link to economic theory. Compared to a filter in actual GDP, however, an advantage of the method is that it takes account of information underpinning the estimate of potential hours.

The Government's calculations of potential GDP are based on the last approach (Figure 3.3 provides an overview of the method). Potential GDP is calculated as the product of potential productivity, estimated from the general trend, and the potential number of hours worked. For industry, the Government uses an HP filter on actual productivity. It then adds productivity in the public sector and non-profit organisations serving households (for which potential and actual productivity are assumed to be identical).

Potential productivity is currently based on an estimate of the productivity gap in industry (a measure of companies' resource utilisation), which is then extrapolated on the assumption that the

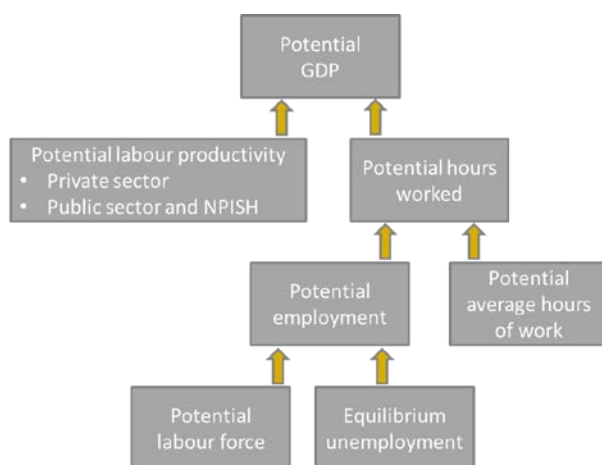
²³ See e.g. Hamilton (2017) for a description of the properties of the HP filter.

²⁴ The ECB uses a generalised CES function within the 'New Multi-Country Model'; see Dieppe et al. (2012).

²⁵ This section refers to overall work productivity, i.e. GDP/number of hours worked.

growth will gradually return to a historical average.²⁶ The potential number of hours worked is compiled ‘bottom-up’ based on the potential labour force.²⁷ Using the estimates of equilibrium unemployment, the potential labour force and an assumption of average working hours, the potential level of employment and the potential number of hours worked are then calculated. The estimate of equilibrium unemployment thus directly affects the calculation of potential GDP.

Figure 3.3 The route to potential GDP by the Government’s method



Source: Ministry of Finance (2016).

The NIER’s method is broadly similar to the Government’s, but it differs slightly in the calculation of the potential labour force.²⁸

²⁶ Both the Government and the NIER estimate the productivity gap from indicators. The projection of potential productivity is also affected by the way in which the historical average is chosen and the rate at which it is derived. The Government currently assumes a return to a historical average of just over 2 per cent per year in industry, which tallies with an average for 1980–2016. In the whole economy, productivity growth in the same period was 1.7 per cent per year. In the last decade, which has been marked by the financial crisis, productivity growth has however been much lower, also affecting both the Government’s and the NIER’s estimates of potential productivity so it takes longer to reach the historical average.

²⁷ The potential labour force is calculated by applying an HP filter to the actual trend and the demographic projection adjusted for estimates of the effects of economic policy and migration. The labour force is not currently cyclically adjusted prior to the HP filter.

²⁸ The NIER calculates the potential labour force by first cyclically adjusting the actual labour force. This cyclical adjustment is performed as per $AK^* = AK + \theta(u - u^*)$, where AK is the labour force, $(u - u^*)$ is the unemployment gap and θ is a (time-varying) elasticity which shows how sensitive the labour force is to changes in the economy. This elasticity is estimated from data on labour force participation and the unemployment gap.

Box 3.2 The Hodrick-Prescott filter (HP filter)

A Hodrick-Prescott filter separates trends from cycles by solving the following minimisation problem:

$$\min_{y_t^*} \sum (y_t - y_t^*)^2 + \lambda (\Delta y_t^* - \Delta y_{t-1}^*)^2$$

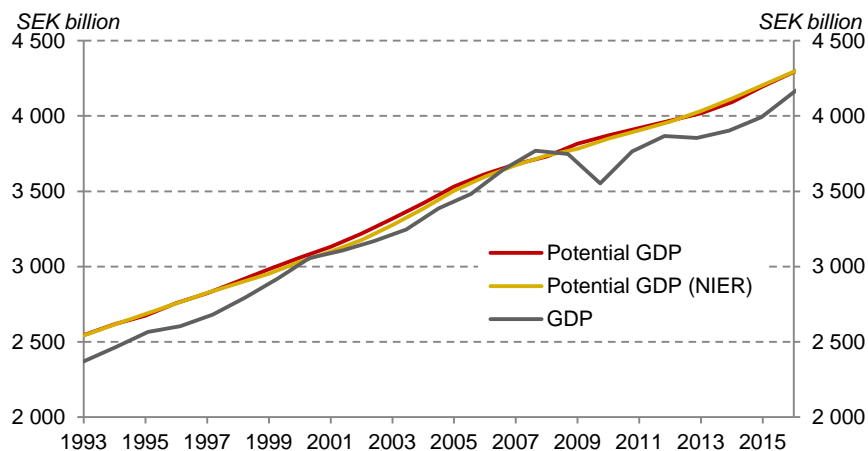
where y is the log of GDP and y^* is the log of potential GDP. The filter takes account of how close actual GDP is to potential GDP (the first term) and of the variability in the trend (the second term). The relative weighting of these two factors is determined by the parameter λ . In practice, $\lambda = 1\,600$ is usual for quarterly data and $\lambda = 100$ for annual data. Intuitively, 1,600 means that the standard deviation for the cycle is 40 times greater than for the acceleration in the trend for quarterly data, which is consistent with an average absolute value for the output gap of 4 per cent and an average absolute change in trend growth of 0.1 per cent.

The HP filter is sensitive to the choice of λ ; a higher parameter value places greater weight on the cyclical component (i.e. the trend becomes more even) and vice versa. The HP filter also places great weight on the latest observations: the ‘end-point problem’. Because the filter is symmetrical, it forces the output gap to sum to zero over the sample period, but in practice, the data will seldom cover whole economic cycles. One way of tackling this problem is to use an enhanced HP filter which also places a long-term restriction on the end-point.

Source: Hodrick and Prescott (1997).

Figure 3.4 shows the Government’s and the NIER’s forecasts of potential GDP from 1993–2016 together with actual GDP development. We can see that the differences between them are extremely marginal going back in time. Both the Government and the NIER estimate average growth at 2.3 per cent per year from 1994–2016, with higher growth before the financial crisis (2.7 per cent per year) and lower afterwards (1.9 per cent per year on average).

Figure 3.4 GDP and the Government's and the NIER's estimates of potential GDP in retrospect



Source: BP17 and NIER (2017b).

Potential GDP and the output gap until 2020

If we look forward, on the other hand, the Government and the NIER paint different pictures. The Government expects higher potential growth until 2020 (Figure 3.5), mainly due to higher potential productivity.²⁹ The potential productivity has also been revised upwards for this year and next compared to BP17. The Government now expects average potential productivity to increase by 1.5 per cent per year from 2017–2020, while NIER projects an annual increase of 1.3 per cent.

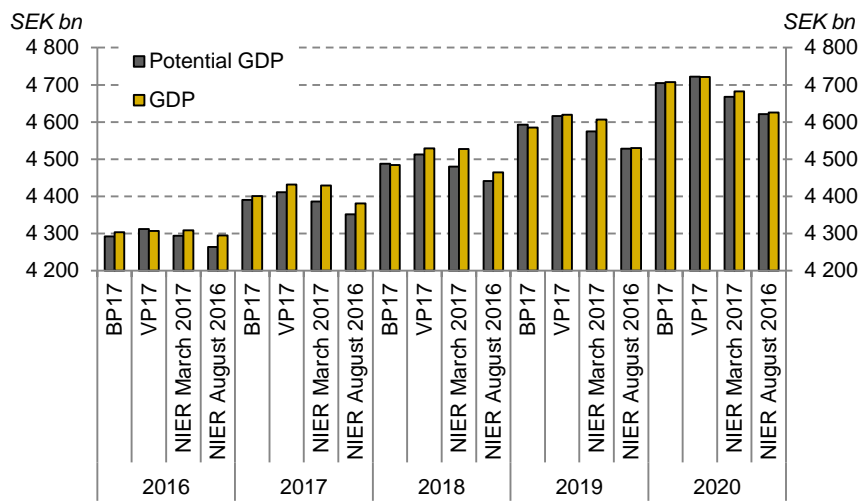
As can be seen from Figure 3.6 the Government suggested in BP17 that the output gap would be closed in the forecast years. In VP17, however, GDP growth was revised upwards, and the Government now believes that the output gap will turn slightly positive this year and next. The NIER's view, on the other hand, is that the upturn will continue and that the output gap will become more positive (1.1 per cent this year and 1.0 per cent in 2018, before decreasing).³⁰ Partly given the indicators of resource utilisation discussed in Chapter 1, the Council is sceptical of the Government's forecast in BP17 of GDP growth completely in line with the

²⁹ If BP17 is compared with the NIER instead, the difference is explained by slightly higher productivity and potential hours.

³⁰ The Riksbank, the OECD and the IMF expect to see a more positive output gap than the Government; see Chapter 1.

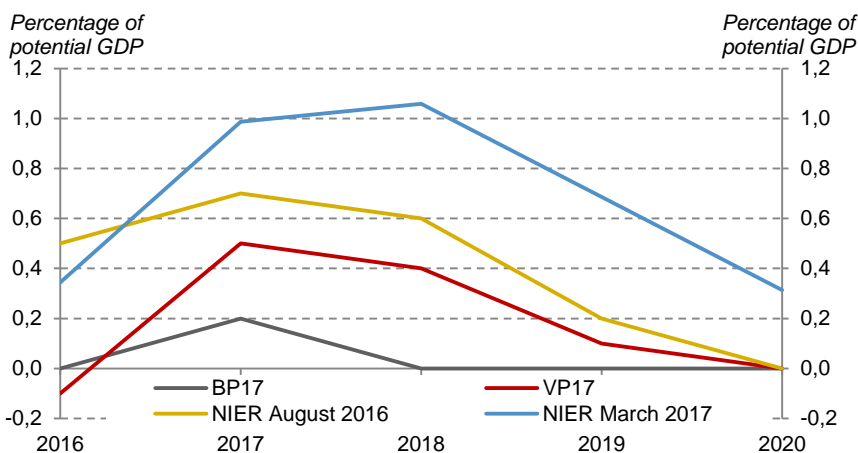
potential trend. Although the output gap was revised upwards slightly in VP17, the Government still assumes resource utilisation to be lower than other analysts believe. As described earlier, the size of the output gap has a bearing on the calculation of structural net lending, which we discuss in the next section.

Figure 3.5 GDP and potential GDP up to 2020



Note: Dotted lines show potential GDP, while solid lines show GDP.
Source: BP17, VP17, NIER (2016a) and NIER (2017b).

Figure 3.6 The output gap up to 2020



Note: The output gap is defined as GDP minus potential GDP, as a percentage of potential GDP.
Source: BP17, VP17, NIER (2016a) and NIER (2017b).

3.3 The Government's calculation of structural net lending

Net lending in the public sector generally varies with the economic situation. In a boom, when resource utilisation is high, tax revenues are higher than usual. At the same time, the relatively low unemployment in an upturn tends to restrain public spending. Altogether, this means that net lending is automatically improved in a boom, while it tends to weaken in a downturn when tax revenues are growing more slowly and the costs of unemployment are rising. The cyclical portion of net lending arises from what are known as automatic stabilisers, because they counter fluctuations in the economy without the need for any policy decision to be taken. This contrasts with the discretionary, or active, element of fiscal policy.

There are many reasons to eliminate the cyclical portion of general government net lending and so arrive at the structural, or cyclically adjusted, net lending figure. The Surplus Target Committee suggests that structural net lending should be used as an indicator of whether the Government is meeting the surplus target for general government net lending. The change in structural net lending also reveals how expansive or restrictive the active fiscal policy is. Structural net lending can therefore be viewed as at least two different indicators – one to assess target attainment in the fiscal policy framework and one to assess whether the stabilisation policy is well balanced. The measure is therefore relevant on both the short and the long term.

It is important to note that the cyclical adjustment of net lending is not a forecast in the strict sense but an almost mechanical calculation. On the other hand, as we shall see, the calculations are affected by the economic situation which is assumed to prevail.

3.3.1 The Government's method

Unlike net lending, structural net lending cannot be calculated from actual income and expenditure, but has to be estimated. There are many different methods of making this estimate.³¹ All these methods basically take a view on how much public income and expenditure is

³¹ For a general discussion of structural net lending in the public sector, see Boije (2004).

affected by fluctuations in the economy. This is known as budgetary elasticity.³² Then the size of the automatic stabilisers is calculated by multiplying budgetary elasticity by the prevailing output gap. Actual net lending is then adjusted by a similar amount. Apart from the effect of the automatic stabilisers, adjustments are also made for extraordinary tax revenues from capital gains and one-time effects. In a downturn, the calculations normally produce a structural net lending figure which is lower than actual net lending, while the reverse is true in an upturn.

Since the spring 2015 Fiscal Policy Bill, the Government has applied a disaggregated method for the cyclical adjustment.³³ The advantage of this method is that the income and expenditure sides are each adjusted separately. In particular, this takes account of cyclical variations in the composition of the tax base. A year with a particularly positive change in the composition of the tax base will mean, other things being equal, that structural net lending will be lower than actual net lending.

On the income side, tax revenues are divided into seven different categories associated with different tax bases.³⁴ For each of these, the long-term share of GDP is calculated, together with an implicit tax rate. The product of these is the cyclically adjusted tax burden, which should be interpreted as the tax revenue that the tax base would have contributed in a normal economic situation. The sum of all seven tax bases constitutes the cyclical adjustment on the income side.

On the expenditure side, the calculation is simpler. Only expenditure related to unemployment, such as unemployment benefit, activity support, labour market training and wage guarantees, is cyclically adjusted. Other costs are assumed to be non-cyclical. Unemployment benefits are adjusted according to the level of the unemployment gap. If unemployment is higher than normal in a given year (a positive unemployment gap), structural net lending is adjusted upwards relative to actual net lending.

³² Formally speaking, budgetary elasticity is the percentage change in net lending (expressed as a proportion of GDP) caused by a one percentage point change in the output gap. The Government used to assume an elasticity of 0.55 in its calculations, the same figure used by the Riksbank.

³³ The method is described in Braconier and Forsfält (2004).

³⁴ The seven categories are direct taxes from companies (corporate profits), household capital gains taxes (household net capital gains), other direct taxes from households (household gross income), value-added tax (total consumption and investments), other indirect taxes (household consumption), social security charges including income taxes (total wages in the economy), and other primary income (which is proportional to GDP).

The difference between income and expenditure is primary structural net lending. Total structural net lending also includes net spending on capital, i.e. the difference between general government capital expenditure and income. This is dependent on interest rates and total net assets. These amounts are not cyclically adjusted in the Government's model.

Finally, net lending is also adjusted for one-time effects of a special character. One example would be the accruals of Sweden's payments to the EU in 2014–2016.

The cyclical adjustment of net lending by the Government's method can be divided into four components: the effect of the output gap, the unemployment gap, the composition of the tax bases, and one-time effects.

3.3.2 Result from the Government's method and comparison with the NIER

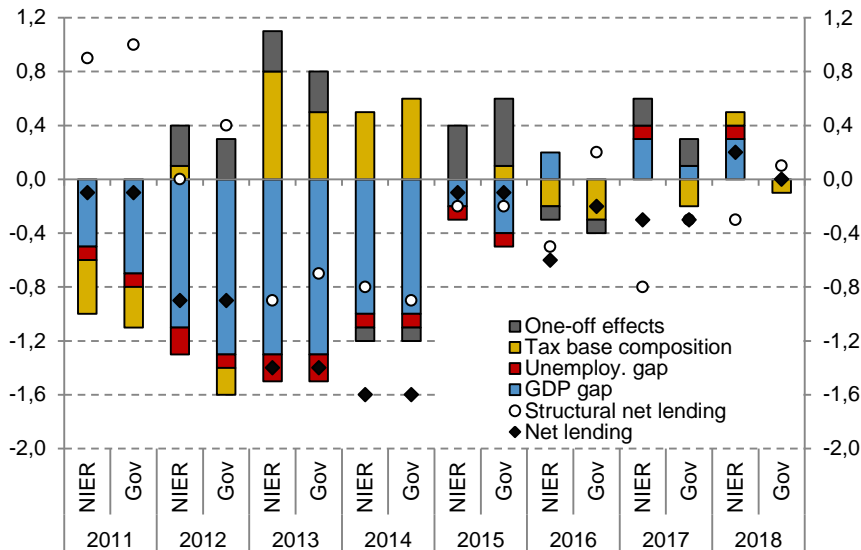
The methods used by the Government and the NIER to calculate structural net lending are broadly identical. Differences between the Government's and the NIER's cyclical adjustments may however arise out of differing estimates of potential GDP or equilibrium unemployment, or both of these, and out of differing assumptions regarding future changes in expenditure (see next section). This is illustrated in Figure 3.7 for the years 2011–2018. The diagram shows the Government's cyclical adjustment in BP17 and the equivalent in the NIER's forecast published soon after, i.e. in the Wage Structure report from October 2016. The Government's and the NIER's results broadly agree. The differences that exist are mainly due to differing views of the economic situation (see also Figure 3.6).

In 2017, the output gap accounted for an increase in net lending of 0.1 per cent of GDP according to the Government's forecast and 0.3 per cent according to the NIER. The NIER also believes that a positive unemployment gap contributes 0.1 percentage point to net lending. According to BP17, the unemployment gap has been closed and so has no bearing on the adjustment to net lending.

With regard to the composition of the tax base, the NIER and the Government produce differing estimates for 2017 and 2018. The adjustments for the tax bases in both years differ by 0.2 percentage points, so the Government's structural net lending figure – other

things being equal – will be higher relative to the actual figure compared to the NIER’s calculations. In the Government’s case, the composition of the tax bases makes up the whole of the cyclical adjustment in 2018. The differences have to do with the differing calculation assumptions made regarding public income and expenditure, in combination with the use of the HP filter.³⁵

Figure 3.7 Comparison of the Government’s and the NIER’s cyclical adjustment to net lending, 2011–2018



Note: Net lending is expressed as a percentage of GDP, other variables as a percentage of potential GDP. A positive contribution from a given factor means that this factor is judged to have been favourable to net lending, so structural net lending is adjusted downwards relative to the actual figure. In any given year, the different factors may have opposing effects on net lending. The net effect is the difference between the black diamonds and the white circles. For example, the economic situation (blue and red bars) had a negative effect on net lending from 2011–2015, while one-time effects and the composition of the tax bases were sometimes positive and sometimes negative. The net effect was judged to be unfavourable to the public finances, which is why cyclically adjusted (structural) net lending is higher than actual net lending for these years.

Source: NIER (2016b) and BP17.

The big negative contribution from one-time effects in 2016 is partly due to a repayment of insurance premiums to municipal and county authorities from AFA Försäkring in 2015. The positive one-time

³⁵ The Government’s assumption has household consumption increasing as a proportion of GDP, while the NIER’s assumption is that public-sector and household consumption are constant elements of GDP. See sections 3.4 and 6.3.

effect of 0.3 per cent of GDP in 2017 includes a rebate on the EU contribution.³⁶

The fact that cyclical factors are eliminated as far as possible from net lending means that changes in structural net lending are interpreted differently from similar changes in actual net lending. In its Bills, the Government accounts separately for the effects of an active (discretionary) fiscal policy, capital costs, local government and pension system finances, and a ‘miscellaneous’ item. In other words, these are the factors that give rise to changes in structural net lending. An active fiscal policy affects structural net lending through changes in tax rate or expenditure. Cyclical changes in income or expenditure (or both) only impact net lending. This means that the changes that can be attributed to an active fiscal policy can be taken as a measure of the stabilisation policy orientation of fiscal policy, which we will return to in section 4.3.3.

3.4 The Government’s budgetary calculations

In the Budget Bill, the Government presents a macroeconomic forecast for the next budget year and a forecast for the public finances in the same year. For subsequent years, the Government publishes a calculation of macroeconomic growth based on an assumption of unchanged rules in the transfer and tax systems. This calculation is the basis for the proposal for preliminary income calculations and expenditure limits for the second and third budget years going forward, which the Budget Act requires the Government to present in the Budget Bill. The calculation is the basis for the Government’s proposed expenditure ceiling for the third budget year.

The Government’s projections of these developments follow a specific methodology. The calculations relating to the years after the budget year are not a forecast in the strict sense, because they are

³⁶ The rebate on the EU contribution has now been posted to the accounts in 2016 in accordance with Eurostat’s recommendations. Net lending is thus improved in 2016 and weakened in 2017 compared to BP17.

based on an assumption of unchanged rules.³⁷ A proper forecast would also include a forecast of the policy decisions to be taken if things turn out as in the extrapolation of macroeconomic developments. But the Government does not forecast which policies it is likely to propose. Usually, the Government simply outlines its ambitions for the coming years and adds that reforms will be implemented wherever the fiscal space allows. Nor is it reasonable to demand a detailed account from the Government of what it intends to do. But we can be quite sure that at least some of the rules governing expenditure and tax revenues will be changed. It would therefore be more accurate to describe the calculations presented by the Government for the second and third budget years as simply *calculations* and nothing more.

Altogether, the Government's project method means that public expenditure is often understated in the calculation. This also means that net lending is overstated and gives a misleading picture of the direction of fiscal policy in relation to the surplus target.³⁸ If we go back a few years and examine how the Government's calculations of net lending have evolved over a ten-year period, it is clear that they have been significantly higher on average than the actual outcome (see section 3.5).

Some consequences of the Government's methodology are:

- Unchanged rules mean that the public finances are gradually strengthened of their own accord. The more future years are included in the calculation, the greater the effect. If enough estimate years are included in the calculation, it should always be possible to show that the surplus target has been attained. This is also true of structural net lending. The more distant the year being calculated, the more years of unchanged rules will be included in the calculation and the stronger the public finances will appear to be. We therefore welcome the fact that, from VP17 onwards, the Government will no longer publish calculations extending further than three years ahead. Like the National Audit Office and the NIER, we have

³⁷ Technically speaking, a forecast is a probability-weighted mean of different scenarios. The NIER publishes a trend-type forecast, i.e. a forecast of the most likely scenario. The Riksbank publishes an unbiased forecast, i.e. an average calculated across all relevant scenarios. The Government's estimates for the years after the budget year are neither unbiased nor typical, but a projection of the macroeconomic position assuming unchanged rules.

³⁸ The National Audit Office criticised the Government for this as early as 2007, see RiR (2007).

repeatedly pointed out that the calculations presented by the Government for the years after the budget year understate the true pressure on expenditure and that this means that the Government can show that the surplus target has been attained at the end of the calculation period.³⁹

- The long-term sustainability estimates are affected because, according to the Government's calculation method, they are based on unrealistically high net lending.⁴⁰
- When a debt anchor is introduced into the fiscal policy framework, the calculation of the way in which the Maastricht debt evolves will be crucial to any evaluation of fiscal policy. If net lending at the end of the Government's calculation period is unrealistically high – which is the case with the present methodology – it looks as if gross debt is falling faster than it will do in reality. This will give Parliament a misleading picture of the way in which the debt is likely to change over time.

One way of addressing this problem, which the Government made use of earlier, is to make a technical transfer to the household sector in the medium-term calculations when structural net lending exceeds the level of the surplus target.⁴¹ This was done, for example, in BP01, when technical transfers to the household sector equivalent to 1.3 and 1.6 per cent of GDP were made for the years 2002 and 2003. The Government describes its methodology as follows:

Assuming currently adopted and proposed rules, public finances in 2002 and 2003 are expected to show a surplus of 3.3% of GDP and 3.6% of GDP respectively. In the estimates of the general government sector's interest expenditure and of the central government debt, surpluses in excess of 2 per cent of GDP in the estimates reported for 2002 and 2003 have, however, been transferred to the household sector for technical reasons. The technical nature of this transfer should, however, be

³⁹ See e.g. p. 99–103 in Fiscal Policy Council (2013).

⁴⁰ See Chapter 7, p. 38–44 in RiR (2016b).

⁴¹ The Government recently used the method of technical transfers in its budgetary work in another context. In BP15 the Government announced tax increases from 2016 onwards which exceeded the budgetary effect for 2016–2018 of the reforms proposed in the same Bill. The Government explained that the intention was for the surplus funds to be used to finance future reforms and so transferred these monies to the household sector; see p. 36, BP15.

*emphasised. It has not been decided whether the excess surplus will be used for reforms or for repayments of the central government debt.*⁴²

The Government's decision to stop using this method was probably due to the fact that net lending from BP03 onwards did not attain the then target level of two per cent of GDP.⁴³

In order to address the problems discussed above as far as possible, the Government could work on the assumption of unchanged rules, but adjust general government net lending by making technical transfers to the household sector of net lending in excess of *average net lending eight years into the past*.

3.5 Evaluation of the Government's forecasts

The Council has tasked the NIER with producing a forecast evaluation of the variables GDP and unemployment and for fiscal and structural net lending.⁴⁴ This section presents the results together with the Council's analysis. The Government's forecasts are evaluated against four horizons: current year, next year and the two following years.⁴⁵ The Government's forecasts are also compared with the NIER's and any systematic differences ('bias') in the Government's forecasts is noted.

The forecasts that we evaluated were produced in the period 2007–2016.⁴⁶ For the Government, we have used the forecasts produced in the Budget Bills in the autumn and in the Fiscal Policy Bills in the spring. For the NIER, we have used the forecasts published in 'The Swedish economy', i.e. four times a year. To test for differences in forecasting precision between the NIER and the Government, however, we have used only the NIER's forecasts included in 'The Swedish economy' in March and August.

⁴² BP01, Appendix 2, p. 11–12.

⁴³ However, the long-term calculations from the Ministry of Finance continued to use the method up to BP09.

⁴⁴ See Stockhammar (2017) for the forecast evaluation carried out by the NIER for the Council.

⁴⁵ This is a longer evaluation horizon than the NIER normally uses in its annual forecast evaluation; see e.g. NIER (2017c).

⁴⁶ The appendix to this report discusses the results of the evaluation omitting the years of the financial crisis, i.e. for the period 2010–2016. The comparison between the Government's and the NIER's forecasts is not greatly affected.

GDP, unemployment and net lending are assessed against the first published outcomes for each year, which are generally available in March of the following year. Structural net lending is not assessed against any outcome but against the various forecasters' latest opinion on its level. In this section, we will continue to use the established term 'forecasting error', although for structural net lending it would be more accurate to talk about forecast revisions.

3.5.1 Forecasting precision

To assess the accuracy of the forecasts, we use two different measures: mean absolute error (MAE) and root mean squared error (RMSE).⁴⁷ These measures treat positive and negative variances as equivalent. The most important difference between the measures is that the root mean squared error 'punishes' big differences more than small ones. This means for example that the effect on the mean is greater if the forecasting error increases from 3 to 4 percentage points than if it rises from 1 to 2 percentage points.

The Government's and the NIER's forecasting precision are shown in Table 3.2. It can be seen that the mean absolute error increases with the forecasting horizon, which is expected. The longer the forecast period, the greater the uncertainty. Moving from a two-year horizon ($t+2$) to a three-year horizon ($t+3$), however, breaks the pattern. Both analysts' MAE for GDP growth decreases as we move from $t+2$ to $t+3$. For other variables, the Government's precision remains a negative function of the length of the forecasting horizon, while the NIER's precision also improves for unemployment and net lending.

The Government has worse precision than the NIER for practically all variables and horizons. The differences are not statistically significant in the short term, but they are in the long term for fiscal and structural net lending, and for unemployment. For GDP growth, the differences in precision are not statistically significant whatever the horizon.⁴⁸

⁴⁷ For a definition of the measures used in this section, see appendix and Stockhammar (2017).

⁴⁸ A Diebold-Mariano test is used to examine differences in forecasting precision between the Government and the NIER. The Government's forecasts in Budget Bills and Spring Fiscal Policy Bills are set against the NIER's forecasts in August and March respectively. For more information on this test, see e.g. Diebold and Mariano (1995) and the appendix to this report.

The mean difference in absolute error for unemployment and net lending is basically zero for horizon $t+0$, but increases to 0.4 and 0.8 percentage points for horizon $t+3$ (see appendix). For structural net lending, the Government is (insignificantly) better for the current year and next year, but for the last horizon ($t+3$), the NIER's precision is one percentage point higher on average.⁴⁹ So the NIER produces more accurate forecasts than the Government, particularly for longer horizons.

Table 3.2 Mean absolute error (MAE) and root mean squared error (RMSE) for forecasts produced from 2007–2016

	GDP growth		Unemployment		Net lending		Structural net lending	
	Govt	NIER	Govt	NIER	Govt	NIER	Govt	NIER
MAE								
t+0	0.87	0.76	0.23	0.20	0.69	0.57	0.61	0.53
t+1	2.22	2.04	0.93	0.84	1.41	1.33	0.95	0.99
t+2	2.23	2.18	1.53	1.30	2.22	1.88	1.11	1.05
t+3	1.62	1.59	1.72	1.25	2.65	1.73	2.12	1.42
RMSE								
t+0	1.14	1.07	0.29	0.27	0.90	0.77	0.72	0.65
t+1	3.11	2.91	1.31	1.20	1.75	1.69	1.14	1.13
t+2	3.03	3.16	2.02	1.82	2.55	2.26	1.45	1.36
t+3	1.96	1.90	1.95	1.59	3.08	1.97	2.42	1.81

Note: The mean absolute error (MAE) is the arithmetic mean of the absolute values of all forecasting errors. The root mean squared error (RMSE) is the square root of the mean of the squared forecasting errors. For both measures, a higher value indicates worse forecasting precision. Both measures can be interpreted in the normal units used for the respective variables, e.g. as a proportion of GDP, or percentage change. ¹ At market price. ² Government: open unemployment aged 16–64, spring 2007, followed by unemployment aged 16–64 according to the ILO definition up to autumn 2008, then unemployment aged 15–74 according to the EU definition. NIER: open unemployment aged 16–64 from March 2007 to June 2007, followed by unemployment aged 16–64 according to the ILO definition up to March 2011, then unemployment aged 15–74 according to the EU definition. ³ Percentage of GDP. ⁴ Percentage of potential GDP.

Source: Stockhammar (2017).

3.5.2 Systematic differences

To test for systematic under and over-estimates, we use the mean forecast error (MFE). This measure does consider whether the differences are positive or negative.

⁴⁹ The differences are calculated here as the Government's error minus the NIER's error. A positive difference means that the Government has worse precision than the NIER and vice versa.

Both the Government and the NIER tend to overstate net lending two to three years ahead (Table 3.3). It is clear, however, that the Government's over-estimate of net lending is much worse than the NIER's.⁵⁰ It is not surprising that the Government over-estimates net lending two to three years ahead. Based on the discussion above, the Government's assumption of unchanged rules will lead to a tighter trend in expenditure than we find in the NIER's forecasts.

Table 3.3 Mean forecast errors for forecasts produced 2007–2016

	GDP growth		Unemployment		Net lending		Structural net lending	
	Govt	NIER	Govt	NIER	Govt	NIER	Govt	NIER
t+0	-0.32	-0.22	0.03	0.03	-0.42	-0.37	-0.05	-0.03
t+1	0.31	-0.04	0.04	0.19	0.08	-0.29	0.60	0.27
t+2	1.17	0.59	-0.47	0.03	1.33	0.36	1.43	0.94
t+3	0.76	0.38	-1.16	-0.36	2.61	1.12	2.50	1.45

Note: The mean forecast error is the average forecasting error, defined as forecast minus outcome. A positive difference means an over-estimate of the outcome ($p > u$) on average, and vice versa. For variable definitions, see notes to Table 3.2.

Source: Stockhammar (2017).

The Government also over-estimates GDP growth, and under-estimates unemployment more than the NIER two and three years ahead. However, these differences are not dramatic.

3.5.3 Theil's U: comparisons with a 'naive' estimate

An alternative to comparing forecasts from two different forecasting bodies is to compare their forecasts with a 'naive' forecast, i.e. a method that sets the forecast value to the latest known outcome. This method answers the question whether the institution's forecast adds any useful information compared to the last known outcome. The method involves deriving the ratio between the forecasting body's root mean squared error and what a naive forecast would have produced. This ratio is called Theil's U.⁵¹ We use the method here to analyse the Government's forecasts produced in the years

⁵⁰ The Government's standard error for net lending is significantly different from zero for horizons t+0, t+2 and t+3 and for structural net lending for horizons t+2 and t+3. The NIER's standard error is not significant for horizon t+2, but it is for the last horizon. For a full account of the test results, see appendix.

⁵¹ See Theil (1966).

2007–2016.⁵² To take account of differences in the volume of information, we divide the analysis into forecasts produced for the autumn Budget Bills (BP) and the Spring Fiscal Policy Bills (VP).

The results are presented in Table 3.4. It may first be noted that the forecasts included in the autumn budgets are generally more accurate than those in the Spring Fiscal Policy Bills. This is to be expected, as the Government has access to more information in September than in April. The Government performs better than a naive forecast for all four variables for horizon $t+0$, i.e. the current year. This is true whatever the year of the forecast.

From the very next year ($t+1$), however, the picture starts to break up somewhat. The forecasts for unemployment do not appear to add anything to the assumption that the values for the previous period will also apply in the future. For GDP growth, on the other hand, the Government's forecasts beat the naive approach whatever the time horizon.

The Government's forecasts for net lending are more accurate than the naive forecast for the current year and the next, but not further ahead in time. The Government therefore seems to have information which is valuable in assessing how the public finances are likely to evolve in the short term, but for two and three years ahead, the Government's assumptions of unchanged rules take effect and tend to result in worse forecasts than the naive approach.

The forecasts for structural net lending produced in the spring never beat the naive forecast, although the differences are small. In the autumn, however, the Government's forecast for structural net lending performs relatively well against the naive forecast; only for year three is the naive forecast slightly better.

⁵² Theil's U for the NIER's forecasts is described in the appendix to this report.

Table 3.4 Theil's U for the Government's spring and autumn forecasts, 2007–2016

		GDP growth	Unemployment	Net lending	Structural net lending
<i>Spring</i>	t+0	0.34	0.42	0.77	1.01
	t+1	0.65	1.13	0.94	1.10
	t+2	0.83	1.91	1.45	1.08
	t+3	0.60	1.94	1.67	1.31
<i>Autumn</i>	t+0	0.19	0.30	0.51	0.74
	t+1	0.58	1.03	0.67	0.93
	t+2	0.85	1.75	1.10	0.78
	t+3	0.62	1.80	1.37	1.06

Note: Theil's U compares precision (RMSE) between a forecaster and a naive forecast. Theil's U = 1: equal forecasting precision. Theil's U > 1: naive forecast better. Theil's U < 1: forecaster better.

Source: Stockhammar (2017) and own calculations.

It is interesting to contrast the results in Table 3.4 with the root mean squared error for the same variables (Table 3.2). The Government had the highest RMSE for GDP growth and the lowest for unemployment. However, the opposite is true of Theil's U. One reason for this may be that unemployment changes slowly and so can be forecast reasonably well by the naive approach. GDP growth, on the other hand, is more volatile and tends to be harder to capture with a naive forecast.

3.6 Assessments and recommendations

When BP17 was produced, the Government took a different view of the economy than the NIER. Whereas the NIER judged in August 2016 that the output gap would be positive in all of the next few years, the calculations from the Ministry of Finance showed a closed output gap, i.e. economic equilibrium. We find that most of the indicators for resource utilisation suggest that the NIER's view of the economy is more realistic than the Government's. Other analysts, such as the Riksbank, the IMF and the OECD, have forecasts in which the output gap becomes significantly more positive than the Government's in the coming years. The fact that the Government expected economic equilibrium means that the forecast for structural net lending is higher than it would otherwise have been. We

therefore believe that such a view should be properly supported and explained.

In VP17 the Government revised its view of the output gap upwards and it is now expected to be slightly positive this year and next before closing again. However, the Government still has a much lower forecast of resource utilisation compared to other analysts. The fact that the output gap is not more positive in the Government's forecast appears to arise from the fact that potential GDP is judged to be higher than it is in e.g. the NIER's forecast. This in turn is based on higher estimated potential productivity in the future. The estimate of potential GDP is crucial, both to the forecast of structural net lending and for e.g. the expenditure ceilings which the Government has previously said should be set against potential GDP.

The Government's forecast for GDP is higher than the NIER's while unemployment is lower. However, the Council's forecast evaluation shows that the Government has tended to over-estimate GDP growth and under-estimate unemployment more than the NIER for the outcome years 2007–2016. Looking back, the Government's forecasts for GDP growth, unemployment, and fiscal and structural net lending have been less accurate than the NIER's. When the Government's forecasts are compared with a 'naïve' forecasting method, the results are mixed. For GDP growth, the Government is better than the naïve approach, while the precision is worse when it comes to unemployment. All in all, the Council feels that the Government should be able to produce more accurate forecasts than it has managed to date. This is particularly true of fiscal and structural net lending because the Government may be expected to have access to the most up-to-date information.

One reason why the Government's unemployment forecast is lower than the NIER's is that the Government also produces a lower estimate of equilibrium unemployment. The Government expects the equilibrium level to fall to 6.2 per cent in 2020, in contrast to the NIER's 6.7 per cent. This difference is equivalent to around 27,000 jobs. The Government's and the NIER's forecasting methods are very similar. The fact that they nevertheless arrive at different conclusions is down to the use of different starting values for the demographic projection (see section 2.5), and the fact that they take different views of policy effects and structural factors on the labour

market in the future. We believe that the Government should account more clearly for the estimates made, and suggest that the Government should publish sensitivity analyses showing the implications for potential GDP and structural net lending of alternative assumptions regarding equilibrium unemployment.

The Government's calculation of the public finances results in a systematic overstatement of fiscal and structural net lending over the next two to three years. We believe that the Government should apply an extrapolation method to provide a more realistic picture of how the public finances are likely to develop.

4 Budgetary and stabilisation policy for the period 2017–2020

This chapter provides a brief account of the policy presented by the Government in the Budget Bill for 2017 and the 2017 Spring Fiscal Policy Bill. We discuss the policy in the light of the major influx of asylum immigrants in the second half of 2015. The chapter also analyses budgetary policy and the contribution of fiscal policy to stabilising economic development.

4.1 The Budget Bill for 2017

The reforms in the Budget Bill for 2017 (BP17) are in line with the reform agenda for the Government's term in office set out in its policy statement in the autumn of 2014.¹ Foremost among the Government's priorities are more resources for municipal and county authorities. Some of this investment is driven by the large influx of asylum-seekers in 2015, but other arguments are also advanced for it. According to the Government's account, the reforms presented will cause an increase in gross expenditure of around SEK 24 billion in 2017. The Government has opted not to bring many of the reforms into force until after the election in 2018. These include measures for 'more jobs', where two-thirds of the spending will occur after the 2018 election (Table 4.1).

Table 4.1 Reforms in the Budget Bill for 2017

<i>Costs in SEK billions</i>	2017	2018	2019	2020
More resources for welfare	10.88	11.05	11.07	11.07
More jobs	5.76	8.54	13.75	15.86
One of the world's first fossil-free countries	3.77	4.95	5.65	6.14
Refugee reception	2.76	2.82	1.69	1.29
A safe and secure society	0.46	0.74	1.31	1.62
<i>Total reforms</i>	23.63	28.10	33.47	35.98

Note: The Government's five main headings cover reforms in a large number of areas. *More resources for welfare* mainly concerns a permanent increase in the State contribution to the municipalities of SEK 10 billion per year, while measures for *More jobs* are to take the form of broadband expansion and a knowledge lift; see p. 27 in BP17 for further information on the Government's policy.

Source: Table 1.1, p. 27 in BP17.

¹ Government (2014)

4.1.1 Discussion

I BP17, the Government describes asylum immigration in 2015 as an exceptional event which can be handled without any need for short-term budget increases. The Government points out, however, that the high level of asylum immigration means that the local government sector will need permanently increased resources, and that it intends to implement a number of measures to reduce government expenditure. As an example of the latter, the Government mentions savings in the benefits system for unaccompanied children and young people.² The Bill says nothing about the rate at which Government expenditure is expected to decrease. The Government simply writes that greater stress should be placed on development over a slightly longer period when temporary effects have a big impact on the public finances.³ What this means in practical terms is unclear.

In the Bill, the Government emphasises the importance of pursuing a responsible economic policy and suggests that there is a need to build up margins to cope with the next economic downturn.⁴ How this should be done is not explained, however. The Government merely writes that it intends to pursue a fiscal policy which is calculated to attain the surplus target no later than 2020.⁵

The Government states – far down in the text of the Bill – that, until the Riksdag has reached a decision on a new target level for net lending, the target of net lending equivalent to 1 per cent of GDP averaged over the business cycle will apply.⁶ It also appears that the Government will in practice align its policy with the new level of 1/3 per cent of GDP; the level proposed by the Surplus Target Committee will apply from 2019 onwards.⁷ The Government says nothing more about how it views the transition from the 1 per cent level to the new, lower, target level. The Government should have been clear on these points. If the Government is already aligning its policy with the lower target of 1/3 per cent of GDP, which will probably take effect from 2019, this should be clear from the

² BP17, p. 31.

³ Ibid., p. 30-31.

⁴ Ibid., p. 31.

⁵ Ibid., p. 175.

⁶ Ibid., p. 174.

⁷ See also section 5.1.4.

argumentation in the Bill and the conclusions that the Government draws from this. It would also have been good if the Government had presented a detailed rationale for how the transition from a surplus target of 1 per cent to a target of 1/3 per cent averaged over a business cycle should be handled in practice.

4.1.2 The 'fiscal space'

According to the calculations in BP17, both fiscal and structural net lending will amount to -0.3 per cent of GDP in 2017. The output gap is judged to have been closed, so the cyclical adjustment will be zero. The level of net lending is much lower than the surplus target, and the Government also notes that net lending is far removed from the target level. This means that there is no room in 2017 for any unfunded measures. In this situation, the Government should be aiming at a structural surplus. As we noted in Chapter 1, back in August 2016 the economy was judged to be stronger than the Government assumes in BP17, which is another reason to pursue a much tighter fiscal policy than the Government presents in BP17. In spite of this, the Government is proposing measures that together weaken the public finances in 2017 by SEK 16 billion.⁸

In view of the fiscal policy rules, it is worrying that the Government is choosing to weaken the budget in 2017, and the basis for the figure of SEK 16 billion is also unclear. The 'fiscal space' is admittedly not a clearly defined concept. Any assessment of what is a reasonable fiscal space is based on complex deliberation. But the preparatory work for the Budget Act uses the term to indicate how much scope there is for any weakening of the public finances *without the risk of deviating from the surplus target*.⁹ The NIER defines the fiscal space as "the extent of the unfunded measures that can be implemented during the scenario period without general government net lending deviating from the surplus target".¹⁰ The Government itself has described the fiscal space in a similar way in earlier Bills.¹¹ But BP17 says nothing about how the Government has determined that a weakening of the public finances by SEK 16 billion in 2017 is

⁸ BP17, Table 1.1, p. 27–28. We note that the NIER considers that the budget for 2017 is underfunded by around SEK 12 billion and not SEK 16 billion; see NIER (2016c), p. 97–100.

⁹ See e.g. SOU 2013:73, p. 106.

¹⁰ NIER (2016a), p. 53–54.

¹¹ See e.g. VP08, p. 142–145.

well-judged.¹² We consider this an omission. The Government should state how it has arrived at its assessment and explain how its action can be reconciled with the fiscal policy framework.

4.1.3 The 2017 Spring Fiscal Policy Bill

When the Government presented the 2017 Spring Fiscal Policy Bill (VP17), a Spring Amending Budget for 2017 (VÄB17) was also put forward.¹³ The Government justifies the measures in VÄB17 on the basis that events have occurred at the international and national level that could not have been foreseen in BP17.

In response to developments in security policy in the region and events that have exposed the vulnerability of Swedish society, the armed forces have been allocated SEK 0.5 billion, the police SEK 0.7 billion, the psychiatric services and social care for children and young people SEK 0.3 billion and the school sector SEK 0.7 billion for measures aimed at reducing segregation in schools, while county councils have been allocated SEK 0.5 billion to enhance maternity care. Funding of SEK 3.1 billion has also been allocated to climate-related measures, subsidised medicines and overseas aid. Expenditure is further increasing by a total of SEK 1.0 billion because volumes or macroeconomic conditions have changed since BP17.

Table 4.2 Budgetary effects of active measures in VÄB17

<i>SEK billions</i>	2017	2018	2019	2020
Change in capped expenditure	5.6	0.0	0.0	0.0
Income changes, net	0.5	0.4	0.4	0.4
Change in net lending	-5.1	0.4	0.4	0.4
<i>Percentage of GDP</i>	<i>-0.1</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>

Note: Budgetary effects on general government net lending in relation to BP17

Source: Table 7.1, p. 131 in VP17.

In all, the proposals in the Bill will worsen general government net lending this year by SEK 6.1 billion, of which SEK 5.1 billion relate

¹² When the Budget Bill was presented (e.g. at the press conference in Harpsund on 23 August 2016), the figure of SEK 24 billion was suggested as a measure of the fiscal space. However, this figure says nothing about the overall effect of the budget on the public finances, but refers only to the expenditure increases, including the part that was funded.

¹³ According to Chapter 9 Article 6 of the Riksdag Act, the Government can submit an amending budget with the Spring Fiscal Policy Bill and the Budget Bill.

to discretionary measures and SEK 1.0 billion to increased appropriations resulting from changed volume assumptions and macroeconomic conditions. One consequence of this is that structural net lending will be weakened between 2016 and 2017 by 0.1 percentage points of potential GDP. VP17 puts net lending in 2017 at 0.3 per cent and structural net lending at 0.3 per cent of GDP (as against -0.3 per cent and -0.3 per cent of GDP in BP17).

4.2 The expenditure ceiling for 2017–2020

In BP17 the Government proposes an expenditure ceiling for the State for the third fiscal year ahead, i.e. 2019, and makes an estimate of the level of the expenditure ceiling in 2020. The expenditure ceilings for the years to 2018 have already been determined and the Government is not proposing any changes to these ceilings.

Table 4.2 The expenditure ceiling

<i>SEK billions, unless stated otherwise</i>	2015	2016	2017	2018	2019	2020
The Budget Bill for 2017						
Expenditure ceiling ¹	1,158	1,215	1,274	1,332	1,392	1,466
<i>percentage of potential GDP</i>	27.6	27.9	28.1	28.1	28.1	28.3
Capped expenditure	1,135	1,197	1,248	1,281	1,298	1,321
Budget margin	23	18	26	51	94	145
Budget margin, percentage of capped expenditure	2.0	1.5	2.1	4.0	7.3	11.0
Spring Fiscal Policy Bill 2017						
Expenditure ceiling	1,158	1,215	1,274	1,332	1,392	1,466
<i>percentage of potential GDP</i>	27.4	27.8	27.9	28.0	28.1	28.4
Capped expenditure	1,135	1,184	1,242	1,271	1,280	1,304
Budget margin	23	31	32	61	112	162
Budget margin, percentage of capped expenditure	2.0	2.6	2.6	4.8	8.7	12.4

¹In BP17 and VP17 the Government presents an estimate of the level of the expenditure ceiling in 2020; BP17, p. 179.

Source: BP17 and VP17.

The expenditure ceilings for 2019 and 2020 have the ceilings rising much faster than the forecasts for capped expenditure, causing the budget margin to grow significantly up to 2020. The budget margin is the difference between the expenditure ceiling and the capped expenditure and should mainly

Box 4.1 About the expenditure ceiling

The expenditure ceiling for the State was introduced in 1997. Under the Budget Act, the Government is required to propose an expenditure ceiling in the Budget Bill for the third budget year into the future. The Riksdag approves the expenditure ceiling.

The expenditure ceiling for the State is a key budgetary policy commitment which is intended to promote budgetary discipline and enhance the credibility of economic policy. A major function of the expenditure ceiling is to provide the conditions for attaining the surplus target. The level of the expenditure ceiling should also promote a desirable long-term evolution of government expenditure. Together with the surplus target, the level of the expenditure ceiling determines the total tax take. The level of the expenditure ceiling should therefore match one's view of how much tax can be collected without excessive socio-economic costs.

The expenditure ceiling also has a key function in the internal budgetary discussions in the Government Offices, because it sets an upper limit on total expenditure in the proposed Government budget. In this way, the expenditure ceiling creates a clear 'top-down mechanism' in the budgetary work, and brings out priorities within and between different areas of expenditure.

The level of the expenditure ceiling is an expression of the Government's view of how its public commitment should develop. The composition of the expenditure and total public-sector assets, and the tax take required to finance the expenditure, are a monetary expression of the ideological positions underlying government policy. There are no formal barriers to the Riksdag reviewing an expenditure ceiling decided on earlier. The practice that has developed is however that the expenditure ceiling is not changed.¹⁴ This has only happened in a few isolated cases, and then only as a result of changes in the direction of budgetary policy. It happened, for example, after the change of government in the autumn of 2014, when the expenditure ceilings were raised by SEK 33 billion for 2015, SEK 41 billion for 2016, and SEK 52 billion for 2017. Source: Budget Act, Ministry of Finance (2011a).

¹⁴ When the Government proposes an expenditure ceiling, so-called technical adjustments are often made to ceilings adopted earlier. This is a system that has existed since the expenditure ceiling was introduced and which is meant to ensure that the expenditure ceilings retain their original tightness even if the reporting changes or there are other technical changes; see Ministry of Finance (2011a), p. 27–28 and Fiscal Policy Council (2016), p. 46–47.

act as a buffer if expenditure develops in an unexpected way because of cyclical developments.

In BP17 the Government puts the budget margin for 2019 at SEK 94 billion and for 2020 at SEK 145 billion, equivalent to 7.3 and 11.0 per cent of the capped expenditure. In VP17 the Government presents even bigger budget margins (Table 4.2). The space under the expenditure ceiling a few years ahead is thus greater than ever before. The guideline that the Government uses is that the budget margin should be at least 1 per cent of the capped expenditure for the current year, 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 $t+3$ and $t+4$.¹⁵ At the same time, there is an argument that the budget margin for the third and fourth years should be no greater than necessary to allow the expenditure ceiling to have a reasonably restraining effect on expenditure growth.¹⁶ The expenditure ceiling should not be seen as an expenditure target.¹⁷ The budget margin may however be used progressively to finance expenditure reforms and other expenditure that is not the result of economic developments, as the need for a safety margin decreases. This is on condition that the expenditure changes are compatible with the surplus target. The expenditure ceilings for 2019 and 2020 thus leave plenty of scope for increased expenditure in the medium term.

Table 4.3 Budget margin

SEK billions	2015	2016	2017	2018	2019	2020
Budget Bill for 2017 (Sep-16)	23	18	26	51	94	145
ESV (Dec-16)	23	35	31	74	119	174
NIER (Dec-16)	23	28	42	66	87	-
NIER (Mar-17)	23	31	43	55	73	-
ESV (Apr-17)	23	31	40	76	128	180
Spring Fiscal Policy Bill 2017 (Apr-17)	23	31	32	61	112	162

Source: BP17, ESV, NIER and VP17.

The estimates from the Swedish National Financial Management Authority (ESV) and the NIER confirm that the space under the expenditure ceiling is substantial. The ESV's lower expenditure

¹⁵ BP17 p. 177.

¹⁶ A more detailed discussion of the guideline for the minimum amount of the budget margin can be found in the 2011 Spring Fiscal Policy Bill, Appendix 4.

¹⁷ Ministry of Finance (2011a), p. 29.

forecast in December revealed a space under the expenditure ceiling SEK 29 billion greater than in BP17 for the year 2020. Unlike the ESV and the Government, the NIER bases its expenditure calculations on an unchanged public-sector commitment, which assumes unchanged staffing levels in the public welfare services.¹⁸ The calculations thus include the expenditure increases required to maintain an unchanged public-sector commitment, even though this requires policy decisions. The Government and the ESV, on the other hand, assume that no new decisions will be taken. Although these expenditure increases are included in the NIER's calculations, the space under the expenditure ceiling is very large (Table 4.3).

4.2.1 Exceptionally large budget margins

The forecasts for capped expenditure indicate that expenditure is increasing much more slowly than the expenditure ceilings, which will give rise to an ever-increasing budget margin further down the line. To some extent this can be explained by the calculation assumption of an unchanged policy, which means that some expenditure, such as the government contribution to the municipalities, is nominally unchanged. But even based on a more realistic comparison with the growth in expenditure since 1998, the expenditure ceilings for the coming years allow for a faster increase in the capped expenditure than ever before.

The Government states that the expenditure ceilings out to 2020 provide for an annual increase in expenditure of around five per cent in the period 2016–2020. This may be compared with the annual rate of increase in capped expenditure from 1998–2015 of 2.7 per cent per year. The expenditure ceilings therefore leave room for a much higher rate of increase in expenditure than there has been since 1998.¹⁹ The Government also states that the expenditure ceilings will increase by 14 per cent at fixed prices between 2015 and 2020. So the expenditure ceilings have been set to accommodate significant increases in expenditure up to 2020. At the same time, the Government is (slightly perversely) careful to stress that this does not

¹⁸ See NIER (2017a), p. 11, for a definition.

¹⁹ BP17, p. 180 and VP17, p. 77

in itself mean that there is room for any reforms that will increase the capped expenditure.²⁰

The Government emphasises that determining the level of the expenditure ceiling is a policy decision and that this sort of decision cannot be reduced to a calculation using a pre-defined formula. The Government writes: “The level of the expenditure ceiling is an expression of the Government’s view of how total public spending and expenditure on the pension system should increase in the medium term”.²¹ We agree that the expenditure ceiling is the expression of a political aspiration and that different governments will have differing views on what is an appropriate level of public spending, but none of the Bills set out the considerations that prompt the Government to propose the expenditure ceilings that it does. The Government could have given a political justification for its decision and explained what the level means for its economic policy.

In BP15 the Government proposed a politically motivated rise in the expenditure ceilings and wrote that the ceilings during its term in office should be set so as to maintain the same relationship to the growth trend in the economy,, i.e. so they make up a constant proportion of potential GDP.²² The expenditure ceilings in BP15 were in fact set to equal 28.0 per cent of potential GDP every year to 2018.²³ One interpretation of the expenditure ceilings for 2019 and 2020 is that the Government is basically sticking to this view of what constitutes a reasonable growth in expenditure. In 2019 the expenditure ceiling will be 28.1 per cent of potential GDP, rising to 28.4 per cent in 2020.²⁴ However, it is unclear whether the expenditure ceilings the Government proposes will really maintain the same relationship to the growth trend in the economy. In Chapter 3 we saw that the Government’s calculation of the level of potential GDP in the next few years differs from the NIER’s. If the expenditure ceilings are set according to the NIER’s calculation, it appears that the expenditure ceiling as a proportion of potential GDP is growing (Figure 4.1).

²⁰ Ibid.

²¹ BP17, p. 179.

²² BP15, p. 176.

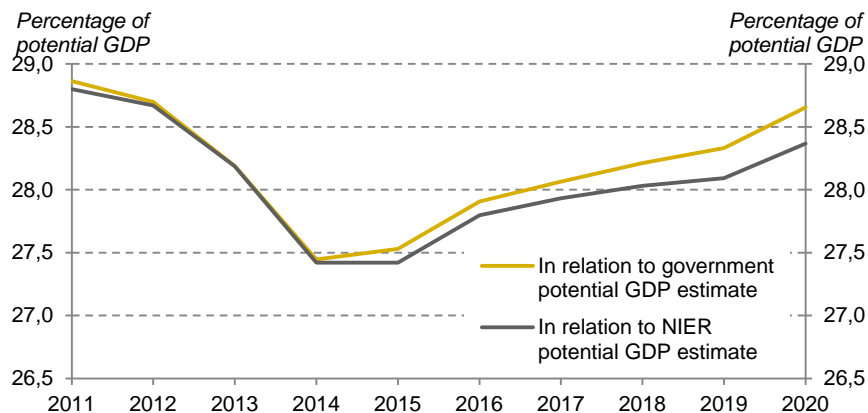
²³ Ibid., p. 37.

²⁴ It is not clear from Bill why this proportion has increased over the last year.

The Government should explain what the expenditure growth allowed by the expenditure ceiling means for its economic policy.

Setting the expenditure ceiling at a level that helps to ensure that the surplus target is achieved is a key part of an effective framework, whatever the level of the surplus target.²⁵ So it is informative to examine the relationship between the expenditure ceiling and the surplus target. This can be done with a simple calculation, based on the figures in the Budget Bill. In BP17, the Government calculates that structural net lending in 2020 will amount to 1.6 per cent of potential GDP, equivalent to around SEK 80 billion, while a surplus target of 1/3 per cent of GDP equates to approx. SEK 15 billion.²⁶ This means that a surplus of approx. SEK 65 billion is projected for 2020, over and above what is needed to attain the surplus target. However, the space under the expenditure ceiling is much bigger: SEK 145 billion according to BP17. Even if all of the space left after structural net lending of 1/3 per cent of GDP should be used for increased expenditure, there would still be around SEK 80 billion remaining under the expenditure ceiling in 2020.²⁷

Figure 4.1 The expenditure ceilings as a proportion of potential GDP according to the Government and the NIER



Note: The expenditure ceiling in relation to various estimates of potential GDP (moving prices), according to the Government (in VP17) and the NIER (in March 2017).

Source: VP17 and NIER (2017b).

²⁵ SOU 2016:67, p. 150–151.

²⁶ Target attainment is not measured by structural net lending, but the level of structural net lending can be used to set the expenditure ceiling in relation to the surplus target.

²⁷ On the other hand, if the surplus target remains at 1 per cent of GDP in 2020, there will still be around SEK 115 billion left under the expenditure ceiling.

The level of the expenditure ceiling and the view of what constitutes a reasonable growth in expenditure over a number of years have implications for tax policy. The expenditure ceiling is an expression of the Government's estimate of the highest acceptable level of government expenditure in the medium term. The expenditure ceiling is therefore also an implicit expression of the Government's estimate of the highest acceptable tax take, i.e. the level of tax take needed to meet the surplus target if the space under the expenditure ceiling is all used up. It is thus entirely possible to meet the surplus target and also increase expenditure in line with the proposed expenditure ceilings in BP17, but this calls for greater tax revenues. If the SEK 80 billion in the above calculation are used, the Government needs to fund its reforms entirely from higher tax revenues if it is also to meet the surplus target.

The Government should justify its choice of expenditure ceiling and discuss what such a growth in expenditure means for taxes and the surplus target.²⁸ The Government writes that the expenditure ceilings enable priority reforms to be implemented in future Budget Bills, but also that the fiscal space does not in itself mean that it will be used for reforms that increase expenditure. What constitutes a reasonable growth in expenditure is thus an open question in the Government's eyes. In the coming years, the expenditure ceiling offers no support for the surplus target and leaves unanswered the question of what the Government considers to be a reasonable tax take.

4.2.2 Follow-up to the Council's criticism of the handling of the expenditure ceiling for 2016

At the end of 2015, the Government judged that the space under the expenditure ceiling for 2016 would be too small and adopted a number of measures to increase it. One of these was a pure accounting measure, which the Council criticised in its 2016 report. We felt that such measures risked undermining the credibility of the expenditure ceiling, and it would have been better to refrain from

²⁸ The Government's rationale for the proposed expenditure ceilings has varied over the twenty years in which the present budget process has been in use. The early Bills clearly stated that the level of the ceiling was based on the surplus target. Most of these early Bills proposed an expenditure ceiling that was consistent with the surplus target without the need for any tax increases; see RiR (2007).

pure accounting transactions and accept a slightly greater risk of needing to raise the expenditure ceiling later in 2016.

The Government rejected the Council's criticism on the basis that it would have caused worse damage to propose an increase in the expenditure ceiling than to take accounting measures.²⁹ This argument is hard to understand. The Council never suggested that the Government should decide to raise the expenditure ceiling for 2016 in December 2015. Nor was the *de facto* choice at that time between these alternatives, because a decision to raise the expenditure ceiling for 2016 could have waited until later. The Council advised the Government to refrain from accounting transactions and *await developments in 2016*. The outcome for 2016 then showed that the expenditure ceiling would have held even if the Government had not effected the accounting transactions at the end of 2015.

4.3 The Government's stabilisation policy

Sweden has a floating exchange rate. In an economy with a floating exchange rate, monetary policy is usually more effective than fiscal policy as a stabilisation policy instrument. The Riksdag has delegated responsibility for monetary policy to the Riksbank. The purpose of monetary policy is to stabilise inflation around two per cent. Without disregarding this inflation target, the Riksbank also aims to stabilise production and employment around long-term sustainable development lines. But fiscal policy can also help to stabilise production and employment. The fact that general government net lending automatically worsens in an economic downturn (and vice versa) helps to stabilise the economy. Furthermore, fiscal policy may sometimes need to provide active support to monetary policy.

4.3.1 General government net lending and stabilisation policy

In our stabilisation policy analysis, we need a reference point to be able to characterise the level of net lending. Here, the surplus target is the obvious choice. A credible surplus target reinforces the

²⁹ BP17, p. 587.

expectations of households and businesses that general government net lending will remain at a certain level over time. Supply and demand in the economy will also be affected if net lending deviates from this level.

According to the surplus target, net lending should average 1 per cent of GDP over a business cycle. If net lending deviates from 1 per cent of GDP, this may be seen as a sign that fiscal policy is either too tight or is stimulating demand in the economy. The deviation may arise out of changes in the economic situation, because active decisions have changed the direction of fiscal policy or an ‘automatic’ consolidation of net lending has occurred because most government revenue is more closely linked to growth than government expenditure and many expenditure items are not indexed.³⁰

Structural net lending (referred to below as ‘structural net lending’) is a measure of what net lending in the public sector would be in a normal economic situation, i.e. a situation in which neither tax revenues nor government expenditure deviate from the norm for cyclical reasons.³¹ Structural net lending is an indicator that the Government uses to assess whether the surplus target will be achieved (see section 5.1.5). The level of structural net lending relative to the surplus target also indicates whether fiscal policy is suppressing or supporting demand in the economy compared to a situation in which structural net lending is equal to the surplus target.

³⁰ See Fiscal Policy Council (2011), p. 71–79. The ESV estimates this effect at approx. 0.5 per cent of GDP per year; see ESV (2013).

³¹ Structural net lending is also adjusted for factors of a one-time character, and for where the tax bases differ from an estimated trend, see Ministry of Finance (2015).

Box 4.2 Stabilisation policy

Active fiscal policy

An active fiscal policy means that the Riksdag or the Government decides on changes to taxes and expenditure that lead to changes in general government net lending. Note that the primary purpose of fiscal policy measures is not to reduce cyclical fluctuations, but that such measures may impact stabilisation policy.

Automatic stabilisers

Fiscal policy has an impact on the economy and net lending even in the absence of active decisions by way of the automatic stabilisers. These stabilisers may have a significant impact on the economy, and this effect is normally large enough to be the main fiscal policy contribution to stabilisation policy.

The automatic stabilisers are the automatic response of fiscal policy to cyclical swings. In a downturn, for example, tax revenue decreases while expenditure such as unemployment benefits increases without the need for any decisions to be taken. The resulting budgetary decrease helps to counteract the downturn.

The stabilising effect of the automatic economic stabilisers is usually a by-product of a policy with aims other than stabilisation policy objectives.

We also speak of *semi-automatic* stabilisers. Such measures are a hybrid between active decisions and automatic stabilisers. They include various types of labour market initiatives which are frequently adopted when unemployment increases for cyclical reasons. The semi-automatic stabilisers are part of an active fiscal policy. In the calculations presented by the Ministry of Finance, these measures appear under the heading 'active fiscal policy'.

Stabilisation policy considerations in fiscal policy

The fiscal framework emphasises that the most important contribution of fiscal policy to stabilising the economy is to maintain confidence in the long-term sustainability of the public finances. If stabilisation policy measures are taken, they should be designed to enable net lending to return to a level in line with the surplus target when resource utilisation returns to normal. Thus, the need to safeguard public finances imposes a limit on the possible scale of

active measures. Experience shows that the decrease in net lending associated with an economic downturn is generally greater than the corresponding increase when the economy recovers. In this respect, economic cycles are not usually symmetrical. These factors should prepare us for net lending to be often lower than expected, rather than higher.

Structural net lending should normally be equal to the target level for net lending when the economy is in equilibrium. In a situation in which the surplus target seems unlikely to be met, the Government must have very good reasons for taking permanent measures in order to support weak demand.

If an active fiscal policy causes structural net lending to fall below the target level in a downturn, structural net lending should be above the target level when the economy rises above a balanced level of resource utilisation. In a normal economic situation, any deviation from the target should decrease at the same rate as usual in the absence of active policy decisions. At a high level of resource utilisation, the difference should decrease at a faster rate, while it may decrease more slowly with low resource utilisation.

Our characterisation of fiscal policy is based on an analysis of both resource utilisation and structural net lending relative to the surplus target. This means, for example, that if resource utilisation is normal but structural net lending is well below the target level, this is an indication of an expansive fiscal policy.

Source: Ministry of Finance (2011a) and SOU 2016:67.

Table 4.4 General government net lending 2011–2020

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Net lending	-0.1	-0.9	-1.4	-1.6	-0.1	-0.2	-0.3	0.0	0.8	1.5
<i>Adjustments</i>										
Output gap ¹	0.7	1.3	1.3	1.0	0.4	0.0	-0.1	0.0	0.0	0.0
Unemployment gap ²	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Composition of the tax bases ³	0.3	0.2	-0.5	-0.6	-0.1	0.3	0.2	0.1	0.1	0.1
One-time effects ⁴	0.0	-0.3	-0.3	0.1	-0.5	0.1	-0.2	0.0	0.0	0.0
Structural net lending	1.0	0.4	-0.7	-0.9	-0.2	0.2	-0.3	0.1	0.9	1.6
Output gap ⁵	-1.6	-2.7	-2.7	-2.2	-0.9	0.0	0.2	0.0	0.0	0.0

Note: Percentage of potential GDP, unless stated otherwise. Outcome for 2011–2015, forecast for 2016–2020.

¹ The output gap was negative in 2013, for example, which had a negative effect on net lending. In a normal economic situation, net lending would have been 1.3 percentage points higher than was the case in 2013. Structural net lending is then obtained by adding 1.3 percentage points to the net lending figure.

² Unemployment was also higher than equilibrium unemployment in 2013, which meant that net lending was 0.2 percentage points lower than it would have been if unemployment had been at its equilibrium level. Structural net lending is then obtained by adding 0.2 percentage points to net lending.

³ In 2013, the composition of the tax bases was favourable to net lending, which means that 0.5 percentage points have to be subtracted from net lending to arrive at structural net lending.

⁴ The one-time effect in 2013 is made up of a repayment of insurance premiums from AFA Försäkring. This has to be subtracted from net lending to obtain the structural net lending figure. There were further repayments of insurance premiums from AFA Försäkring in 2012 and 2015. One-time effects from 2014–2017 relate to accruals of Sweden's EU contribution. The year 2015 also includes a one-time tax payment from an international corporation.

⁵ The difference between actual and potential GDP as a percentage of potential GDP.

Source: BP17, vol. 1, Appendix 2, p. 17, and conversations with officials at the Ministry of Finance.

Table 4.4 shows the development of net lending over time, according to BP17. In the period 2011–2017 we see a deficit in net lending. The Government calculates (assuming that no unfunded measures are implemented) that the deficit will be turned into a growing surplus in the years 2018–2020. We can also see that the output gap is judged to be closed from 2016 onwards.

Table 4.4 also shows that structural net lending fluctuates around zero per cent of potential GDP in 2016–2018. As a rule, structural net lending should be at the target level for net lending when the economy is in equilibrium. The fact that structural net lending has now clearly moved away from the target level is an indication that fiscal policy is stimulating demand in the economy for the period 2016–2018. Structural net lending only hits the 1 per cent level in 2019–2020. But this is not due to any active decisions presented or announced in BP17, but to the Government's use of a calculation

method based on unchanged rules. This normally means that, at forecasting time, the Government can present calculations that show higher net lending in the future than for the current year (see section 3.3).

4.3.2 Effects of the overall policy in relation to previous years

Table 4.5 shows the overall budgetary effect of earlier Riksdag decisions and of the Government's proposals and announcements in BP17. The budgetary effects in Table 4.5 have been calculated in relation to previous years and show the extent to which an active fiscal policy weakens or strengthens the public finances compared to earlier years. For the period 2016–2020 the net effect on the public finances of the active fiscal policy is considered to be a slight weakening (SEK -10.3 billion over the whole period). The active fiscal policy weakens net lending in 2016 by around SEK 15 billion, which is largely due to higher government grants to municipal and county authorities paid out in response to the huge influx of asylum-seekers at the end of 2015. For 2017 onwards, the expectation is that the proposals in BP17, together with earlier decisions, will not affect the public finances to any significant extent.

Table 4.5 Overall budgetary effects of the Government's policy in relation to previous years

SEK billions	2016	2017	2018	2019	2020
Total expenditure changes ¹	45.2	9.5	-5.7	2.2	1.8
Total income changes, net ²	30.7	8.0	2.2	2.3	-0.5
<i>Net effect of changes to income and expenditure on general government net lending³</i>	-14.5	-1.5	7.9	0.1	-2.3
Percentage of GDP	-0.3	0.0	0.2	0.0	0.0

Note: The table shows the budgetary effects on general government net lending in relation to previous years of reforms decided and announced earlier and proposed in BP17, and the funding of these. The amounts are rounded and so do not always sum to the rounded totals shown.

¹ For expenditure reforms, a minus sign means reduced appropriations or temporary programmes coming to an end or decreasing in scope. ² For income reforms, a minus sign means that tax revenues are reduced. ³ For the overall budgetary effect of expenditure and income reforms, a minus sign means that the public finances are weakened compared to the year before.

Source: BP17, vol. 1, p. 533.

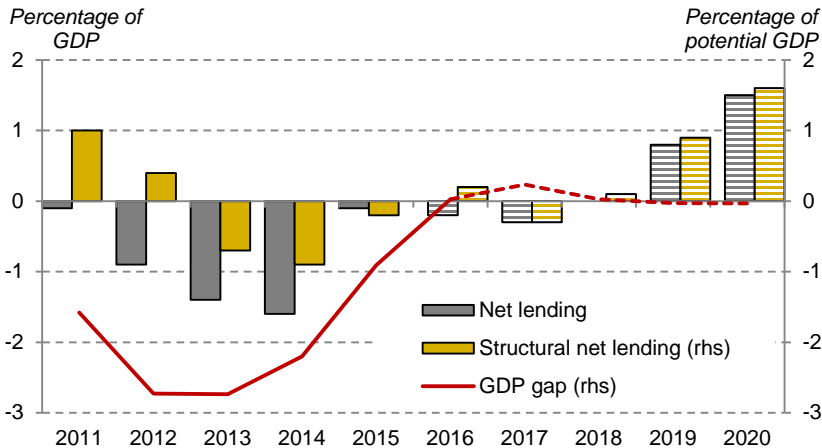
The row ‘Net effects of income changes on general government net lending’ in Table 4.5 appears in Figure 4.3 labelled ‘Active fiscal policy’.

4.3.3 Role of fiscal policy in stabilisation policy

Analyses of how active fiscal policy changes year on year provide an impression of whether the Government is attempting to change the way in which fiscal policy affects demand in the economy. Like the OECD and other international analysts, the Ministry of Finance uses the annual *change* in structural net lending as an indicator of how well the Government’s active fiscal policy measures are working in terms of stabilisation policy.³² This is a crude measure of the stabilisation policy orientation of fiscal policy (the ‘fiscal stance’), and includes not only the active fiscal policy in the Government budget but also several other factors.³³ It should be noted in this context that the design of the fiscal policy actions also influences the effect on demand, but this is not captured by this measure.

Figure 4.2 show how fiscal and structural net lending are changing according to the Government’s calculations in BP17.

Figure 4.2 Fiscal and structural net lending 2011-2020



Source: BP17.

³² See Torvik (2016).

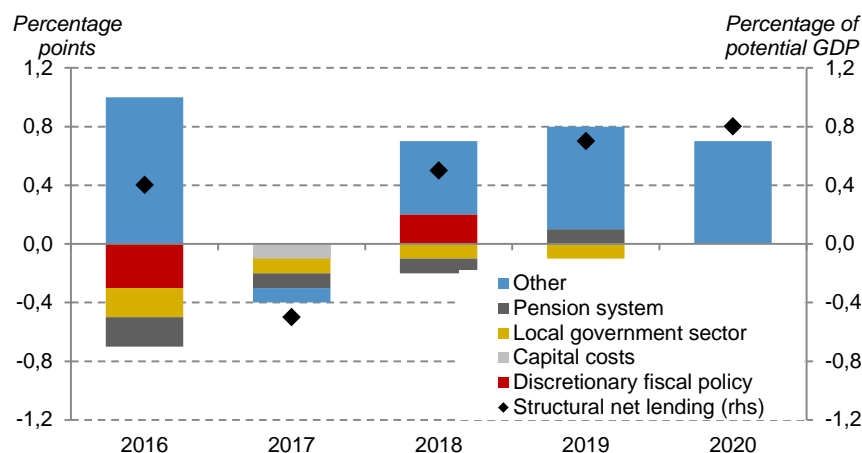
³³ As can be seen from Figure 4.3 below.

Between 2011 and 2014, structural net lending weakened, before improving from 2014 to 2016. In BP17, the Government judges that the output gap has been closed in 2016. At the same time, the level of structural net lending is 0.2 per cent of GDP, i.e. well below what is needed to attain the surplus target. This suggests that fiscal policy is stimulating the economy more in 2016 than is consistent with the surplus target in the current economic situation. Structural net lending should have improved much more since 2014 than has been the case.

If the change in structural net lending between the years is close to zero, this indicates that the differences in fiscal policy between these years (apart from the effect of the automatic stabilisers) has a neutral impact on resource utilisation in the economy. If structural net lending is in fact increasing, this indicates that the difference in fiscal policy compared to previous years is having a restrictive effect on resource utilisation in the current year (and vice versa).

In Figure 4.3 below, the black diamonds show year-to-year changes in structural net lending. For example, structural net lending is down by 0.5 per cent of potential GDP this year, while it is set to improve by 0.5 per cent of potential GDP in 2018 compared to 2017. The bars show the different components of the change compared to previous years.

Figure 4.3 Change in structural net lending and its sub-components



Note: In BP17, the Ministry of Finance has rounded the amounts for the various sub-components, so the sum of these items does not always match the change in structural net lending (the diamonds).

Source: BP17, vol. 1, p. 537, and conversations with officials at the Ministry of Finance.

Figure 4.3 shows that structural net lending worsens between 2016 and 2017, which indicates that fiscal policy becomes *even more expansive* between these years. Between 2016 and 2017, changes in capital costs, the local government sector and the pension system, and the ‘Miscellaneous’ item all contribute to a fall in structural net lending. We note that the effect of the active fiscal policy between 2016 and 2017 is zero. This means that the overall effect of the proposals put forward by the Government in BP17, together with the policy decisions taken earlier which affect the change in structural net lending between 2016 and 2017, is zero. The fall in structural net lending in 2017 compared to 2016 is due to factors which are mainly outside the State budget and so not primarily a result of the policy proposed and announced in BP17.

The ‘Miscellaneous’ item helps to weaken structural net lending in 2017 by 0.1 per cent of GDP compared to 2016. This is surprisingly little, given that the ‘Miscellaneous’ item includes the ‘automatic consolidation’ of structural net lending. This arises because most government income is more closely linked to growth than government expenditure, and many expenditure items are not indexed. This automatic consolidation normally amounts to around 0.5 per cent of GDP. All of the improvement in structural net lending between 2015 and 2016 is down to this mechanism. From conversations with officials at the Ministry of Finance, we learn that the reason for the wide variation in the ‘Miscellaneous’ item in 2016 and 2017 lies in temporary factors, such as expenditure to handle asylum immigration. We are pleased to see that VP17 includes a table itemising what falls under this heading.

The ‘Miscellaneous’ item returns to the expected level in 2018, which explains why structural net lending is brought back to a level around 1 per cent of GDP at the end of the calculation period.³⁴ The Government’s active measures, on the other hand, do hardly anything to bring structural net lending back to the target level.

³⁴ This is a consequence of the Government’s forecasting methods, whereby the assumption of unchanged rules during the calculation period together with the automatic budget consolidation result in a big saving; see Chapter 3.

4.3.4 Fiscal policy should be tighter

Since the financial crisis in 2008–2009, fiscal policy has stimulated demand in the economy: the automatic stabilisers have had free rein and the active fiscal policy has substantially reinforced this support. Given the low resource utilisation in the wake of the financial crisis, this policy was justified until 2013. As the economic situation has normalised, support from the automatic stabilisers has fallen off, improving net lending. Structural net lending also improved in 2015 and 2016, despite the huge influx of asylum-seekers. However, we believe that net lending since 2014 has been strengthened far too little given the way in which the economy has developed and the extent to which net lending worsened in the period 2009–2014.

The Council pointed out back in the spring of 2014 that the active fiscal policy needed to turn towards greater austerity.³⁵ In our 2015 report, we reminded the Government that, while it may be tempting to refrain from budgetary consolidation measures during a recovery phase, for an active stabilisation policy to be compatible with sustainable public finances, the deficit must be recovered when the economy rebounds. In our 2016 report, we wrote that the fiscal policy should be considerably more restrictive in the years 2016–2018 than the policy that the Government presented in VP16.

In BP17, the Government judged that the output gap would be closed from 2016 onwards, while structural net lending in 2017 and 2018 was well below the level needed to meet the surplus target. However, the measures that the Government presented in BP17 did not bring about an improvement in structural net lending. In VP17, the Government suggests that the output gap has been closed in 2016 and should then be slightly positive, i.e. the economy will be in a modest boom in the coming years. The Government now estimates structural net lending, rather surprisingly, at 1 per cent of GDP in 2016. But instead of maintaining net lending and actively strengthening it during the upturn which the Government sees ahead, it opts in VÄB17 to *weaken* structural net lending. The fact that structural net lending improves from 2018 in the Government's calculations is essentially due to the automatic budget consolidation which follows from the assumption of unchanged rules in the

³⁵ In our 2014 report, we wrote: "In the coming years, fiscal policy must be very tight to be consistent with the surplus target"; p. 69.

Government's calculations. We think that this is too fragile a base on which to build a fiscal policy. We know from experience that net lending normally develops more slowly than the Government assumes in its Bills (see Chapter 3). We believe that, in the current economic situation, the active fiscal policy should be much tighter.

As mentioned above, we wrote in our 2016 report that stabilisation policy considerations suggested that fiscal policy should be considerably more restrictive in the years 2016–2018 than the policy that the Government was proposing. The Government replied that it considered:

*... that a significant tightening of fiscal policy would place additional pressure on monetary policy, which is already very expansive. Such an approach to economic policy could increase the risks associated with household debt.*³⁶

We believe that a more restrictive active fiscal policy does not have to conflict with macro-fiscal stability. A properly designed structural policy can slow the growth in both house prices and household debt while also helping to stabilise economic development. A high property tax, more closely reflecting the value of a property, could contribute to this. Alternatively, phasing out the interest deduction could have broadly the same result.³⁷ In the present situation where households have good incomes and plenty of savings, and interest rates are low, these measures could be phased in without jeopardising continued economic growth.

4.4 Assessments and recommendations

Given the prevailing economic situation and the fiscal policy framework, it is remarkable that the Government has chosen to weaken the public finances this year by a total of SEK 22 billion. In the present economic situation, the active fiscal policy should be restrictive and remain so for a few more years, both to enable fiscal policy to help to stabilise resource utilisation and in order to meet the surplus target. The Swedish Government's active fiscal policy is not well-considered. The Government's actions create uncertainty as to how it views the budgetary policy space in the coming years. The

³⁶ BP17, p. 586.

³⁷ See Chapter 7 of Fiscal Policy Council (2016) for an analysis of these proposals.

Government should explain clearly how it has determined that it makes sense in the current situation to weaken the public finances at all, and how this can be reconciled with the fiscal policy framework.

We believe that a more restrictive active fiscal policy does not have to conflict with macro-fiscal stability. A properly designed structural policy can slow the growth in both house prices and household debt while also helping to stabilise economic development. A high property tax, more closely reflecting the value of a property, could contribute to this. Alternatively, phasing out the interest deduction could have broadly the same result. In the present situation where households have good incomes and plenty of savings, and interest rates are low, these measures could be phased in without jeopardising continued economic growth.

The expenditure ceilings for 2019 and 2020 have the ceilings rising much faster than the forecasts for capped expenditure, causing the budget margin to grow significantly up to 2020. For 2019, the Government estimates the budget margin at SEK 112 billion, and for 2020 at SEK 162 billion. The space under the expenditure ceiling is thus greater than ever before. If the space under the expenditure ceiling is used, the Government needs to fund its reforms entirely from higher tax revenues if it is also to meet the surplus target. The level of the expenditure ceiling offers no support for the surplus target and leaves unanswered the question of what the Government considers to be a reasonable tax take. The Government therefore needs to state what it considers to be an appropriate trend in expenditure and a reasonable tax take over the next four years.

5 Evaluation of the surplus target

In this chapter, we briefly examine some of the central proposals in the Surplus Target Committee's report. We then discuss whether the fiscal policy is consistent with the surplus target, particularly in view of the high level of asylum immigration in 2015. Finally, we analyse the development of net lending in the local government sector and the old-age pension system, and the way in which net lending in these sectors may affect fiscal policy in the coming years.

5.1 The surplus target: in a grey area until 2019 and beyond

The purpose of the surplus target is to ensure that the overall goals of fiscal policy can be achieved with long-term sustainable public finances. Since 2010, the Government has been required to present to the Riksdag a proposed target for general government net lending.¹ The first time such a target was defined was in the 1997 Spring Fiscal Policy Bill. According to the present surplus target – which has been in place since 2000 – general government net lending should average 1 per cent of GDP over a business cycle.

5.1.1 The Surplus Target Committee's proposal

The Surplus Target Committee proposes that the target for general government net lending from 2019 onwards should be reduced from 1 to 1/3 per cent of GDP, averaged over a business cycle. No changes to the definition of the target are proposed, but the target should continue to cover the whole of the public sector. The Government states in BP17 that the target of 1 per cent average net lending over a business cycle applies until the Riksdag has decided on a new surplus target.² The Committee also suggests that a 'debt

¹ Budget Act, Chapter 2, Section 1. The last time the Riksdag decided that the surplus target should average 1 per cent of GDP over a business cycle was in the spring of 2007. This decision continues to apply until the Riksdag passes a new one. To begin with, the target was an average of 2 per cent of GDP over a business cycle, but this also included net lending in the premium pension system equivalent to around 1 per cent of GDP. After Eurostat decided that this sort of net lending should count as household savings in the national accounts from 2007 onwards, the target was adjusted to an average 1 per cent of GDP over a business cycle.

² BP17, p. 174.

anchor' should be introduced into the fiscal policy framework. The debt anchor is meant to act as a *guideline*, not a practical target, for fiscal policy. The level of the debt anchor is set so that Maastricht debt amounts to 35 per cent of GDP (see Chapter 6).

Monitoring of the surplus target is mainly retrospective in the sense that it is mostly a matter of checking whether the target will be met with the proposed fiscal policy, given the economic forecasts and taking account of the future impact of decisions already taken. This monitoring should then give an indication of the need for budgetary consolidation measures, or of the scope for reforms, during the budget year.³ This forward-looking evaluation mainly used structural net lending, i.e. net lending adjusted for macroeconomic effects, as an indicator of whether the surplus target would be attained on average over the business cycle. There used to be no precise criterion to identify a deviation from the target. The Committee now suggests that there is a deviation from the surplus target if structural net lending differs significantly from the target level this year or next.⁴ The Committee notes that there is some uncertainty in the estimate of structural net lending and refers to a discussion in a background paper in which it is suggested that *a deviation from the target should be deemed to exist where structural net lending differs from the target level by more than 0.5 per cent of GDP*.⁵

A retrospective evaluation of the fiscal policy also needs to be carried out to determine whether there have been any systematic deviations from the target. The retrospective evaluation has so far used the 'ten-year indicator', which shows average actual net lending for the last ten years. In interpreting the ten-year average, we also need to take account of the average economic situation during the period.⁶ The Committee suggests instead that an eight-year average of actual net lending should be used to the retrospective evaluation. The aim is to align this with the cycle of regular reviews of the surplus target.⁷

³ SOU 2016:67, p. 254.

⁴ Ibid., p. 262.

⁵ Mattson and Håkansson (2016).

⁶ Ministry of Finance (2011a), p. 21.

⁷ SOU 2016:67, p. 266. The Committee suggests that the surplus target should be reviewed in every other term of office, i.e. every eight years; see SOU 2016:67, p. 272.

The Government intends to return with proposals to Parliament in the Budget Bill for 2018, both to change the level of the surplus target and to introduce a debt anchor and set a level for this.⁸

5.1.2 The Council's view on how the surplus target should be evaluated

In our evaluation of fiscal policy, we follow the Surplus Target Committee's suggestions and apply the Committee's criterion for determining when there is a deviation, and we use the eight-year average to assess whether actual net lending has been consistent with the surplus target. The analysis is based on an eight-year average, but to allow for the fact that this does not always coincide with a whole business cycle, the analysis is supplemented with an assessment of where in the cycle the Swedish economy now is. We then make use of the NIER's assessment of economic development in terms of the output gap. We also analyse how structural net lending has changed over time and examine the level of actual net lending since the surplus target was introduced in 2000.⁹

A clear deviation from the surplus target, i.e. where structural net lending in a given year differs from the target level by more than 0.5 per cent of GDP, will not pose any serious problem for the long-term sustainability of the public finances provided that the Government pursues a policy which ensures that such deviations are only temporary. Like the Surplus Target Committee, we therefore feel that the existence of a deviation from the target does not necessarily mean that the policy is misconceived or that there is a deviation from the fiscal policy framework. On the other hand, where there is a deviation, the Government should explain what is behind it and how it intends to return to the target.¹⁰ This plan should be time-bound and the reversal should normally be initiated during the budget year, i.e. through the Budget Bill for the next year. If the plan indicates that the deviation cannot be reversed in the next budget year, the Government's plan should contain a clear policy commitment for structural net lending for the budget year and the

⁸ VP17, p. 80–88.

⁹ We note that the Government writes in VP17 that “the Council should be expressly tasked with assessing each year whether there has been a deviation from the surplus target. The Council should also assess whether any such deviation is justified and how quickly it should be corrected”; p. 86.

¹⁰ SOU 2016:67, p. 263.

years to follow. This commitment should normally be formulated so that the target level for net lending is reached when the economy is in equilibrium. If structural net lending falls below the target level in a downturn, e.g. because of an active fiscal policy, structural net lending should be above the target level when the economy rises above a balanced level of resource utilisation. In a normal economic situation, a deviation from the target should decrease at the same rate as when there have been no active policy decisions. At a high level of resource utilisation, the difference should decrease at a faster rate, while it may decrease more slowly with low resource utilisation. The Government also believes that a deviation should be handled in this way.¹¹

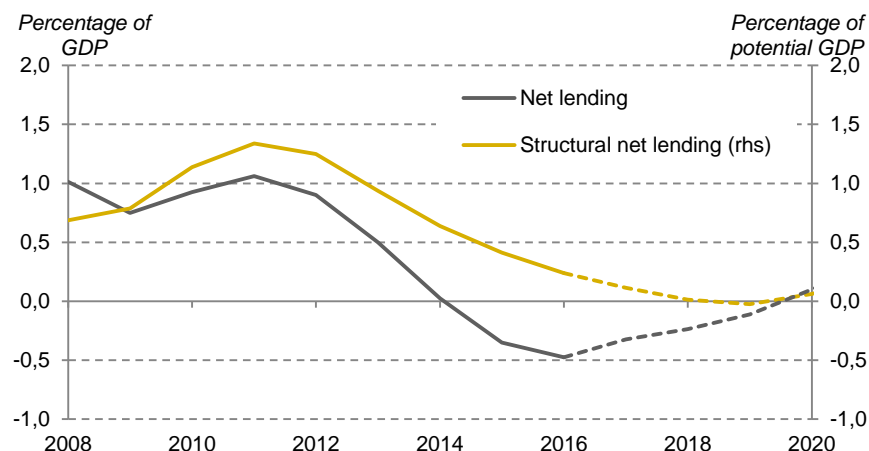
Finally, we would emphasise that the surplus target cannot be deemed to be met if actual or structural net lending reach the target level in a single year. The target is set over a business cycle, so it must be evaluated over the same period. In the forward-looking analysis, we therefore take the Government's medium-term estimates and calculate an eight-year retrospective average of net lending for the coming years. If this retrospective average is close to the target level, this indicates that the fiscal policy is consistent with the surplus target. On the other hand, if this average differs significantly from the target level, this is a signal that the fiscal policy is not compatible with the surplus target.

5.1.3 The retrospective view

Over the last eight years (2009-2016), net lending within the public sector has averaged -0.5 per cent of GDP (Figure 5.1).

¹¹ VP17, p. 84–85.

Figure 5.1 Fiscal and structural net lending, retrospective eight-year moving average

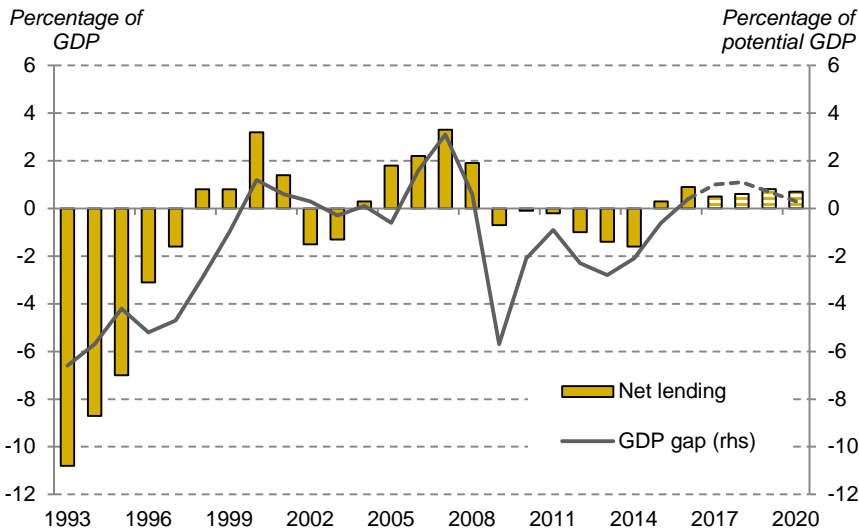


Note: Both series have been derived by taking a retrospective eight-year average of fiscal and structural net lending for each year. For example: the value for 2008 is an average of net lending from 2001–2008, the value 2009 is an average from 2002–2009, the value for 2010 is an average from 2003–2010, and so on. We start the series in 2008, i.e. eight years after the surplus target was introduced.

Source: NIER (2017b).

In 2015, the business cycle that started with the boom in 2006–2008, followed by a deep recession, can be said to have finished (Figure 5.2). Average net lending for the period 2006–2015 therefore serves as an indicator for a retrospective evaluation of the surplus target. Average net lending in this period amounted to 0.3 per cent of GDP. The target of 1 per cent average net lending over a business cycle has therefore not been attained. However, it is clear from Figure 5.2 that the business cycle from 2006–2015 was characterised by a downturn which was much deeper and more lasting than the initial boom. For seven of the ten years of the cycle the economy was in a downturn. Even allowing for the fact that this period was marked by an unusually deep and prolonged downturn, the surplus target was not attained; structural net lending averaged 0.7 per cent of GDP in the period 2006–2015.

Figure 5.2 Net lending and economic development



Note: Economic development is measured by the output gap.
Source: NIER (2017b).

Nor has the target been attained in a longer-term perspective. Since the target was introduced in 2000, average net lending has been 0.4 per cent of GDP and structural net lending 0.5 per cent of GDP.

5.1.4 Net lending and the Government's policy

The Government claims in BP17 that the weak net lending figure is due to the previous government's economic policy and the high level of asylum immigration.¹² The Government's aim is to pursue a fiscal policy such that the surplus target is achieved by 2020.¹³ The target that the Government is referring to turns out not to be the present target level of net lending averaging 1 per cent over a business cycle, but the new target level of 1/3 per cent of GDP. However, the Government has not explicitly stated this.

¹² BP17, p. 174–175.

¹³ Ibid., p. 175.

Table 5.1 Net lending and the output gap in BP17 and VP17

<i>Percentage of GDP</i>	2015	2016	2017	2018	2019	2020
<i>Net lending, BP17</i>	-0.1	-0.2	-0.3	0.0	0.8	1.5
Output gap in BP17 ¹	-0.9	0.0	0.2	0.0	0.0	0.0
8-year average net lending (retrospective) ²	-0.4	-0.6	-0.6	-0.6	-0.5	-0.2
<i>Net lending, VP17</i>	0.3	0.9	0.3	0.6	1.4	2.1
Output gap in VP17 ¹	-1.0	-0.1	0.5	0.4	0.1	0.0
8-year average net lending (retrospective) ²	-0.3	-0.5	-0.3	-0.3	-0.1	0.3

¹ As a percentage of potential GDP.

² The 8-year average is calculated as follows: the figure for 2015 represents average net ending for the period 2008–2015; for 2016, the period 2009–2016 is used; for 2017, the period 2010–2017, and so on. Source: BP17 and VP17.

In BP17 and in VP17, the Government argues that it has pursued a tight fiscal policy since it came to power in the autumn of 2014. At the same time, the Government stresses that it is reasonable to expect exceptional events, such as the very large number of asylum-seekers, to be handled without the need for short-term budget increases. With regard to the fiscal policy framework, the Government considers that an overall assessment taking in stabilisation, distribution and structural policy considerations should determine the rate at which it is appropriate to increase net lending.¹⁴

As can be seen from Table 5.1, VP17 has net lending at the same level in 2017 as in 2015, even though the output gap has been quickly closed and is expected to be positive in both 2017 and 2018. This last point is reason enough in itself for fiscal policy to be much tighter than the Government has proposed in its Bills.¹⁵

In the current situation, however, the Government believes that greater emphasis should be placed on developments in the slightly longer term, but what that means in practical terms is not clear.¹⁶ In support of its view, the Government cites the relatively low level of general government debt and the positive general government net financial worth. The Government feels it is unreasonable to expect the return to the surplus target to be *immediate*.¹⁷ On this latter point, we agree with the Government. Tightening fiscal policy to bring the

¹⁴ BP17, p. 30.

¹⁵ See section 4.3.4.

¹⁶ BP17, p. 31.

¹⁷ Ibid., p. 175–176.

eight-year average for net lending up to 1 per cent of GDP in 2017 would require austerity measures equivalent to around 13 per cent of GDP (approx. SEK 585 billion). This would be profoundly destabilising and is unlikely to strike anyone as a feasible option. Nor has the Council ever suggested anything like this. But that does not mean that the policy could not be tighter than it actually is and has been without harming economic development. We have therefore argued in earlier reports for a tighter fiscal policy.¹⁸ However, the Government has chosen not to follow our recommendation. It is now clear that the current surplus target will not be met in the current government's term in office, which is partly the consequence of its excessively expansive fiscal policy.

As the surplus target is defined as an average over a business cycle, it is essential to decide on the period over which the target is to be evaluated. We saw above that the surplus target was not attained during the business cycle which started around 2006 and ended in 2015. If we look forward and rely on what the Government writes in VP17, the retrospective eight-year average for 2020 will be 0.3 per cent of GDP (Table 5.1).¹⁹ But as we showed in Chapter 3, there is reason to believe that net lending will be significantly lower than the Government assumes. Whether the Government achieves a net lending figure in 2020 of 1/3 per cent of GDP averaged over the business cycle will depend on economic developments and the design of fiscal policy in the coming years. If the Government makes use of the very large budget margins for the years 2018–2020, it will need increased tax revenues to match the higher expenditure if it is to meet the new surplus target.²⁰

The Government should make it clear how it sees the transition from the current surplus target to the target level of 1/3 per cent of GDP which is to apply from 2019 onwards under the parliamentary agreement.

¹⁸ See section 4.3.4.

¹⁹ In six of these eight years, the surplus target averages 1 per cent of GDP over a business cycle.

²⁰ See section 4.2.

5.1.5 Structural net lending and the uncertainty surrounding long-term asylum immigration

Structural net lending is a measure of what net lending in the public sector would be in a normal economic situation, i.e. a situation in which neither tax revenues nor government expenditure deviate from the norm for cyclical reasons.²¹

In structural terms, the Government expects the public finances to weaken in the coming year, from 1 per cent of potential GDP in 2016 to 0.3 per cent in 2017 (Table 5.2). After that, the Government expects a gradual improvement in net lending. For 2020, the calculation in VP17 shows a structural surplus of 2.2 per cent of potential GDP.

Structural net lending normally increases under an unchanged policy and with fully financed reforms. This increase usually runs to around 0.5 per cent of GDP per year. The increase is connected to the fact that tax revenues generally increase along with nominal GDP, while expenditure, under the rules that govern government expenditure, increases more slowly.²²

Table 5.2 Structural net lending in BP17 and VP17

<i>Percentage of potential GDP</i>	2015	2016	2017	2018	2019	2020
Structural net lending in BP17	-0.2	0.2	-0.3	0.1	0.9	1.6
Migration-adjusted structural net lending in BP17	-0.2	0.5	0.1	0.2	0.9	1.6
Structural net lending in VP17	0.2	1.0	0.3	0.6	1.4	2.2
Migration-adjusted structural net lending in VP17	0.2	1.4	0.7	0.7	1.4	2.2

Source: BP17 and VP17.

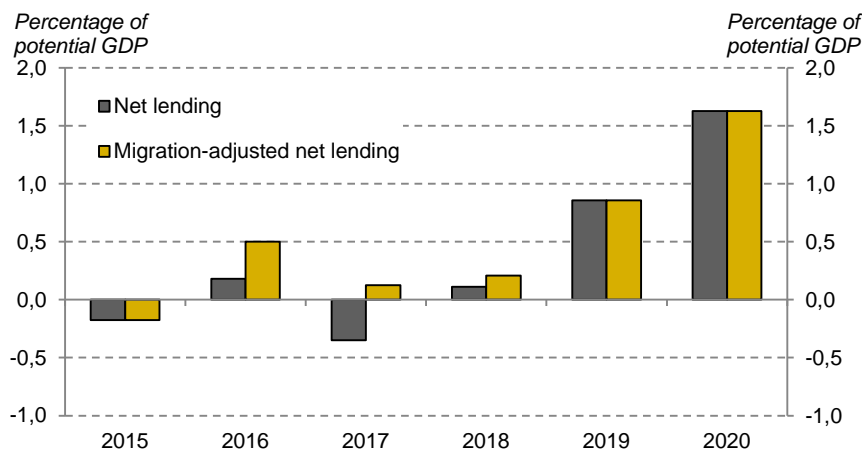
The high level of asylum immigration in 2015 changed the assumptions underlying fiscal policy. In all, 162,915 people applied for asylum in Sweden in 2015. In 2016 the number of asylum-seekers fell to 28,939, which is the lowest level since 2009. However, it is very uncertain whether this should be regarded as a stable long-term level, or whether the number will pick up again when the temporary legislation ceases to apply.²³ This uncertainty has a bearing on the definition of economic policy.

²¹ See section 3.3.

²² See sections 4.3.1–4.3.3.

²³ See section 1.3.

Figure 5.3 The Government's calculation of structural net lending and migration-adjusted structural net lending



Source: BP17 and Ministry of Finance.

The Government states that the large number of asylum-seekers affects fiscal policy. At the same time, the Government believes that the charge on the public finances can be handled without any need for short-term budget increases because the expenditure increases to take in asylum-seekers in 2015 are temporary. To illustrate the scale of this temporary charge, the Government also calculates a migration-adjusted structural net lending figure.²⁴ In Table 5.2 and Figure 5.3, we can see that the Government's migration-adjusted structural net lending is greater than actual structural net lending in 2016–2017, but that the difference then quickly disappears. We believe, however, that the Government under-estimates the true costs; the impact on the public finances of asylum immigration in 2015 has not completely tailed off even in 2019.²⁵

As a rule, temporary changes in expenditure should not automatically trigger budgetary consolidation measures. A major benefit of low government debt and a surplus target is that they allow room for manoeuvre to avoid short-termism in fiscal policy.

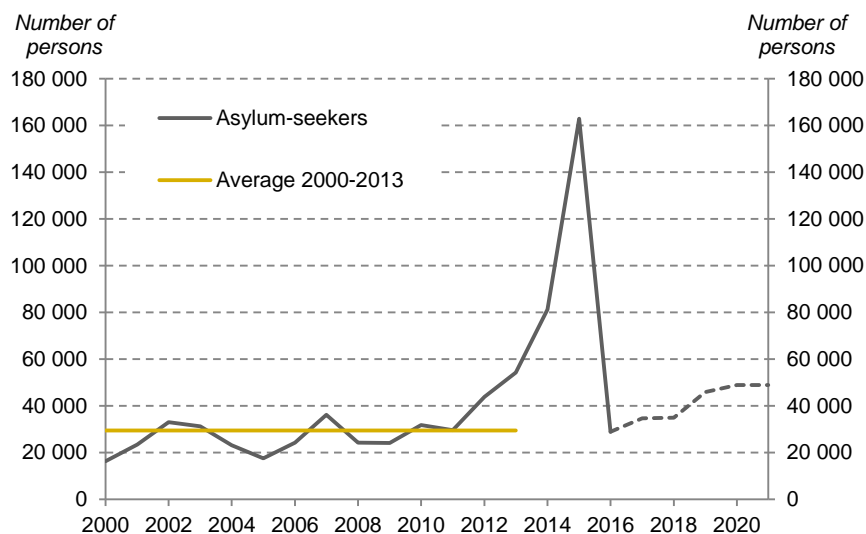
²⁴ The Government highlights the uncertainty in this estimate by describing it as an 'example calculation'; see p. 30, BP17. The Government's adjustment is applied across the board by subtracting all costs that exceed the historical average for asylum processing multiplied by 2 when calculating structural net lending. The idea of this is to adjust net lending for what may be considered 'exceptional' and allowing normal variations to be reflected in migration-adjusted net lending also. The Government's adjustment is thus not based on any estimate of the long-term number of asylum-seekers. Source: Ministry of Finance officials.

²⁵ Aldén and Hammarstedt (2016).

However, it is important to apply a principle of prudence when determining which expenditure increases are temporary and which are permanent. If the assessment of what is temporary is over-generous, this will cause a permanent financing need to be pushed back into the future.

Figure 5.4 shows the Migration Agency's latest forecast of the number of asylum-seekers in Sweden. The Migration Agency expects the number of new asylum-seekers to increase progressively from the current level of around 30,000 to almost 50,000 in 2021. If this forecast turns out to be accurate, it will affect the public finances for long time to come.²⁶

Figure 5.4 Number of new asylum-seekers



Note: The figure shows the number of asylum-seekers since 2000. The yellow line shows the average between 2000 and 2013 of approx. 30,000 applicants per year. The dotted section to the right of the chart shows the Migration Agency's forecast of the number of asylum-seekers. The Migration Agency is not making any forecast for the time after 2021.

Source: Migration Agency (2017b).

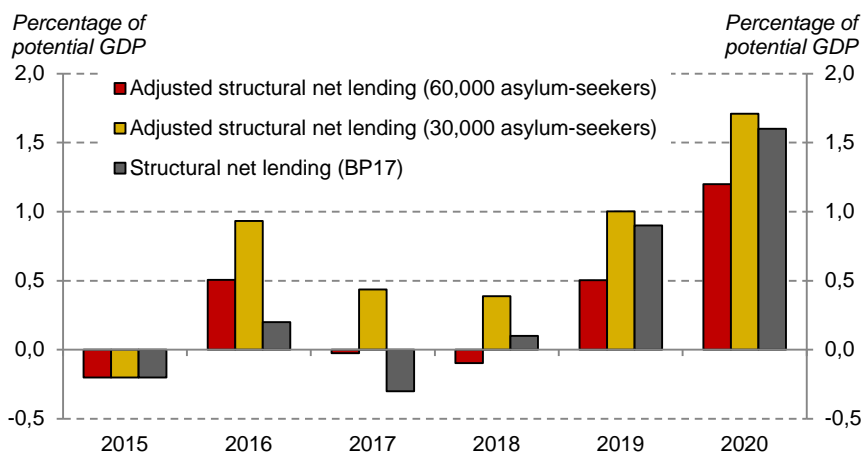
In our 2016 report, we discuss in detail the public finance implications of the high level of asylum immigration in 2015. In order to assess the plausibility of the Government's estimates, we did

²⁶ In its evaluations of the Migration Agency's work, the National Audit Office has highlighted the difficulties the Agency has in predicting the number of asylum-seekers. For the period studied by the National Audit Office, the Migration Agency's forecasts have under-estimated the number of asylum-seekers; see RiR (2016a) and RiR (2017).

our own calculations of the expenditure increases in the area of migration and integration.²⁷ Our calculations, like the Government's, are unreliable and heavily dependent on the assumptions made. A key assumption behind our calculations concerns the long-term number of asylum-seekers. The fewer asylum-seekers are assumed to arrive in the long term, the greater the proportion of the costs that may be regarded as temporary.

In Figure 5.5 we present two fresh calculations of migration-adjusted net lending, using the same methodology as in the 2016 report.

Figure 5.5 Migration-adjusted structural net lending



Source: BP17 and own calculations.

In one calculation, we assume that the permanent level of asylum immigration stabilises at 60,000 asylum-seekers per year. In the second scenario, we assume that the permanent level is 30,000 asylum-seekers per year, i.e. equal to the historical average for the period 2000–2013. As can be seen from Figure 5.5, the long-term volume of asylum-seekers has a crucial bearing on the proportion of the costs that can be regarded as temporary. If the long-term level is 30,000 asylum-seekers per year, the adjusted structural net lending is 0.4 per cent of GDP in 2017, as against actual net lending of -0.3 per cent of GDP. On the other hand, if the long-term level is 60,000 per year, the adjusted net lending is slightly negative. At a level of 30,000

²⁷ See appendix to Fiscal Policy Council (2016).

per year, around SEK 30 billion of the structural budget surplus can be treated as temporary. If the long-term level is 60,000 asylum-seekers, the temporary charge amounts to around SEK 15 billion. Given that there is great uncertainty as to what should be regarded as a new long-term volume of asylum-seekers, we believe it is too early to determine how much of the cost of taking in asylum-seekers can be regarded as temporary. We therefore feel that, for the sake of prudence, the Government should make provision in the budget for the fact that the long-term volume of asylum-seekers could be much higher than the average for the period 2000–2013.

5.1.6 There is a deviation from the target

The Surplus Target Committee suggests that structural net lending should be used as an indicator in the forward-looking analysis of fiscal policy. If the Committee's criterion is applied, there is a deviation. According to BP17, structural net lending in 2016 and 2017 is more than 0.5 percentage points lower than the surplus target of 1 per cent net lending approved by the Riksdag.

The Government also notes in BP17 that net lending clearly diverges from the target level.²⁸ However, the Government does not describe any plan – as required by the Budget Act – to bring about a return to the surplus target.²⁹ In BP17, the Government writes only in very general terms that it intends to “continue to pursue a responsible economic policy” and that this policy will ensure that “the surplus target is met by 2020”.³⁰ We do not find this adequate; a plan has to be more specific than this.³¹

In VP17, however, the Government claims that “the clear deviation from the surplus target that existed before is no longer there. From 2016 onwards, both fiscal and structural net lending are expected to fall within a reasonable margin relative to the surplus target”.³² We do not share the Government's view, but think that there is still a deviation. In Table 5.3 below, we can see that structural

²⁸ BP17, p. 173–175. The Government also noted in BP15 and in BP16 that there was a deviation in autumn 2014 and autumn 2015.

²⁹ Budget Act, Chapter 2, Section 1a. According to the preparatory work to the Budget Act, the plan should have a medium-term horizon and state how the risk of a deviation is to be addressed; SOU 2013:73, p. 114.

³⁰ BP17, p. 30–31 and p. 175.

³¹ In Fiscal Policy Council (2014), we discuss this question in detail; see p. 143–147.

³² VP17, p. 71.

net lending in 2017 differs by more than 0.5 percentage points from the target level of 1 per cent.

Table 5.3 Structural net lending according to BP17, VP17 and the NIER

<i>Percentage of potential GDP</i>	2015	2016	2017	2018	2019	2020
Structural net lending in BP17	-0.2	0.2	-0.3	0.1	0.9	1.6
Structural net lending in VP17	0.2	1.0	0.3	0.6	1.4	2.2
Structural net lending according to the NIER (Mar-17)	-0.1	0.6	0.4	0.4	0.5	0.5

Source: BP17, VP17 and NIER (2017b).

If the Government had opted to tighten fiscal policy in VÄB17 it would have been possible to prevent any deviation. Instead, the Government has chosen to weaken structural net lending.³³ In the present economic situation, with the economy above a balanced level of resource utilisation, structural net lending should be above the target level if we are to attain the surplus target.

The Surplus Target Committee stresses that, when a deviation is identified, it is not enough for a plan to set out a forecast of net lending under an unchanged policy. The Committee suggests that the plan should normally be launched in the very next year, i.e. expressed in the form of proposals in the Budget Bill. This plan should normally be time-bound and formulated so that the target level for net lending is reached when the economy is in equilibrium. As a rule of thumb, in a normal economic situation, the deviation should decrease at the same rate as usual in the absence of active policy decisions. If the Government believes that it cannot correct the deviation in the next year, the plan should contain a clear political commitment for structural net lending in the coming years.³⁴ However, the Government does not present any such plan in BP17 or VP17. We believe that the Government should have done this.³⁵

³³ VP17, Table 7.6, p. 135.

³⁴ SOU 2016:67, Chapter 9.

³⁵ We note that the Government suggests in VP17 that a plan for handling a deviation should be formulated in the manner advocated by the Surplus Target Committee and ourselves; see VP17, p. 84–85.

5.1.7 Net lending in the local government sector: trends and possible problems

The local government sector, i.e. municipal and county authorities, has reported positive economic results every year since 2004, and its finances have been stronger than in the 1990s and the start of the 2000s. For the next few years too, the local government sector shows positive results, but the Government judges that the growth will not be as strong as over the last decade.

Most local government income consists of tax revenues. Employment is therefore important to the local government economy. Now that the economy has reached full resource utilisation, we can expect a smaller rise in employment and hence also a slower rate of increase in the authorities' tax receipts. The calculations in BP17 and VP17 cover the years to 2020 and are constructed so that the average tax rate is assumed to be unchanged. Income then changes in line with employment. The policy is assumed to be unchanged, i.e. the central government contribution is nominally unchanged. Some central government payments may still vary as a result of demographic changes and a varying number of people in different transfer systems. It is also assumed that a balanced budget is achieved (see Box 5.1). Local government expenditure will thus be residually determined in the Government's estimate and adjusted mainly to reflect changes in the tax base a few years ahead.

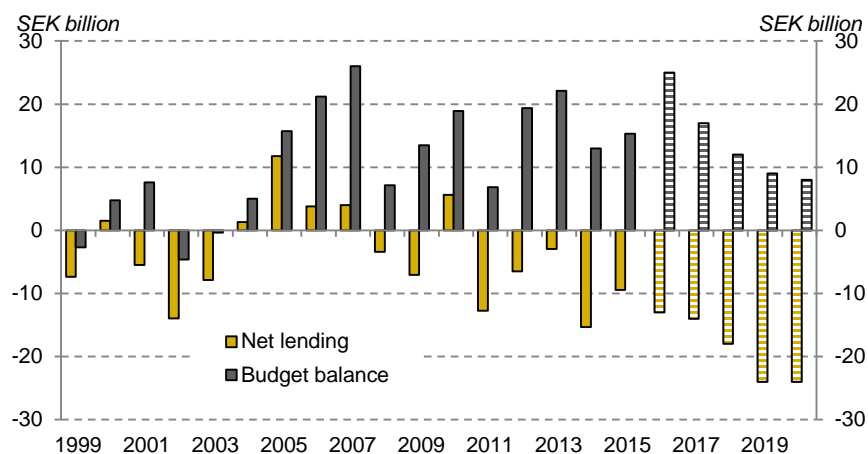
Both results and net lending in the local government sector weaken in the years to 2020 (Figure 5.6). The Government expects the local government sector to generate a result which is slightly worse than would normally be considered to be in line with good economic management.³⁶ This is mainly because total wages, and hence tax revenues, are expected to increase more slowly than before. Some central government contributions are also assumed to decrease towards the end of the period when targeted payments to cover migration and integration costs go down.

The local government sector faces major challenges in the coming years. A rapidly growing population brings a great need for both increased consumption and major investments. The Government highlights several factors that carry risks to local government

³⁶ BP17, p. 556.

finances.³⁷ There is a growing need to establish and expand welfare services at a brisk rate. Difficulties in recruiting may mean that wages are pushed upwards, while bottlenecks in the construction sector create uncertainty about the speed at which planned investment projects can be implemented.

Figure 5.6 Local government net lending and results



Source: SCB (2016a) and VP17.

Local government investments are expected to go on increasing for the next 10–15 years.³⁸ Low interest rates and recent good results are likely to contribute to this. At the same time, the demographic pressure on the municipalities is increasing; not just because the population is growing through immigration, but also from an ageing population and a higher dependency ratio.

A large percentage of the immigrants are young, which means that the demographic dependency ratio is rising from both ends, with a larger proportion of both elderly and young people.

In summary, it is fair to say that local government resources will be stretched in the coming years. In order both to maintain today's level of welfare and also to balance the budgets, injections of funding will be needed either from tax rises or from increased central government contributions, rationalisation and efficiency improvements, or a combination of all of these.

³⁷ Ibid.

³⁸ Conversations with officials of the Swedish Association of Local Authorities and Regions (SKL).

The local authorities practise cost accounting and compliance with good financial management, and the balanced budget requirement is measured by a municipality's results, i.e. the change in its equity with certain adjustments (the balanced budget result). However, the surplus target for the public sector is defined in terms of net lending, which in turn follows the definitions in the European System of Accounts, ESA 2010.

Box 5.1 Good economic management and balanced budgets

Good economic management

According to the Swedish Local Government Act, all municipal and county authorities must practise good financial management in their own operations and in local government activities run by other legal entities. There is no standard definition of good financial management, but authorised representatives of the various municipal and county authorities decide on guidelines which are considered to comply with the requirements of the Act. A guideline which is used in many local authorities is that the results should show a surplus of two per cent of the sum of tax revenues and general government contributions. The authorities are also required to set financial targets which are needed to maintain good financial management.

The balanced budget requirement

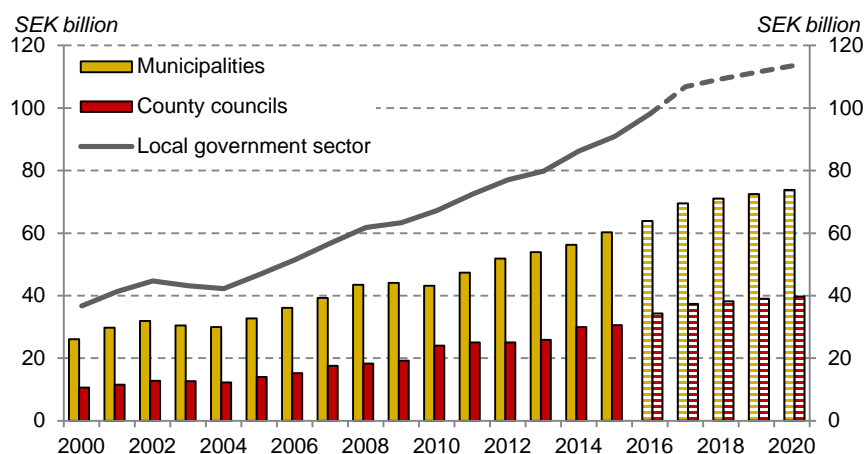
The balanced budget requirement may be regarded as a minimum standard for compliance with the requirement for good financial management. This means that every local authority is responsible for establishing a budget in which income exceeds expenditure, with some exceptions. Before the results can be approved against the balanced budget requirement, they may be adjusted for e.g. capital gains and losses in a 'balanced budget report'. If the authority uses a profit equalisation reserve, or if there are specific reasons for it, there is some allowance for a deficit in the budget. If the results show a deficit, the authority has three years to rectify this and return to a balanced budget. Authorised representatives are then responsible for adopting an action plan to ensure that this happens. There is also an exception provision for specific reasons with regard to a return to a balanced budget.

Source: Local Government Act (1991:900) and Act (1997:614) on local government reporting.

Net lending shows the change in the wealth of the local government sector resulting from financial transactions (changes in the value of assets and liabilities are not included in the calculation). The most important difference between the two methods concerns the handling of investments.

The difference between results and net lending is clear from Figure 5.6. We can see that the differences are considerable, and they are expected to persist for some years. Therefore, even if the local government sector complies with the requirements for balanced budgets and for good financial management, net lending is still expected to be negative. The increase in the accounting differences means that the balanced budget requirement for the local government sector is consistent with much weaker general government net lending in this area than previously suggested.

Figure 5.7 Local government investment volumes



Note: Fixed gross investments at current prices.

Source: SCB, BP17 and Ministry of Finance.

In the income statement, investment costs are made up of impairments. The authorities' assets are valued at cost, and depreciation is based on this. In the net lending figure, on the other hand, the investment expenses are calculated at the date of acquisition, i.e. net lending is charged as and when the investment is made. The expenses for new investments are normally greater than the write-offs of old acquisition costs. This means that, over a number of years, the investment expenses will be systematically

higher in net lending than in the results, even though the investments remain at a constant level. In the next few years, local authorities will also face large investment needs, and their investments are projected to increase from approx. SEK 90 billion in 2015 till approx. SEK 113 billion in 2020 at current prices (Figure 5.7).³⁹ This will increase the difference between the results and net lending. This difference thus arises both because the concept produces a systematic difference at a constant level of investment and because investments in the next few years are expected to be unusually large. Accruals of government contributions also give rise to differences between results and net lending. At the end of 2015, SEK 9.8 billion was paid out to the municipalities under the ‘migration agreement’. There was no similar payment in 2016, but from 2017 the government contribution will increase by SEK 10 billion. Net lending therefore worsens between 2015 and 2016 and improves again in 2017. In the results, on the other hand, most of the SEK 9.8 billion was carried forward to 2016, improving the results for that year. From 1 July 2017, the compensation system for unaccompanied children and young people is changing, reducing government spending from 2018 onwards. For 2017, however, there will be an opposite effect and expenditure will increase temporarily because of altered payment procedures. This means that the government contribution will be temporarily higher in 2017 without this being reflected in the results for the local government sector. In recent years, the finances of the local government sector have also been affected by some temporary items, including an increased pension debt resulting from lower discount rates, which has also affected the difference between results and net lending.⁴⁰

Overall this means that there are large and persistent differences between local government results and net lending. As can be seen from Table 5.4, the difference is between SEK 30 billion and SEK 38 billion per year in the period 2016–2020.

³⁹ BP17, p. 561.

⁴⁰ A lower discount rate will increase pension liabilities.

Table 5.4 Local government results and net lending

	2015	2016	2017	2018	2019	2020
Result (SEK billions)	15	25	17	12	9	8
Net lending (SEK billion)	-10	-13	-14	-18	-24	-24
Net lending (percentage of GDP)	-0.2	-0.3	-0.3	-0.4	-0.5	-0.5

Source: VP17.

The contribution of the local government sector to general government net lending is estimated at just over -0.4 per cent per year to 2020. This in turn means that net lending for the Government or the old-age pension system needs to be higher if it is to be possible to achieve the surplus target level for net lending in the public sector as a whole. Another way of describing this is that a significant part of the increased space that will appear temporarily when the surplus target is reduced from 1 to 1/3 per cent of GDP will be used to cover negative net lending in the local government sector.⁴¹

5.1.8 Net lending in the old-age pension system: tendencies and potential problems

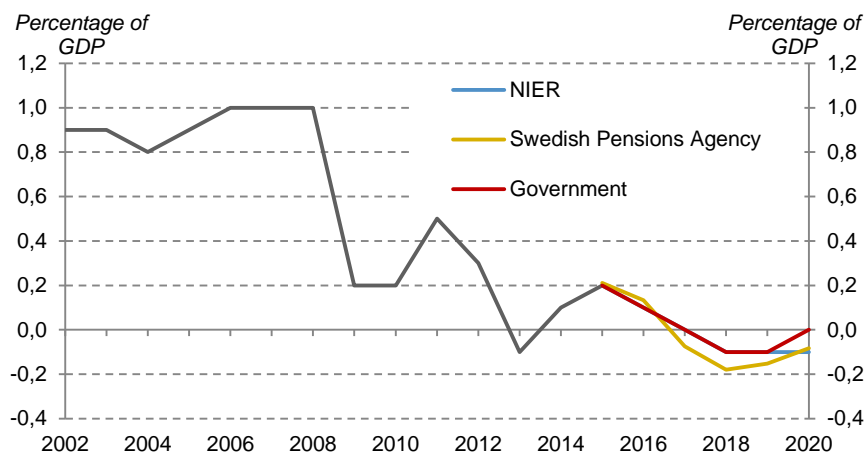
The old-age pension system (referred to below simply as the ‘pension system’) comprises a distribution component, the ‘income pension’, and a fund-based component, the ‘premium pension’. The pension system in the public sector only covers income pensions, with its AP (old-age pension) funds as a buffer. The pension system is structured in a manner which makes it financially sustainable in the long term. If the anticipated future outbound payments are greater than can be financed with future charges and the capital in the AP Funds, the level of pensions will be adjusted automatically – if the Government allows the ‘brake’ to take effect – so the system maintains long-term equilibrium between income and expenditure. However, long-term sustainability does not mean that income and expenditure have to balance every year. Demographic changes will result in sometimes negative and sometimes positive net lending. The AP funds are buffers which help to handle these variations.

⁴¹ When the surplus target is reduced from 1 to 1/3 per cent of GDP, this will create temporary space for higher expenditure, or for lower taxes. This fiscal space will decrease over time because lower net lending leads to relatively higher government debt and hence higher interest costs.

In other words, the fact that the pension system occasionally exhibits negative net lending does not in itself indicate a crisis in the system or give reason to change the fiscal stance. Since 2000, net lending in the pension system has averaged 0.6 per cent of GDP. In the same period, net lending in the whole of the public sector has been 0.4 per cent of GDP. The fact that we have seen positive net lending in the financial sector as a whole is thus explained by savings in the pension system.

However, net lending in the pension system has fallen sharply since the surplus target was introduced, and the Government expects negative net lending in the coming years (Figure 5.8). This is primarily the consequence of changes in the age breakdown of the population and not a sign that the pension system is under-financed.

Figure 5.8 Net lending in the pension system 2002–2020



Sources: SCB, NIER (2017b) and VP17, and the Swedish Pensions Agency's calculations.

5.1.9 Net lending at the State level determines whether the surplus target is achieved

It is mainly the Government that can influence net lending at the State level. Net lending in the local government sector is very largely determined by the decisions taken in municipal and county councils. The Government can influence the local government sector, but as long as the local authorities comply with the balanced budget requirement in the Local Government Act, the Government's ability

to exert any decisive influence on the way in which net lending in the local government sector develops is in practice limited. The pension system is financially independent, but the rules that govern the system can be amended by decision of the Riksdag. As the system is based on an agreement between six of the parties in the Riksdag, any changes to the system will (probably) require consensus among these parties. Changes to the system that could affect net lending therefore cannot be expected to occur very often. The way in which net lending in the pension system will develop over a number of years is therefore something that the Government has to accept as a given when designing its fiscal policy.

Net lending in the local government sector averaged -0.1 per cent of GDP in the period 2000–2016 (Table 5.5). In the same period, the pension system registered average net lending equivalent to 0.6 per cent of GDP. At the State level, net lending averaged -0.1 per cent of GDP. For the next four years, the picture looks radically different. In VP17, the Government expects net lending in the local government sector to average -0.4 per cent and in the pension system, -0.1 per cent of GDP per year, i.e. -0.5 per cent of GDP altogether. The Government's policy is therefore crucial if net lending in the public sector as a whole is to be positive over the next four years and reach the surplus target.

Table 5.5 Average net lending in the public sector

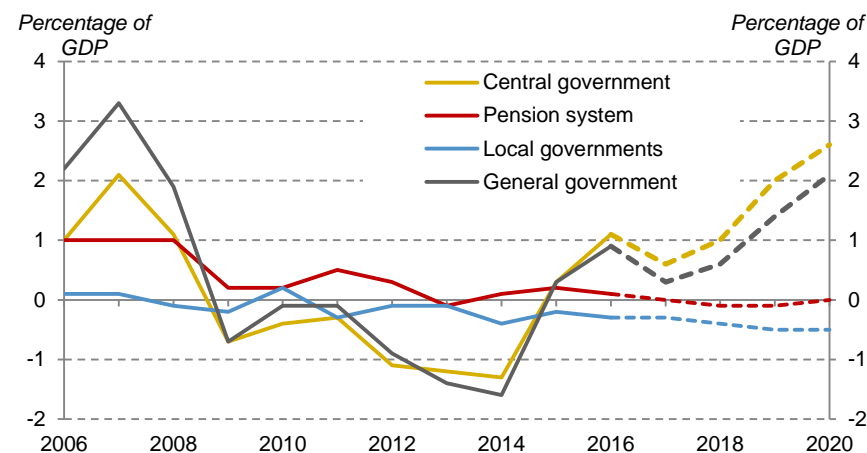
<i>Percentage of GDP</i>	2000–2016	2017–2020
Public sector	0.4	1.1
Central government	-0.1	1.6
Local government	-0.1	-0.4
Old-age pension system	0.6	-0.1

Note: The 2000–2016 column has been calculated from actual outcomes. The 2017–2020 has been calculated from the Government's medium-term estimates in VP17.

Source: VP17.

The question is whether the estimate presented by the Government will prove to be accurate (Figure 5.9). If net lending at the State level does not match the Government's calculation, there is a big risk that the new surplus target will not be achieved either.

Figure 5.9 The Government's estimate of net lending in the public sector



Source: VP17.

5.2 Assessments and recommendations

The period 2006–2015 may be said to constitute a whole business cycle. The average net lending for the period can therefore be used for a retrospective assessment of the surplus target. Net lending amounted to 0.3 per cent of GDP. The target of average 1 per cent net lending over a business cycle has therefore not been attained.

The business cycle from 2006–2015 is characterised by an unusually deep and prolonged downturn; the economy was in recession for seven out of the ten years of the cycle. Even allowing for this, the surplus target was not achieved; structural net lending averaged 0.7 per cent of GDP in the period 2006–2015.

In BP17 the Government states that net lending clearly diverges from the target level. In VP17, however, the Government claims that the clear deviation from the surplus target is no longer there. We do not agree with the Government on this point, but think that there is still a deviation. If the Government had opted to tighten fiscal policy in VÄB17 it would have been possible to prevent any deviation. Instead, the Government has chosen to weaken the public finances in 2017 so that structural net lending is well below the target level of 1 per cent of GDP. In the present economic situation, with the economy above a balanced level of resource utilisation, structural net

lending should be above the target level if we are to attain the surplus target.

The Government intends to achieve the surplus target no later than 2020. The surplus target that the Government is referring to appears to be the new proposed target of 1/3 per cent relative to average GDP over the business cycle and not the present target of 1 per cent. However, the Government has not explicitly stated this. We believe that the Government should make it clear how it sees the transition from the current surplus target to the target level of 1/3 per cent of GDP which is to apply from 2019 onwards under the parliamentary agreement.

In BP17, the Government ascribes the weak net lending position partly to the high level of asylum immigration. Given that there is great uncertainty as to what should be regarded as a new long-term volume of asylum-seekers, we believe it is too early to determine how much of the cost of taking in and integrating asylum-seekers can be regarded as temporary. We therefore feel that, for the sake of prudence, the Government should make provision in the budget for the fact that the long-term volume of asylum-seekers could be much higher than the historical average.

There are good grounds for believing that net lending in both the pension system and the local government sector – which have been positive until now – will turn negative in the next four years. In order to attain the surplus target, the State portion of general government net lending needs to be bigger than it has been at any time since the target was introduced. According to the calculations presented by the Government, net lending at the State level in 2020 needs to be around 2.5 per cent of GDP if general government net lending is to average 1/3 per cent of GDP over the eight-year period 2013–2020. We note, however, that the target of 1 per cent net lending applies to six of these years.

6 The debt anchor and long-term sustainability

In this chapter, we discuss the Surplus Target Committee's proposal for a 'debt anchor' and the long-term sustainability of the public finances.

6.1 The debt anchor

The Surplus Target Committee suggests that a 'debt anchor' should be introduced into the fiscal policy framework. The debt anchor should act as a *guideline* for fiscal policy, not a practical target. The level of the debt anchor is set so that Maastricht debt amounts to 35 per cent of GDP. If actual debt differs from the debt anchor by more than 5 per cent of GDP, the Government should submit a special report to the Riksdag and explain what has caused the deviation and how it intends to address it. In VP17, the Government writes that it intends to return to the Riksdag in the Budget Bill for 2018 with proposals to introduce a debt anchor and a suggested level for this.

One of the arguments for the Committee's choice of 35 per cent of GDP is that:

A debt level of 35 per cent of GDP leaves a significant margin to the EU's debt limit and to the debt levels that international studies have identified as problematic.¹

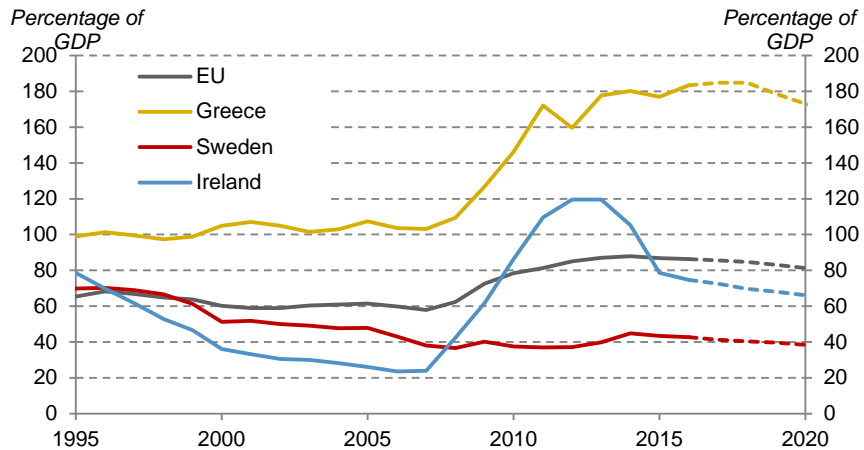
The EU's debt limit is 60 per cent of GDP. However, this cannot be taken as binding.² As can be seen from Figure 6.1, Sweden is well below this limit and in a favourable debt position compared to most other EU countries. A debt level of 35 per cent of GDP leaves a margin to the EU's debt limit which makes it possible under normal circumstances to pursue an active fiscal policy without the risk of exceeding this limit. At the same time, we can see from Figure 6.1 that Maastricht debt can grow in just a few years from a level well below 35 per cent of GDP to around 120 per cent (Ireland). It is therefore not obvious that a debt level of 35 per cent of GDP

¹ SOU 2016:67, p. 226.

² See Calmfors (2005) and Calmfors (2015).

provides the margins required to be able to pursue an active fiscal policy on the desired scale in a crisis situation.

Figure 6.1 Maastricht debt in selected EU countries



Source: IMF and Macrobond.

Theoretically, net financial worth, i.e. the balance of liabilities and financial assets, is a more suitable indicator of sustainability than gross debt.³ But for partly practical reasons, it is more usual internationally to use gross debt in comparisons and regulations.⁴ While there are statistics for net worth, they can be hard to evaluate for e.g. the players in the financial markets.⁵ As Figure 6.2 shows, Sweden's net worth is high relative to most other OECD countries.

In earlier reports, we have discussed how a reduced surplus target would affect public-sector wealth.⁶ The Surplus Target Committee makes a similar analysis. The Committee finds that a surplus target of 1/3 per cent of GDP means that general government net worth stabilises in the medium term at just over 20 per cent of GDP, while government debt stabilises at around 25 per cent of GDP and Maastricht debt at around 35 per cent. This means that achieving a surplus target of 1/3 per cent of GDP causes Maastricht debt to go

³ See Chapter 7 of Fiscal Policy Council (2014), and Niepelt (2014).

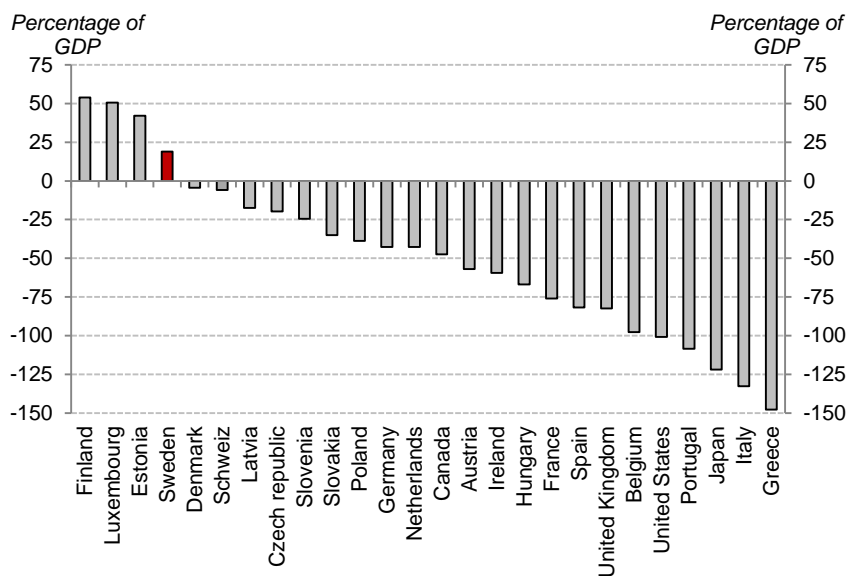
⁴ The Maastricht debt in the EU Stability and Growth Pact is an example of this.

⁵ Gross debt is not sensitive in the same way as net worth to different valuation and accounting principles, so it is easier to interpret. The assets making up net worth may also be more or less liquid in different countries. In Sweden, for example, a large proportion of public-sector financial assets are held in the pension system and cannot be simply disposed of when required.

⁶ See Chapter 7 in Fiscal Policy Council (2014) and Chapter 5 in Fiscal Policy Council (2015).

on falling for a few years while net worth increases slightly from today's level. The Council's analyses in previous reports are in line with the Committee's analysis.

Figure 6.2 Net financial worth in selected OECD-countries in 2015



Source: OECD.

Based on economic research, it is hard to draw any clear conclusions as to what is a reasonable level of debt.⁷ Economic theory does ascribe a clear economic policy function to public-sector gross debt: the debt should act as a shock-absorber and mitigate the effects of fluctuations in economic activity. On the other hand, economic theory says nothing specific about the right level of debt, or how high it should be allowed to be. Nor does empirical research offer any clear answers. There is some empirical support for the idea that an economy may run into problems if debt is too high. A high level of debt may lead to higher interest rates and lead to lower growth in the long term. There is a certain consensus in the literature that debt is too high if it reaches 80–100 per cent of GDP.⁸ In Box 6.1, we

⁷ See Andersson (2016) for an up-to-date literature survey.

⁸ In the period 1719–2011, Sweden never had gross debt exceeding 90 per cent of GDP; see Reinhart, Reinhart and Rogoff (2012). Since 2011, the Swedish debt level has been at a level around 40 per cent of GDP (see Figure 6.1). Swedish government debt was at its highest in the early 1990s when it rose to around 75 per cent of GDP.

discuss what theoretically constitutes the limit to how high debt can go without the Government losing control of the situation.

Box 6.1 Where is the limit for sustainable debt?

In this box, we present a theoretical discussion of where the limit for sustainable Maastricht debt should be. We base our discussion on the debt equation for the public sector:⁹

$$d_t - d_{t-1} = \left(\frac{r_t - g_t}{1 + g_t} \right) \times d_{t-1} - p_t \quad (1)$$

where d_t is Maastricht debt as a percentage of GDP at date t , r_t is the real interest rate at date t , g_t is the rate of growth in real GDP at date t , and p_t is primary net lending, i.e. tax revenues minus public spending on consumption and investments, but excluding interest income and expenses as a proportion of GDP at date t .

We now define p^{max} as the maximum primary net lending that it is possible to achieve in the economy, i.e. the difference between the maximum taxes that can be taken from the economy without tax revenues starting to fall (the top of the Laffer curve) and the minimum government expenditure that is politically, socially and structurally sustainable without the economy ceasing to function. Both of these levels are unclear from a theoretical standpoint, and it is difficult or impossible to identify empirically where they lie.

For the sake of argument, we will assume that there is a level of debt that represents a breaking point, i.e. if debt rises above this level, it will continue to grow uncontrollably. We will call this debt level d^{max} . If the debt should exceed d^{max} , the Government will no longer be able to obtain any new loans to roll over debt repayments going forward and will be forced to ‘suspend payments’ – in other words, the country will be insolvent.¹⁰ A mathematical expression for this breaking point, d^{max} , can then be formulated with the aid of equation (1) and the greatest possible primary net lending p^{max} as

⁹ The debt equation is derived in e.g. Escolano (2010).

¹⁰ The example of Greece shows that it is far from clear just how sharp this boundary is. If an economy should pass the threshold d^{max} , the situation will turn into a negotiation between lenders and borrowers where it is in the lenders’ interests to ensure that they get back as much as possible of what they have lent, while it is in the borrowers’ interests to maintain contact with the financial markets. It is therefore unclear whether there really is any distinct breaking point. It probably varies from case to case; see Krugman (1988) for a discussion.

$$d^{max} - d^{max} = \left(\frac{r_t - g_t}{1 + g_t} \right) \times d^{max} - p^{max} \Rightarrow$$

$$d^{max} = \left(\frac{r_t - g_t}{1 + g_t} \right)^{-1} \times p^{max} \quad (2)$$

Example: If $p^{max} = 10\%$ of GDP and $\left(\frac{r_t - g_t}{1 + g_t} \right) = 5\%$, then
 $d^{max} = 2 \times \text{GDP}$.

Equation (2) shows how crucial the relationship between real interest rates and real growth is to the question of sustainable debt. If the difference between real interest rates and real growth widens, the maximum possible level of debt d^{max} will fall and vice versa.

The reasoning above is grossly simplified. Long before Maastricht debt has started to approach the limit d^{max} , various types of problem are likely to arise. The higher the level of debt, the more of the tax revenues have to be used for interest payments instead of public consumption and investment. Even in the short term, this can worsen the growth prospects in the country and so aggravate the debt problem.

A higher level of debt limits the Government's scope to pursue a stabilisation policy. Loan-financed stimuli will increase the debt and may cause the debt to grow as a percentage of GDP also. Fiscal policy stimuli in an economy with high levels of debt will have a limited or even negative effect on demand in the economy.¹¹ Another problem that hit Sweden during the crisis in the 1990s and which many Eurozone countries suffered from in the financial crisis is that the market interest rates paid by the State tend to rise as debt grows; a highly indebted State has to pay a higher risk premium than a country with little debt. Interest costs that were not a problem can increase very fast if the financial markets lose confidence in the policy being pursued. A vicious spiral with a growing deficit, increased debt, higher interest costs and ever-increasing consolidation needs can quickly set in.¹²

¹¹ Corsetti and Müller (2015).

¹² In 1993 the deficit in the Swedish public finances amounted to some 12 per cent of GDP. Government debt had grown in three years from just over 40 per cent to around 75 per cent of GDP. One krona in every three spent under the State budget was borrowed, and one third of this expenditure was interest payments on government debt. In the early 1990s, real interest rates rose sharply: in some cases by ten percentage points, in some cases by ten, see Söderström (1995).

It is also possible that a high level of debt leads to slower growth. There seems to be an inverse statistical correlation between debt and growth, and it is possible that this is intensified when the debt passes a certain threshold. But the question of what sort of causal relationship exists between debt and growth, and whether there are any threshold effects, is still debated.¹³

As it is hard to determine what is a problematical level of debt, it is also difficult to get a definite idea of what constitutes a safe level. We note that a former chairman of the Council suggests that a reasonable level of Maastricht debt is in the range from 20–30 per cent of GDP.¹⁴ This may be compared, for example, with an analysis by the Swedish National Debt Office (SNDO), which concludes that a level of Maastricht debt equivalent to 40–45 per cent of GDP may be reasonable in the longer term and could allow for substantial safety margins in the event of crises.¹⁵ These differing conclusions illustrate that what might be seen as a reasonable level of debt is basically a matter of judgment. Fundamental economic parameters, such as growth prospects and interest rates, determine what is a reasonable level of debt, and there is always a good deal of uncertainty in projections of how these variables are likely to develop.

In summary, we may conclude that the debt anchor is a mechanism which links back to the underlying reason for having a surplus target, i.e. to create sustainable long-term public finances. The debt anchor then helps to strengthen the fiscal policy framework. A debt anchor of 35 per cent of GDP provides a sufficient safety margin to handle a serious economic crisis, assuming that real interest rates are low and that long-term growth in the Swedish economy does not fall dramatically.

¹³ The existence of a statistical correlation between high government debt and low GDP growth does not necessarily mean that a high level of debt *causes* slow growth. It may also be that low growth leads to a high level of debt; see Reinhart and Rogoff (2010), Herndon et al. (2014), Panizza and Presbitero (2014) and Pescatori et al. (2014).

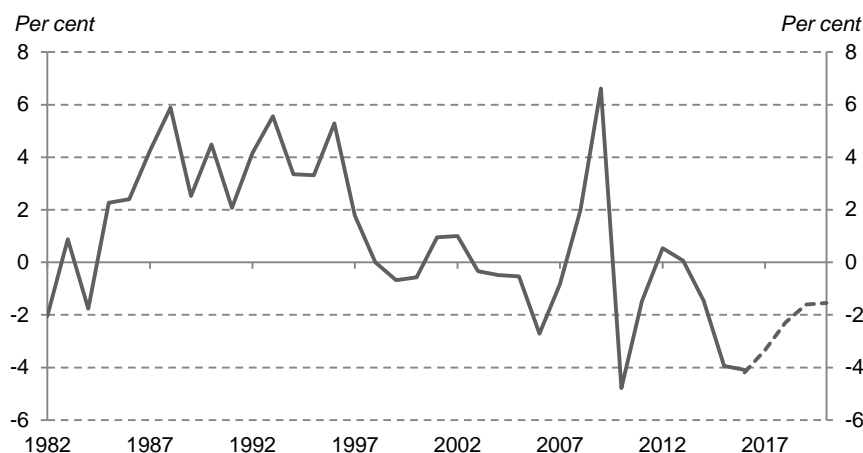
¹⁴ Andersson and Jonung (2016).

¹⁵ See SNDO (2016) and SNDO response to consultation on SOU 2016:67.

6.2 Real interest rates and long-term sustainability

As we showed in Box 6.1, real interest rates and their relationship to real growth are crucial to the development of debt. Historically, real interest rates have been higher than real growth.¹⁶ In Sweden the difference averaged 1 percentage point between 1982 and 2016 (Figure 6.3). Today, however, we have the opposite situation; since 2013, real interest rates in Sweden have been lower than real growth. This means (other things being equal) that debt as a proportion of GDP diminishes over time.

Figure 6.3 Difference between real interest rates and real growth in Sweden



Note: $(r-g)$ is the difference between long-term real interest rates (10-year government bond - KPIF) and GDP growth (fixed prices, calendar-adjusted). Forecast values from 'The Swedish economy', March 2017.

Source: SCB, NIER (2017b) and Macrobond, and own calculations.

6.2.1 Swedish real interest rates are governed by global developments

In a small open economy like Sweden's, real interest rates are affected not only by domestic drivers but also by global factors. Free movement of capital and increased financial integration mean that the trend in Swedish real interest rates is largely determined by global

¹⁶ See Escolando (2010).

real interest rates. The latter are in turn determined by expectations of global growth and factors that affect savings and investments. Global real interest rates have been falling steadily since 1980, a total decrease of approx. 4.5 percentage points.¹⁷

Changes in expected growth probably do not explain the fall in real interest rates prior to the financial crisis. Global growth fluctuated around a relatively stable level between 1980 and the mid-2000s. On the other hand, it is likely that expectations of global growth have been adjusted downwards slightly following the financial crisis, so helping to push down real interest rates in recent years.¹⁸ Both the outlook for productivity improvements and global growth have been continually adjusted downwards since 2011. The IMF has shown that productivity growth in all but one of a total of thirty countries studied was lower than the trends that prevailed before the financial crisis in 2008–2009.¹⁹ However, there is great uncertainty as to what lies behind the lower productivity growth and whether the reasons for the fall are permanent (structural) or temporary (cyclical) in nature.^{20,21} Prolonged downturns can have long-term effects, so it is hard to distinguish structural trends from cyclical variances.

Viewed in a longer-term perspective, however, most studies suggest that the fall in real interest rates over the last thirty years is mainly due to changes in the global readiness to save and invest.²²

Figure 6.4 outlines the relationship between investments, savings and real interest rates. Investments relative to GDP have decreased in developed economies, particularly after 2000 (this is shown by a movement inwards/downwards of investments in the chart).²³ The decreased readiness to invest is due to the fact that the relative price

¹⁷ See Rachel and Smith (2015).

¹⁸ See Rachel and Smith (2015) and Hamilton et al. (2016).

¹⁹ IMF (2015).

²⁰ The prolonged downturn, and the resulting low levels of investment, may be a contributory factor. Another hypothesis is that the productivity gains from earlier IT investments are starting to level off. There is also a discussion about whether some of the flagging productivity growth may be down to increased measurement error, i.e. measured production not taking full account of improved quality. Syverson (2016) shows, however, that measurement errors cannot explain all of the slow-down.

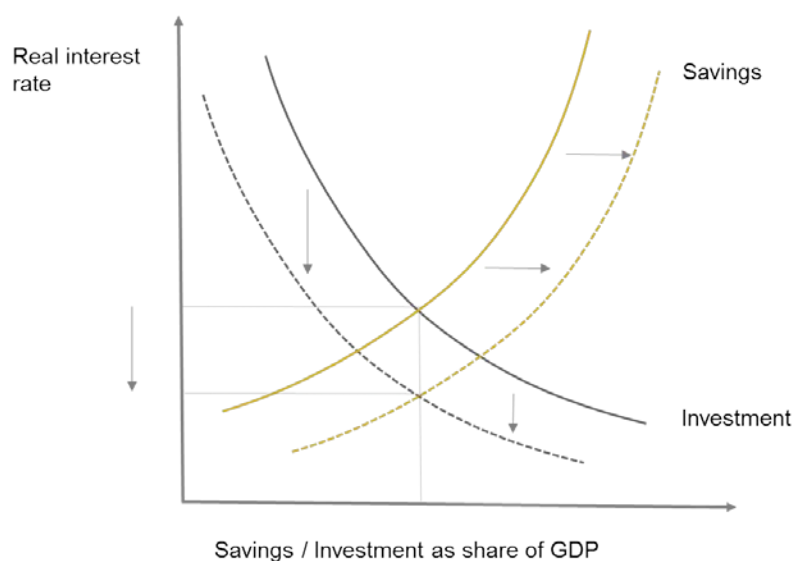
²¹ See IMF (2016a).

²² See e.g. IMF (2014), Rachel and Smith (2015), Carvalho et al. (2016), Sveriges Riksbank (2014) and Sveriges Riksbank (2017a), and NIER (2014).

²³ At the global level, however, investments as a percentage of GDP have remained relatively stable at around 23–25 per cent (see Sveriges Riksbank, 2017a).

of capital goods has fallen and that the expected return on investments has decreased.²⁴

Figure 6.4 Outline of the relationship between savings, investment and real interest rates



Note: A reduced willingness to invest causes demand for investments to move in/downwards. Conversely, an increased willingness to save causes net lending to move out/upwards. Both of these behavioural changes act in a direction that drives real interest rates down.

In parallel with the reduced demand for investments, the willingness to save has increased at a global level (a move up/outwards of net lending in Figure 6.4). This is largely because saving has increased hugely in many developing economies in the last fifteen years. Net lending is also affected by other factors, such as income distribution between and within countries, and demographic changes. Since 1980, two trends have characterised the development of income distribution. Inequality between countries has decreased as the developing countries have moved closer to the developed economies by virtue of relatively faster GDP growth. At the same time, income inequality has increased within the countries of the world. This latter

²⁴ See IMF (2014). The relative price of capital goods has gone down (particularly from 1980 to the 2000s), resulting in lower investment volumes at a given real interest rate. The trend towards lower investment ratios has increased as the return on investments has fallen since the financial crisis in 2008–2009.

trend has been strong enough to increase the desire to save at the global level.²⁵ Demographic changes have also contributed to the increase in saving. Firstly, the proportion of the world's population who are of working age was increasing up to a few years ago. People of working age save more on average than those who are not. Secondly, life expectancy has been increasing all the time. As people live longer, this means that they will save more in their working lives to cover a longer period of retirement.²⁶

6.2.2 Real interest rates are expected to remain low

A reduced demand for investments and an increased willingness to save both act in the same direction and push global real interest rates down. However, as well as broad structural trends, there are also country-specific and cyclical factors that affect real interest rates in the short to medium term.²⁷ Nevertheless, the long-term structural trends suggest that real interest rates will remain low into the future. It is true that the proportion of elderly and young people is rising, which may be expected to exert an upward pressure on real interest rates in the longer term. But it is very uncertain when and to what extent this demographic pressure will affect real interest rates.

Interest rates – both Swedish and global – will probably rise somewhat in the coming years, partly because investments are expected to pick up while precautionary saving decreases. There is every indication, however, that the rise in real interest rates will be modest.²⁸ Both the Riksbank and the NIER have previously said that there is a considerable risk of global real interest rates remaining low for a long time to come, and that this could hold back the normalisation of Swedish interest rates.²⁹ The assessments of market operators, from their pricing of financial instruments and in surveys,

²⁵ When most of the income increases fall to a small part of the population, saving will increase because the tendency to consume is greater higher up the income distribution curve; see Rachel and Smith (2015).

²⁶ Carvalho et al. (2016) find that increased average life expectancy is a major demographic factor behind the declining trend in real interest rates.

²⁷ Such as a temporary 'headwind' in the form of fiscal austerity, low inflation and increased uncertainty during the prolonged recovery from the downturn after the financial and debt crisis; see Hamilton et al. (2016).

²⁸ Rachel and Smith (2015) estimate that global real interest rates will be around 1 per cent in the medium to long term.

²⁹ See Armelius et al. (2014) and NIER (2014).

also point to a moderate rise in real interest rates. In the monetary policy report in February this year, the Riksbank adjusted the band for its long-term repo rate down to 2.5–4 per cent. This implies a real base rate of around 0.5–2 per cent, assuming that inflation stabilises around the inflation target. At the same time, the Riksbank notes that the repo rate can be expected to stay well below this band for the next few years.³⁰ In its latest forecast, the NIER also downgraded its projection of real interest rates in the longer term. For Sweden, the NIER estimates that real interest rates will now stand at 1 per cent in 2026, which is a revision downwards of 1 percentage point from before.³¹

Even if the long-term equilibrium level of real interest rates is low in the future, short-term real interest rates may still rise for cyclical reasons. Experience from the USA shows that when the key rate does start to normalise, it can move faster than the forecasts have indicated.³² Risks, on both the upside and the downside, therefore mean that all forecasts of real interest rates are fraught with uncertainty.

6.3 The long-term sustainability of the public finances

There is no generally accepted measure of whether or not the public finances in a given country are sustainable in the long term. At bottom, sustainability is a matter of whether the fiscal policy can be maintained over a long period without causing an unsustainable growth in debt (see Box 6.1). In practice, it is not easy to determine whether this is possible. Sustainability depends on a number of factors, including the size of public-sector debt, population changes and growth prospects. Sustainability also depends on the political ability of the Government to implement reforms that enhance growth prospects and whether the Government is able to make the necessary adjustments to the budget when the reality changes. If the fiscal policy believed to be sustainable in the long term, individuals

³⁰ The Riksbank estimates in its latest forecast that the real key interest rate will be -1.9 per cent in the first half of 2019. Sveriges Riksbank (2017b).

³¹ See NIER (2017b).

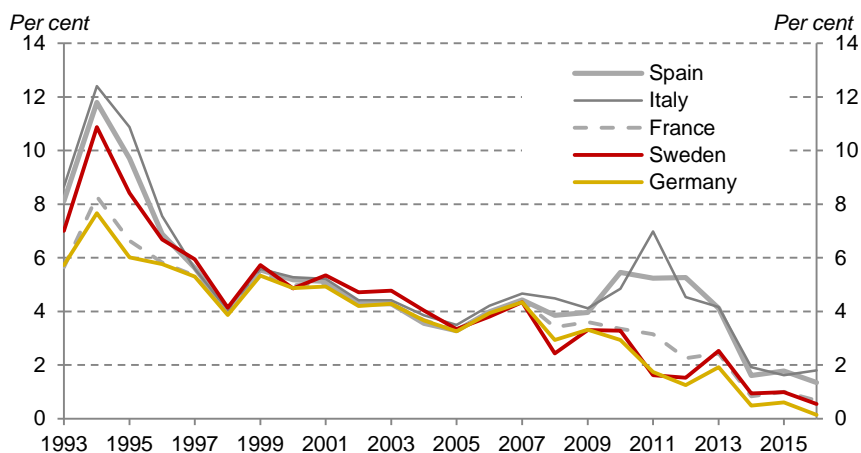
³² See Hamilton et al. (2016).

and the financial markets will lose confidence in the policy, which will in itself reinforce an unsustainable trend.

The ability of the public sector to borrow from the financial markets may be seen as an indicator of whether or not the public finances are sustainable. If it is not possible to obtain loans, or if this has to entail greatly increased risk premiums, this is an indication that the players in the capital markets believe that there is a tangible risk that the loans will not be repaid in full. These market assessments probably reflect the actual situation and developments in the short term, but it is far from certain that the market operators have identified long-term sustainability problems in the public finances.³³

The interest on Swedish ten-year government bonds has been at historically low levels in recent years, only slightly higher than the interest on German government bonds which is often used as a benchmark within the EU (Figure 6.5). This indicates that the players in the capital markets judge that the risk of lending money to the Swedish Government is small.³⁴

Figure 6.5 Interest on ten-year government bonds



Source: Eurostat and Macrobond.

The European Commission, the NIER and the Government assess the long-term sustainability of fiscal policy with the aid of economic

³³ The example of Greece is often cited in this connection. For a discussion, see e.g. Beetsma and Gradus (2012) and Persson (2012).

³⁴ The major international credit rating agencies now give their highest ratings to the *Kingdom of Sweden*: Moody's gives Sweden a rating of Aaa; Standard and Poor's, AAA; and Fitch, AAA.

models. The purpose of these assessments is to pick up early signs of a need to adjust fiscal policy, so measures to maintain sustainability and preserve confidence in fiscal policy can be taken in good time.

The model evaluations of the long-term sustainability of the public finances are uncertain for several reasons. In these calculations, public spending is usually projected forwards on the assumption that future public-sector welfare commitments will be similar to today's. However, different ways of defining an unchanged welfare commitment have a bearing on how expenditure will develop. Fundamentally very uncertain estimates of the long-term development of the economy also have a big impact on the results. The calculations are also sensitive to the level of net lending at the starting point for the calculation. All in all, this means that sustainability indicators need to be interpreted with caution.³⁵

The long-term sustainability of fiscal policy is often measured with the aid of the 'S1' and 'S2' -indicators. The Government, the European Commission and the NIER regularly publish calculations of these indicators. The 'S' indicator values give the change in primary net lending required, as a percentage of GDP, for fiscal policy to be sustainable. S1 show how much the budget needs to be increased or decreased to Maastricht debt to equal 60 per cent of GDP in 2030. S2 is a measure with no direct connection to the rules of economic policy, which shows how much the budget needs to be permanently increased or decreased for public-sector net debt as a proportion of GDP to stabilise over an indefinite time period.³⁶

Table 6.1 Indicators of long-term fiscal sustainability

<i>Percentage of GDP</i>	S1	S2
BP17	-2.5	-1.8
VP17	-3.2	-1.7
EC (January 2017)	-2.9	1.0

Source: BP17, VP17 and European Commission (2017a).

The 'S' indicators provide a theoretically well-founded picture of the long-term consequences of fiscal policy. Note, however, that the indicator values say nothing specific about the fiscal space over the next few years but merely hint at the budgetary consequences of the

³⁵ See NIER (2017a) for a discussion.

³⁶ The S2 indicator is calculated on the assumption that the present value of all future public-sector income will be equal to the present value of all future public expenditure plus the initial debt.

current fiscal policy over a longer period. A negative value for these indicators means that a permanent weakening of the budget is possible without rendering fiscal policy unsustainable. A positive value for the indicator, on the other hand, means that a permanent budget increase is necessary to maintain long-term sustainable public finances.

In BP17 and VP17, the Government presents calculations of S1, i.e. the amount of permanent changes required in 2017 for the general government debt to equal 60 per cent of GDP in 2030 (Table 6.1). It is not surprising that both the Government and the Commission present a negative S1 value as Maastricht debt in 2016 amounted to around 42 per cent of GDP. This debt can therefore increase by 18 percentage points before it hits the Maastricht ceiling. However, the Government and the Commission differ in their view of sustainability in the very long term, i.e. for the time beyond 2030. The Government's S2 indicator suggests that a permanent tax reduction equivalent to almost 2 per cent of GDP is possible, while the Commission's calculations indicate that a permanent tax increase of 1 per cent of GDP is required to stabilise net worth in the long term. However, we would remind the reader once more that these calculations are fraught with great uncertainty.

6.3.1 A new calculation of sustainability

A debt anchor is to be introduced from 2019, if the Riksdag endorses the proposal from the Surplus Target Committee. The level of the debt anchor is set so that Maastricht debt amounts to 35 per cent of GDP. If such a debt anchor is introduced, the calculation of S1 should be based on a debt level of 35 per cent and not 60 per cent of GDP.³⁷ We asked the NIER to produce a calculation of S1 where the Maastricht debt is set at 35 per cent instead, and to distinguish it from S1, we will call this indicator S35.³⁸

The calculations of S35 are based on the public finance and macroeconomic situation as it looked in December 2016 according to the NIER's estimates and Statistics Sweden's population forecast

³⁷ The National Audit Office also recommends this; see RiR (2016b). We note that the Government presents estimates of S1 in VP17 for what is required for Maastricht debt to equal 35 per cent of GDP in 2026.

³⁸ The only thing that differentiates the calculation of S1 from S35 is the level of Maastricht debt in 2030; see Ryner (2017).

from October 2016.³⁹ The main scenario used in the calculation assumes that expenditure for public consumption and public transfers develops in line with the NIER's definition of an unchanged public welfare commitment.⁴⁰ The main scenario also assumes that the actual retirement age rises progressively to 2030, from just under 64 today to 64.5 years. At the same time as older people are expected to prolong their working lives, they are also assumed to be healthier than ever, so the need for welfare services at a given age should decrease slightly over time.

Table 6.2 Overview of scenarios

	Retirement age from the labour market	Need for welfare services	Staffing levels
Main scenario: Unchanged staffing levels	Gradually increasing	Gradually decreasing among older people	Constant
Alternative scenario: Unchanged behaviour	Unchanged	Unchanged	Constant
Alternative scenario: Reduced staffing levels	Gradually increasing	Gradually decreasing among older people	Decreasing

Source: Ryner (2017).

As a contrast to the main scenario ('unchanged staffing level'), an alternative scenario ('unchanged behaviour') has been calculated, in which the actual retirement age remains the same as it is today. Older people are also assumed to need the same amount of medical and social care as they do today. A further alternative scenario ('reduced staffing level') drops the assumption of unchanged staffing levels in the welfare services and instead assumes a gradual reduction in staffing levels. This implies a reduced public welfare commitment over time, as the term is used in the NIER's calculations. Table 6.2 provides an overview of the three different scenarios.

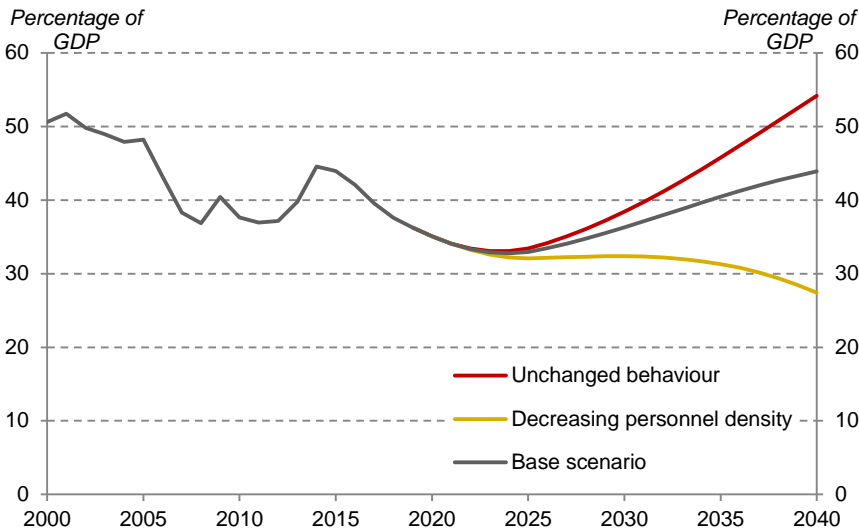
³⁹ In these calculations, we have not taken account of a suggestion – which the Government is now working on – to reduce the currency reserve. If this proposal is implemented, general government debt will decrease by SEK 257 billion; see draft consultation document from the Council on Legislation on the Riksbank's financial independence and balance-sheet.

⁴⁰ The NIER assumes that the expenditure will grow at such a rate that the present level of ambition in the overall public-sector welfare commitment to citizens will be maintained. An unchanged public welfare commitment is taken to mean that staffing levels in the welfare services remain as they are today and that the present transfers to households are retained; see NIER (2017a).

Figure 6.6 shows how Maastricht debt as a percentage of GDP changes in the three scenarios. In 2016, Maastricht debt amounted to around 42 per cent of GDP. In the estimates, the debt falls to around 32 per cent of GDP in 2025, but for the period thereafter it rises in two of the scenarios. In the main scenario, Maastricht debt rises to approx. 36 per cent in 2030. In the alternative scenario with unchanged behaviour, it rises to just over 38 per cent. Only in the scenario with reduced staffing levels does the debt remain at around 32 per cent of GDP until 2030.

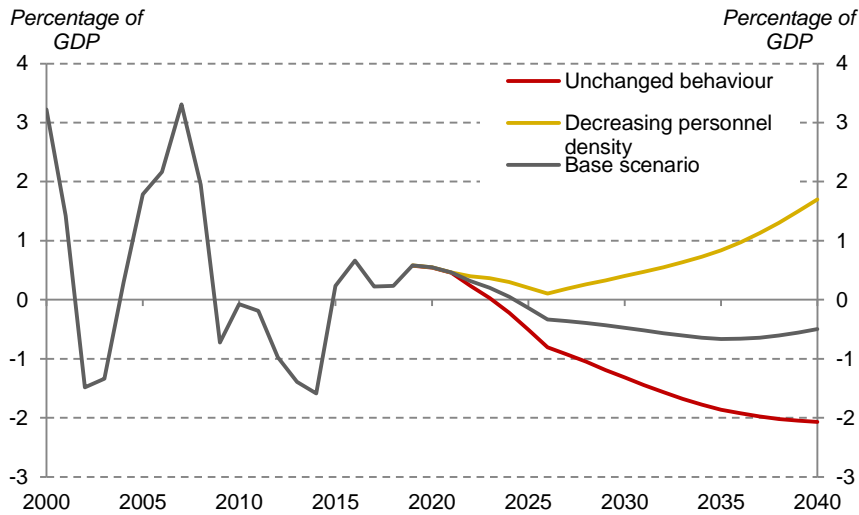
The main reason why Maastricht debt increases in the main scenario and in the alternative scenario with unchanged behaviour is that primary expenditure in the public sector, i.e. the total spending excluding net capital gains/losses, grows as a percentage of GDP. Tax revenues also grow slightly as a percentage of GDP, but not enough to prevent primary net lending going negative as public consumption as a proportion of GDP grows. In the alternative scenario with reduced staffing levels, primary expenditure as a percentage of GDP decreases and so primary net lending is less negative and perhaps even positive by 2030. This means that net lending is positive for the whole period. In the main scenario, primary net lending is never positive, so Maastricht debt increases. This also increases capital expenditure, and net lending turns negative from 2025 onwards (Figure 6.7).

Figure 6.6 Maastricht debt to 2040



Source: Ryner (2017).

Figure 6.7 General government net lending



Source: Ryner (2017).

Table 6.3 shows the S35 indicator and Maastricht debt in 2030. In the main scenario, the debt is just over 1 percentage point more than the debt anchor in 2030. If the tax ratio is raised by 0.11 percentage

points immediately, the debt will reach 35 per cent of GDP in 2030.⁴¹ In the alternative scenario with unchanged behaviour, the tax ratio needs to be raised by 0.28 percentage points for the debt to equal 35 per cent of GDP in 2030. In the alternative scenario with reduced staffing levels, on the other hand, the tax ratio needs to be reduced by 0.20 percentage points to reach the level of the debt anchor in 2030.

Table 6.3 The S35 indicator and Maastricht debt in 2030

<i>Percentage of GDP</i>	S35	Maastricht debt in 2030
Main scenario: <i>Unchanged staffing levels</i>	0.11	36.3
Alternative scenario: <i>Unchanged behaviour</i>	0.28	38.4
Alternative scenario: <i>Reduced staffing levels</i>	-0.20	32.4

Source: Ryner (2017).

Table 6.3 shows that Maastricht debt in 2030 does not differ by more than 5 percentage points from the debt anchor level in any of the three scenarios examined, which is acceptable according to the Surplus Target Committee's criterion. Nor do the calculations suggest that the present economic policy carries any significant risk of imbalances in the public finances in the period to 2030.

In its latest sustainability report for the public finances, the NIER uses the same scenarios and assumptions as in the calculations we have presented above. However, the NIER's horizon is longer than in the estimates above, and extend to 2100 in some calculations.⁴² For the period after 2030, the NIER's calculations indicate that the Government may be forced to take steps to prevent Maastricht debt deviating by more than 5 per cent of GDP from the debt anchor.

We can see from Figure 6.6 that, in the main scenario, Maastricht debt reaches almost 45 per cent of GDP in 2040, i.e. much higher than the 35 per cent debt anchor. The NIER also notes in its report that the deficit in primary net lending is so large that general government net worth will fall from today's level of around 20 per cent to approx. 14 per cent of GDP in 2040.

In its sustainability report, the NIER chooses not to calculate any S1-indicator on the basis that Maastricht debt is already less than

⁴¹ The tax ratio, i.e. taxes and other charges as a proportion of GDP, was 43 per cent in 2016.

⁴² See NIER (2017a).

60 per cent of GDP. The NIER does calculate S2-indicators for the three scenarios studied.

In the NIER's main scenario, the S2-indicator is 0.0, which means that the public finances can be regarded as sustainable in the long term without any austerity measures. Note that this scenario is based on the assumption that the actual retirement age rises gradually by four years between now and 2100. Net worth does fall slightly in the main scenario, but stabilises at a negative level (approx. -10 per cent of GDP) closer to 2100.

Table 6.4 The NIER's calculation of S2

<i>Percentage of GDP</i>	S2
Main scenario: <i>Unchanged staffing levels</i>	0.0
Alternative scenario: <i>Unchanged behaviour</i>	4.0
Alternative scenario: <i>Reduced staffing levels</i>	-4.9

Source: NIER (2017a).

In the scenario which assumes unchanged behaviour, on the other hand, the S2-indicator indicates an immediate need for austerity measures equivalent to four per cent of GDP if the public finances are to be sustainable in the longer term. In the scenario with reduced staffing levels, however, the indicator shows there is a large fiscal space.

In summary, we find that the sustainability calculations performed by the NIER do not point to any acute risk of finances in the public finances, at least not in the period to 2030. For the period thereafter, on the other hand, the NIER's calculations suggest that the policy needs to be modified to prevent any imbalances.

In our 2015 report, we argued that the actual retirement age needs to be progressively increased.⁴³ Long-term demographic estimates indicate that the average lifespan will continue to increase and will be approximately 7 years longer in 2100 than it is today.⁴⁴ If the retirement age is not changed, this means that all of the longer lifetime will be made up of an equally large extension to retirement. This means that the pension contributions paid while people are in

⁴³ Fiscal Policy Council (2015), Chapter 4.

⁴⁴ Today, the average remaining lifespan for a 65-year-old is just over 20 years. By 2040 this will have increased to almost 23 years and by 2100 to almost 27 years; see NIER (2017a), p. 19.

work will need to be spread over a larger number of retirement years. In principle, the pension system is robust in respect of such a development in that pensions are automatically reduced in relation to pay. This is a purely mechanical effect of the structure of the pension system. However, a development whereby pensions are gradually reduced in relation to pay risks being perceived as unacceptable in the long term, arousing concerns that the system may perhaps not be politically robust. The calculations in our 2015 report showed that an increase in retirement age is entirely necessary in order to maintain acceptable pension levels in the pension system which are sustainable in the long term.⁴⁵

If retirement age increases by one month per year, working life – all things being equal – will increase by seven years by the end of this century. As seven years also corresponds to the forecast of the extent to which the average lifespan is expected to increase until then, this would mean that the entire increase in lifespan is taken up by a longer working life. According to the estimates that we presented in our 2015 report, increasing the retirement age by one month per year would probably not suffice to maintain the current remuneration rate from the pension system. The calculations that have now been presented by the NIER do not prompt us to revise this assessment.⁴⁶

We believe that an annual increase of one month in the retirement age is necessary to maintain future State old-age pensions at an acceptable level and for the development of the public finances to be sustainable in the long term. The specified age levels in e.g. the pension system, other social security schemes and the Employment Protection Act (LAS) should therefore be automatically incremented by one month per year.

6.4 Assessments and recommendations

We believe that a debt anchor of 35 per cent provides a sufficient safety margin to weather a serious economic crisis, assuming that real interest rates are low and that long-term growth in the Swedish economy does not fall dramatically. We note, however, that the surplus target in place since 2000 has not been met. If the new lower surplus target is not achieved either, this will worsen the chances of

⁴⁵ Fiscal Policy Council (2015), p. 105–106.

⁴⁶ See NIER (2017a), p. 34–35.

reaching the desired level of Maastricht debt and hence of weathering any future crisis.

The sustainability calculations produced for the Council by the NIER do not suggest that the economic policy carries any significant risk of imbalances in the public finances in the period to 2030.

As in our 2015 report, we consider that a rising retirement age, increasing by one month per year, is necessary to keep future State pensions at an acceptable level and to maintain long-term sustainable public finances. The specified age levels in e.g. the pension system, other social security schemes and the Employment Protection Act (LAS) should therefore be automatically incremented by one month per year.

7 Market rents and income distribution

7.1 Background

Problems in the housing market have been the subject of many reports on the Swedish economy in recent years; see e.g. EC (2016a) and IMF (2016b). Three particular aspects are usually emphasised: high prices for single-family houses and tenant-owned units, high levels of household debt, and a malfunctioning rental market. The prices of single-family houses and tenant-owned units have been rising more or less constantly for the last two decades. From February 2005 to February 2017, Valueguard's price index for single-family homes increased by 136 per cent and for tenant-owned units by 205 per cent. These rising prices have caused household debt to increase, from 138 per cent of disposable income in 2005 to 179 per cent in 2016.¹ At the same time, it has become harder and harder for new households to break into the rental market. Because of the lack of movement in the rental market and discrepancies in tax rules, rental units have been turned into tenant-owned housing at a brisk rate. For example, the number of rented apartments in Stockholm has fallen by 80,000 since the year 2000, and the number of homes provided through the Housing Agency more than halved between 2005 and 2016.

The shortcomings in the housing market create problems in many areas of the economy. A malfunctioning rental market forces many households to own their homes, even though ownership often entails great risks and transaction costs, particularly for young households. The shortage of rented accommodation combined with high prices for owner-occupied or tenant-owned properties reduces mobility in the housing market and makes it harder for companies to recruit staff. Heavily indebted households may be forced to cut down their consumption suddenly if interest rates rise in the future, which could threaten macroeconomic stability. Fluctuations in house prices up and down redistribute income and wealth. A malfunctioning housing market therefore has an adverse effect on both efficiency and

¹ Sveriges Riksbank (2016b), Figure 2:7.

stability in the economy and on the distribution of income and wealth.

There are many reasons why the housing market is working badly. The tax system favours home ownership through a combination of moderate property taxation and full deductibility of interest and tax on financial income. Tenant-owned units are especially favoured by tax breaks. The use of the utility value system to set rents also keeps rents down, particularly in attractive areas, further encouraging the switch to tenant-owned units. Moreover, there has been insufficient new construction for a number of years because of rent control, hold-ups in the planning process and a lack of competition in the building market.

Housing costs are one of the biggest items in the household budget, and the home is by far the biggest asset for most homeowners. Every reform of the housing sector, whether it relates to taxes or other types of regulation, therefore has an inevitable impact on the distribution of incomes and welfare in the economy. It is thus natural that the Fiscal Policy Council, in line with its instruction to 'analyse the effects of fiscal policy on the distribution of welfare in the short and long term', should study how reforms aimed at making the housing market work better in the longer term could affect the distribution of incomes and spending power.

In last year's report, we studied two ways of achieving greater neutrality in the tax system: to limit the right to deduct interest on debts and to restore a property tax which is proportion to the value of the property. We found that reduced interest relief would have a relatively neutral effect on income distribution, while the burden of a renewed property tax would fall mainly on households with relative high incomes.

In this year's report, we take a closer look at the distribution effects of a switch to market-based rents.

7.2 Effects of rent control

The rents paid by Swedish households under the utility value system are determined by a complicated process. Centralised negotiations between the Swedish Union of Tenants and the Swedish Property Federation set the general level, and the exact rent for a given property is then determined locally, with the option of judicial

review. Since 2006, the parties have also been able to agree on rents in new builds which exceed the utility value (known as presumption rates). This option is exercised for around a third of all new homes.²

One obvious effect of this regulated system is that rents for attractive properties have not been so sensitive to supply and demand as they would have been had rents been set more freely. Despite the acute shortage of homes in our major cities, rents have risen relatively modestly and at roughly the same rate regardless of the state of the market. The differences between attractive and less attractive locations are also relatively small. Between 2003 and 2014, the average rent per square metre according to Statistics Sweden's rent survey increased by 33 per cent in Greater Stockholm, barely more than in municipalities with less than 75,000 inhabitants, where the increase was 29 per cent. These comparatively modest increases may be contrasted with the prices for tenant-owned units, which rose by 133 per cent from the beginning of 2005 to the end of 2014 according to the Vanguard HOXFLATSWE index. Translated into interest costs for a fully mortgaged tenant-owned unit, this equates to an increase of 74 per cent, more than double the rise in rents in the same period.³

For most homes in big cities, it is therefore difficult, if not impossible, to take a new first-hand tenancy without direct contact with a landlord, money under the table or a long time in the queue. Figure 7.1 shows the change in average queueing time for households in Greater Stockholm allocated flats from the regular stock through the Housing Agency. The queueing time has varied depending on the state of the market, and is now longer than ever before, averaging just over 10 years in the outer suburbs and 17 years in the city centre in 2016.

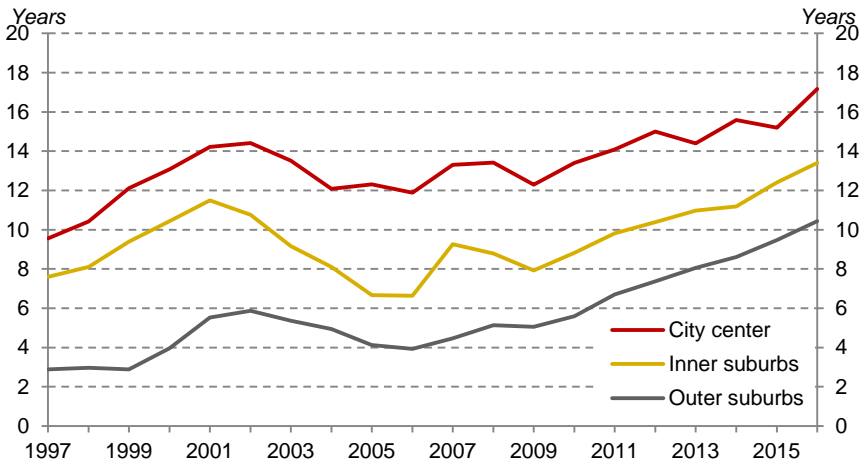
The number of regular homes allocated from the stock (i.e. excluding new builds and special-purpose accommodation) has also decreased as the market has become more and more overheated, with just 3,390 allocated in 2016, or approx. one per cent of the total stock of rental properties (Figure 7.2). Then there is the allocation of

² See report from the rental property enquiry (SOU 2012:88) for a more detailed description of the system.

³ Assuming a 100% mortgage at 10-year mortgage interest of 4.85 per cent in 2005 and 3.62 per cent in 2014 (source: SBAB). Although the interest on most housing loans is fixed for less than ten years, it is still relevant to assume a long-term rate of interest because a home has to be financed throughout its life and the long-term rate is approximately equal to the geometric average of expected short-term rates.

newly-built homes, which has increased with construction in general in recent years. A total of 1,551 new builds were allocated in 2016. Here, the queuing times are shorter, but they have also risen, averaging 9 years in the centre of Stockholm and 7.4 years in the suburbs in 2016. Apart from normal homes, the authorities also allocate student accommodation and other types of special-purpose housing. A total of 11,834 units were allocated in 2016. This figure may be compared with the total of 342,000 rented apartments in Stockholm in 2014 (according to Statistics Sweden’s housing statistics). So, if we include special-purpose accommodation, just 3.5 per cent the housing stock passed through the Housing Agency. According to calculations based on panel data for Swedish households for the years 1999–2007, about 20 per cent of tenant households move each year, which would imply that the Housing Agency in Stockholm handles around 15–20 per cent of all those who move.⁴

Figure 7.1 Average queuing time for allocated rental units in Greater Stockholm



Note: The figures refer to normal homes, not new builds.

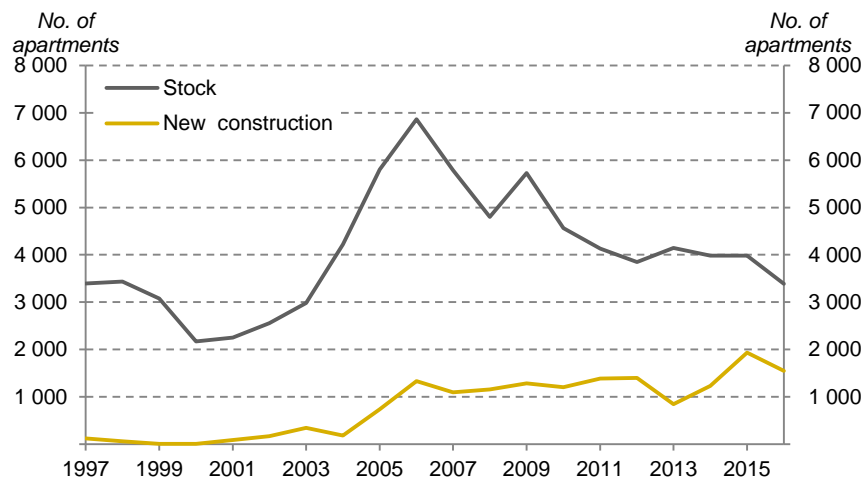
Source: Stockholm Housing Agency

The lack of mobility in the housing market creates problems both for those who are already in the market but cannot change their home

⁴ Our thanks to Thomas Jansson at the Riksbank, who made this calculation from LINDA data. The figure includes all cases where at least one adult in the household changed their registered address for census purposes.

according to their preferences, and for those who are not able to obtain a regular rental contract and are then forced to choose between insecure sub-lets, heavily mortgaged ownership, staying with their parents or not moving to an attractive area. Research as shown, for example, that the welfare effects of mis-allocation of a given housing stock can be considerable (see Glaeser and Luttmer (2003) for the USA and Lyytikäinen (2008) for Finland), that households are less mobile the more tightly the rental market is regulated (see Munch and Svarer (2002) for Denmark), and that unemployed people are less likely to find jobs elsewhere the more tightly regulated their own rental market is (see Svarer et al. (2005) for Denmark).

Figure 7.2 Number of allocated apartments in Greater Stockholm



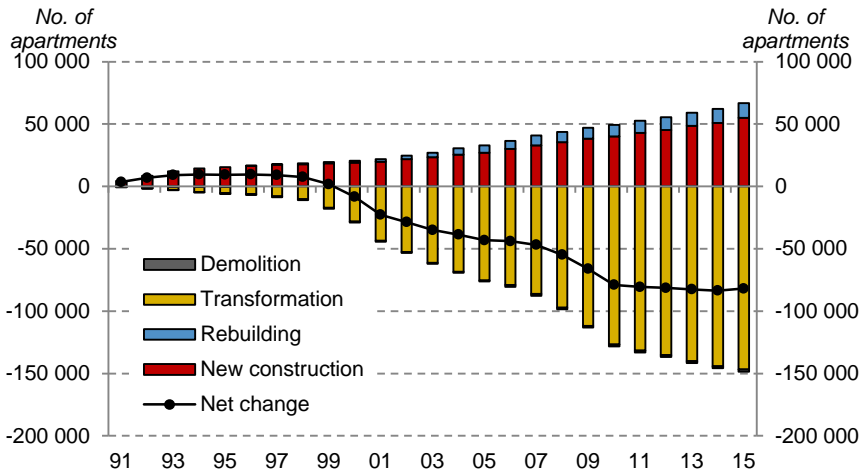
Note: The figures relate to normal homes, i.e. excluding special-purpose accommodation.

Source: Stockholm Housing Agency.

One effect of the difficulty for outsiders to get into the rental market in our big cities is that the demand has turned towards tenant-owned units instead. Combined with a tax system which favours home ownership, particularly on a tenant-owned basis, this has resulted in a wholesale switch from rented to tenant-owned units. As can be seen from Figure 7.3, 147,000 apartments in Greater Stockholm changed from rental to tenant-ownership between 1991 and 2015. As no more than 67,000 new apartments came onto the market through new building or conversion, the stock of rented accommodation decreased by 82,000, or around a quarter of the total number of apartments. 2015 was the first year since 1996 when more new

apartments were built than were turned into tenant-owned units. As a consequence of this development, tenant-owned units are now the commonest form of housing in Greater Stockholm, where 39 per cent of all homes are tenant-owned, 36 per cent are rented and 25 per cent are owner-occupied. In the country as a whole, where single-family houses are more usual, the switch to tenant-ownership has been slower, and the proportion of tenant-owned units is just 23 per cent, compared to 36 per cent rented and 41 per cent owner-occupied.

Figure 7.3 Change in the number of rented homes in Greater Stockholm since 1991



Source: National Board of Housing, Building and Planning.

It is therefore clear that the system of setting rents has prevented fluctuations in the balance of supply and demand from feeding through into rents. Instead, imbalances have been reflected in longer queueing times and rising tenant-ownership prices. Utility value rents in particular have under-valued the implications of the situation. We can see from Figure 7.1 that queueing times are now longer in more attractive locations, although they have increased in all areas as the market has become more and more overheated. In 2016, the average queueing time for existing apartments to be allocated was 17.2 years in the centre of Stockholm, as against 5.7 years in Södertälje and 5.9 years in Sigtuna. We will examine the spatial structure of rents in more detail later.

Given the major problems created by the current regulated system of rent-setting, there is an urgent need to examine ways of dismantling it. Over the years, many economists have presented concrete proposals for how this might be done in practice and what might replace the present system. The issues discussed include the pace of reform, protection for existing tenants, the difference between new builds and existing homes, and a possible special tax on capital gains to property owners. An important question concerns the ground rules which should govern a future rental market. What type of contract should be used, and is there a need for special laws and regulations? These issues were analysed by the rental property enquiry, whose report (SOU 2012:88) presented a number of suggested measures for both the short and the long term.⁵ We will not go into these issues here but limit ourselves to analysing one key aspect, which is how the distribution of spending power between different groups would be affected by a change to market-based rents.

7.3 Basis of the study

In a background paper for this year's report, Englund and Persson (2017) examine how more market-conformant rents would affect spending power in different households. In the interests of clarity, they study the effects of an intended immediate switch to market rents. The calculations take no account of the changes that this sort of reform would bring about, such as households changing from a larger to a smaller apartment or vice versa, from one area to another or from a heavily mortgaged tenant-owner property to rented housing. The study uses Statistics Sweden's micro-simulation model FASIT (Distribution analysis system for incomes and transfers) for the 2014 income year. This model is based on detailed data on income and tax and contribution rules for a stratified random sample of households. Our study is limited to the most overheated housing market, Stockholm, and uses data for some 135,000 households in Greater Stockholm, 44,000 of them living in rental units. Using details of census registration for each household, which is linked to the Register of Dwellings (Lägenhetsregister), it is possible to identify

⁵ See also analyses and proposed reforms from Andersson and Söderberg (2013), Andersson (2016), Housing Crisis Committee (2014), Lindbeck (2016) et al.

whether the members of a household are recorded against a rental unit. However, we cannot determine whether the property has been let directly or sub-let. The Register of Dwellings and FASIT also contain details of the size of the apartment measured in number of rooms and square metres, but not the rent. The rent therefore has to be imputed, which is done with the aid of data on apartments allocated by the Housing Agency. For every tenant household in the database, the study then compares the imputed utility value rent with an estimated market rent, which is assumed to equate to the housing cost for a tenant-owned unit of the same size and location as the rented property. The housing cost is calculated from the selling price and Housing Agency charge for sold tenant-owned units.

Some base data on households in the FASIT model can be seen from Table 7.1, where households are broken down by size and number of occupants. Almost 40 per cent are single-person households, while families with children make up less than a quarter of all households. The category of 'Other households', which includes households with grown-up children, is however relatively large. The proportion of people renting is almost double among households with just one adult, compared to households with two adults with or without children. Within all categories of household, those renting have significantly lower incomes than those who own their homes. In relative terms, the difference is greatest among families with children and two adults, where household income averages just 57 per cent of the income for owner-occupiers.

Table 7.1 Household characteristics

	Per cent of tenants	Mean income, tenants	Mean income, others	Per cent share of all households
One adult, no children	37.9	221,687	315,541	39.7
Two adults, no children	23.1	470,268	700,375	19.1
One adult with children	44.7	274,878	439,313	5.1
Two adults with children	21.4	496,998	868,625	18.2
Other household types	37.0	549,784	863,323	17.9
Total	32.3	360,104	612,127	100.0

Note: The table is based on the FASIT database and relates to households in Greater Stockholm. Income refers to disposable annual income.

7.4 Utility value rents

Utility value rents for the households are calculated using data on all apartments within Greater Stockholm allocated by the Housing Agency in 2014 and 2015.⁶ As we have noted, the allocated apartments account for only a small part, perhaps 15–20 per cent, of the total movement in the rental market. It is hard to judge how representative these apartments are of the whole stock of rental property. We can state, however, that the owners include both non-profit housing associations and large and small private property-owners.

Box 7.1 The statistical model

The study is based on estimates of two regression equations which express utility value rents and tenant-ownership costs ('market rent') as functions of the area, number of rooms, parish and year of sale of the apartment. Parish and year are represented by indicator variables which are given the value 1 or 0. Utility value rent is directly observed in data from the Housing Agency, while housing costs for tenant-owned units are calculated as the sum of the capital costs and charge to the authority, where the capital cost is calculated as the discount rate (2.7 or 3.15 per cent) multiplied by the price of the tenant-owned unit. The regression equation takes the same form for utility value rent and market rent, and is given by this non-linear equation in which the coefficients θ and λ express differences from linearity ($\theta = \lambda = 1$) and logarithmic linearity ($\theta = \lambda = 0$).

$$\frac{hyra_i^\theta - 1}{\theta} = a_0 + a_1 \frac{yta_i^\lambda - 1}{\lambda} + a_2 \frac{rum_i^\lambda - 1}{\lambda} + a_3 \frac{(yta_i \cdot rum_i)^\lambda - 1}{\lambda} +$$

$$\alpha \times församling_i + \beta \times församling_i \times yta_i + \gamma \times församling_i \times rum_i +$$

$$\delta \times \hat{a}_i + \varepsilon_i.$$

Detailed results, with estimates for the parameters θ , λ , a_0 , a_1 , a_2 , a_3 , α , β , γ and δ are presented in Englund and Persson (2017). Using estimated parameter values, utility value and market rents have been calculated for every apartment in the FASIT database and for the standard apartment in Table 7.2.

Source: Englund and Persson (2017).

⁶ Our thanks to Linda Lövgren of the Housing Agency who provided us with data.

The database contains details of the exact address, number of rooms, rent for each apartment and type of dwelling, e.g. student accommodation, and whether they are new builds or older properties. There are also details of queueing time for the household that was allocated the apartment. The statistical analysis is based on existing ‘normal’ apartments, so-called succession rents, giving a total of 7,530 observations. These are used to estimate a ‘Box-Cox’ model, which expresses the rent as a non-linear function of area, size, parish and year of allocation.^{7,8} See Box 7.1 for a formal presentation of the model. The estimated model is then used to calculate rents for every single tenant household in the FASIT model as a function of area, number of rooms and parish. The results, in the form of rents for a three-room standard apartment in the different parishes in 2014, are presented in the first column in Table 7.2. The figures for the individual parishes should be interpreted with a certain caution as the parish is a crude measure of location and the number of observations is quite small in some parishes. With this reservation in mind, we can see that the utility value system also gives rise to clearly differentiated rents, with the highest rents in attractive inner-city parishes. According to the estimated equation, the average rent for a 2 bedroom apartment in central Stockholm was 48 per cent more than for an equivalent apartment in an average southern suburb in 2014. The parish with the highest level of rents (Engelbrekt) had rents more than double those in the parish with the lowest rents (Bro). However, this probably overstates the true difference because of factors not included in the estimated model and purely random elements. A more robust measure of the spread is the difference between the 25th and 75th percentiles, which was 34 per cent.

Table 7.2 Estimated utility value and market rents for a 2 bedroom apartment

	Utility value rent	Market rent	Difference, %
<i>City centre</i>	10,947	16,754	54.3
Domkyrkoförs.+Joh:s+Adolf Fredrik	10,525	17,293	64.3
Engelbrekt	12,765	16,485	29.1
Gustav Vasa + Matteus	11,735	17,414	48.4

⁷ Some parishes have been combined because of a small number of observations.

⁸ See Englund and Persson (2017) for a more detailed description of the econometric model. They test and discard the hypotheses that the rent is best explained by a linear or non-linear model. The econometric analysis is based on joint work with Herman Donner.

Hedvig Eleonora + Oscar	10,180	17,708	73.9
Högalid	9,501	16,371	72.3
Katarina	10,130	16,546	63.3
Kungsholm + Västern + Essinge	12,096	16,340	35.1
Maria Magdalena	10,459	16,572	58.4
Sofia	11,137	16,055	44.2
<i>Inner suburbs</i>	<i>9,088</i>	<i>12,094</i>	<i>34.3</i>
Lidingö	9,013	11,467	27.2
Solna	7,937	12,138	52.9
Sundbyberg	10,027	12,240	22.1
Täby + Danderyd	10,261	10,713	4.4
Bromma	9,331	11,790	26.4
Västerled	10,366	13,864	33.7
Hägersten	9,719	13,486	38.8
Enskede-Årsta	8,282	12,377	49.4
Nacka + Boo	8,500	11,737	38.1
Skarpnäck	7,524	12,160	61.6
Brännkyrka	9,012	11,063	22.8
<i>Northern suburbs</i>	<i>7,839</i>	<i>9,226</i>	<i>18.9</i>
Hammarby + Fresta	7,497	8,902	18.7
Husby-Ärlinghundra+Valsta	8,562	8,255	-3.6
Sigtuna	7,831	9,484	21.1
Sollentuna	8,788	9,857	12.2
Vallentuna	9,307	9,114	-2.1
Österåker-Östra Ryd+ Vaxholm	7,533	9,164	21.7
Bro	6,020	8,168	35.7
Hässelby	7,080	9,716	37.2
Järfälla	7,875	9,351	18.7
Spånga-Kista	7,297	9,488	30.0
Vällingby	8,440	9,989	18.4
<i>Southern suburbs</i>	<i>7,380</i>	<i>9,522</i>	<i>29.9</i>
Botkyrka + Grödinge	6,383	8,978	40.7
Flemingsberg	6,493	9,195	41.6
Farsta	7,745	10,523	35.9
Huddinge	7,471	9,920	32.8
Gustavsberg-Ingarö	7,897	10,308	30.5
Skärholmen	6,667	9,734	46.0
Södertälje + Östertälje	7,314	8,036	9.9
S:t Mikael	6,892	10,126	46.9
Trångsund-Skogås	7,606	8,642	13.6
Vantör	7,499	10,231	36.4
Värmdö-Djurö	7,924	9,614	21.3
Österhaninge	8,679	8,963	3.3

Note: The rents are based on the estimated model applied to the average area for an apartment with 3 rooms and kitchen. The market rent is estimated for a real discount rate of 2.7 per cent.

7.5 Market rents

How can we judge where rents would end up if utility value rents were replaced with more market-conformant rents? The most obvious thing is to look at those parts of the housing market that already have freer price-setting today, i.e. the markets for sub-letting and for tenant-owned units. These markets would provide a good indication of where rents could end up after de-regulation if direct tenancies were a near-substitute for sub-letting or tenant-ownership. It is debatable whether this is the case in practice. One difference from sub-letting is that this is typically for short periods and so does not offer any permanent dwelling. The difference from a tenant-owned property is the opposite; that ownership is not especially attractive for mobile households because the transaction costs of purchase and sale are high and the price risks are considerable. Tenant-owned units are also only available to households with financial resources of their own or good creditworthiness. Information from both of these markets therefore needs to be interpreted with caution.

In general, we may expect housing costs in unregulated market segments to be slightly higher than the level of rents that would be established in a deregulated market. The reason is that some of the households currently paying utility value rents would choose a smaller home if the general level of rents were to rise. However, it is hard to comment on the scale of this effect; see Englund and Persson (2017) for a more detailed discussion.

The sub-letting market has been studied by the National Board of Housing, Building and Planning (2015). Following an amendment to the law in 2013, the owner of a tenant-owned unit is now allowed to sub-let at a rent which not only covers charges to the Agency but also covers capital costs of up to four per cent of the market value of the tenant-owned unit. This has to be regarded as a relatively high real rate of interest, so rents from sub-letting tenant-owned properties cannot be presumed to be market-conformant after the amendment. This supposition is supported by the study by the National Board of Housing, Building and Planning which is based on advertised rents from 'Blocket' in the period 2009–2015; between 33,000 and 43,000 ads per year. The Board estimates that this accounts for 20–40 per cent of the total sub-letting market. The

advertised rents for sub-letting are well above the utility value rents; see Table 7.3. The relative difference is greater in Stockholm than in Gothenburg and greater for large than for small apartments, and also greater for tenant-owned units than rented housing. The rent for a three-room tenant-owned apartment in Greater Stockholm was 81 per cent above the utility value level, while a one-room apartment in Gothenburg was 33 per cent above. The study by the National Board of Housing, Building and Planning also compares with ‘cost-based’ rents calculated from tenant-ownership prices plus 4 per cent interest. Interestingly enough, the rents for sub-letting are a little below this level, which suggests that a 4 per cent real discount rate may be slightly more than the discount rate factored into tenant-ownership prices. We will return to the discount rate below.

7.3 Monthly rents for sub-letting, Greater Stockholm and Gothenburg, 2014

	Utility value	Sublet, rental	Sublet, tenant-owned	Cost-based rent
<i>Greater Stockholm</i>				
1 room + kitchen	4,493	6,220	7,133	7,644
2 rooms + kitchen	5,788	8,695	10,172	11,208
3 rooms + kitchen	6,933	10,507	12,583	14,635
<i>Gothenburg</i>				
1 rooms + kitchen	4,165	4,838	5,544	7,126
2 rooms + kitchen	5,354	7,184	8,472	10,700
3 rooms + kitchen	6,402	8,748	10,157	13,957

Source: SCB (Rents for apartments) and National Board of Housing, Building and Planning (2015), Tables 5, 6 and 7.

Englund and Persson (2017) use the prices of tenant-owned units to calculate probable market rents. Their report is based on all sales of tenant-owned units in Greater Stockholm in 2014 and 2015, a total of 67,000 observations (taken from Valueguard). The idea is that the market price of a tenant-owned unit is determined by the discounted present value of the residential services that the home represents (the implicit rent) minus the discounted present value of future charges payable to the cooperative. The housing costs will then be equal to the real capital cost (discount rate times price) plus charges. The relationship between housing cost, location and size is estimated by regression analysis, using the same kind of non-linear equation as for

utility value rents. One practical problem is that the discount rate is hard to judge *a priori* because it depends on the cost of both equity and borrowed capital, and on an expected future increase in value. The report ‘solves’ this problem by assuming that the rents for new builds provided by the Housing Agency are market-conformant. The idea is that the possibility of presumption rates guarantees market-conformance in new builds. However, this is somewhat contradicted by the fact that the average queueing time for allocated new apartments in 2014 was as much as five years.

In order to calibrate against rents for new builds, a series of tenant-ownership models is estimated, based on different discount rates. The estimated models are used to predict the rents for new-build apartments provided by the Housing Agency. The models are then compared in terms of how well they predict these rents. According to two different criteria, we obtain discount rates of 2.7 (lowest root-squared error) and 3.15 per cent (lowest median of the absolute value of the forecasting error). Both of these discount rates are then below the 4 per cent which is the ceiling for a permissible sub-let. Given that rents for sub-lets are also a little below this ceiling, interest of around 3 per cent seems reasonable. In this discussion, we will use the lower discount rate, 2.7 per cent, which gives slightly lower market rents than a rate of 3.15 per cent. The choice of the lower discount rate can also be accounted for by the fact that tenant-owned housing costs are likely to represent a slight over-estimate of the unregulated market rent.

The calculated market rents based on the lower discount rate for a standard apartment in different parishes are shown in the second column in Table 7.2. When we interpret these figures and compare market rents with utility value rents, it is important to remember that the comparison is based on the assumption that a typical rented apartment of a certain size in a certain parish is equivalent to a typical tenant-owned unit of the same size in the same parish. The comparison breaks down if the two types of apartment are not in equally attractive parts of the parish or if they tend to differ in quality of maintenance, age or other factors which are not included in the model. Many tenant-owned units are the result of changes in the last decade, so it is possible that they are of generally higher quality than the apartments that have not changed.

With these reservations in mind, Table 7.2 shows that average monthly rents, unweighted across all parishes, increase from SEK 8,681 for a three-room apartment at utility value rents to SEK 11,618 at market rents, or by 33 per cent.⁹ The location factor is more systematically priced into market rents. All of the parishes in the centre of the city, with an average market rent of SEK 16,754, are well above all the other parishes. The inner suburbs, averaging SEK 12,094, are also consistently higher than more peripheral parishes, where the average is SEK 9,522 in the southern suburbs and SEK 9,226 in the north. In the city centre, the increase above utility values averages 53 per cent, as against 33 per cent in the inner suburbs, 29 per cent in the southern suburbs and 18 per cent in the northern suburbs. The geographical spread is also generally slightly wider than for the utility value rents. For market rents, the parish on the 75th percentile is 46 per cent higher than that on the 25th percentile, which contrasts with the difference of 35 per cent between the corresponding percentiles for utility value rents.

It is important to remember that we have been trying to estimate the level that market-based rents are likely to reach in the short term. As we have calibrated our model against the prevailing costs of tenant-owned housing, our ‘market rents’ reflect the general shortage of homes today. Higher rents would make it more attractive to build new, and when the balance of supply and demand has improved, market rents may be expected to fall back.

7.6 Distribution patterns

Abandoning the utility value system would have far-reaching effects on the housing market and the economy as a whole. When households are given genuine choice, the housing pattern will start to change. Young households which are now often forced to choose between tenant-ownership and sub-letting arrangements for their first home may choose to rent instead. Households now living in rental units that may be too big for their needs can more easily switch to a smaller property. All of these are efficiency gains, which is after all the purpose of a switch to market-based rents. Moreover,

⁹ The difference is of course down to the discount rate. At the higher discount rate, market rents come out 6–13 per cent higher than with the lower rate, with the biggest difference for attractive inner-city parishes where the price level is highest relative to the charge.

increased rents in themselves bring a tendency of substitution towards smaller and cheaper apartments or home ownership. However, moving takes time, so it is important to study the direct effect of a switch to market rents.

It is obvious that rent increases averaging 33 per cent by to our calculations would make a big hole in many household budgets. As Table 7.4 shows, today's rent averages just over 24 per cent of a tenant household's disposable income. With market rents, this would rise to around 31 per cent. The increase would be particularly big for one-person households, where the proportion would rise from 35 to 45 per cent. For families with children and two adults, on the other hand, the increase would be more modest, from 21 to 26 per cent.

Table 7.4 Income, utility value rent and market rent in 2014 for different groups of tenants in Greater Stockholm

	Disposable income	Utility value rent	Market rent
All households	360,104	87,796 (24.4%)	111,796 (31.1%)
One adult, no children	221,687	77,496 (35.0%)	99,979 (45.1%)
Two adults, no children	470,268	94,555 (20.1%)	120,801 (25.7%)
One adult with children	274,878	94,465 (34.4%)	117,852 (42.9%)
Two adults with children	496,998	104,461 (21.0%)	130,636 (26.3%)
Other household types	549,784	94,521 (17.2%)	119,397 (21.7%)

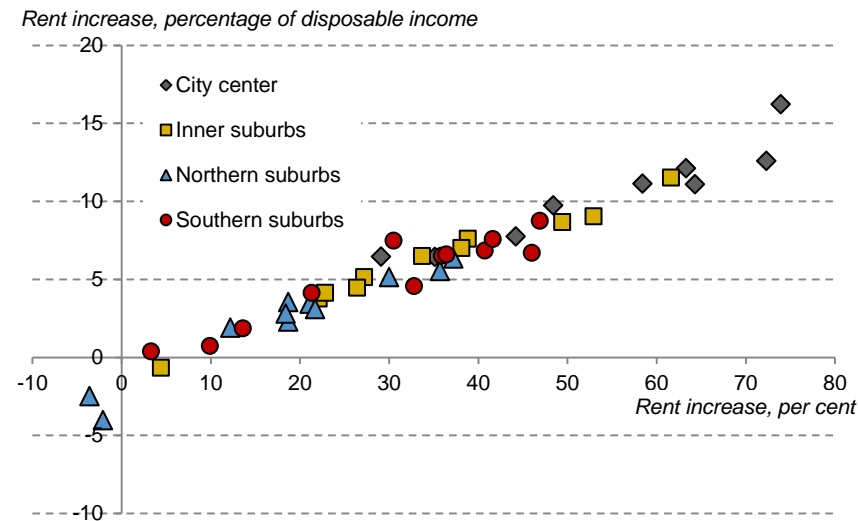
Note: Figures in brackets are the percentage of disposable income.

Source: FASIT database.

The geographical spread is illustrated in Figure 7.4, where we have plotted the rent increase for a standard three-room apartment (from Table 7.2) against the simulated average increase in rental costs as a proportion of disposable income in the different parishes. As expected, there is a close correlation which reflects the share of the household budget: a further 10 per cent increase in rent equates to approx. 2 per cent of income. In the parishes where rents rise by 20 per cent, the households then lose around 4 per cent of their

income, compared to almost 10 per cent in the parishes where the standard rent rises by 50 per cent.

Figure 7.4 Rent increase for a standard apartment, and average increase in rental costs as percentage of disposable income



Source: Table 7.2 and FASIT database.

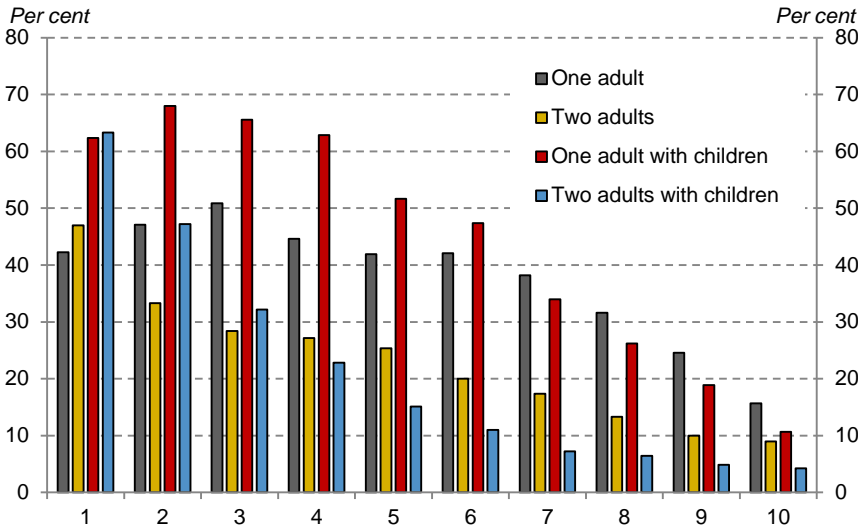
Our simulations using the FASIT model have been based on the assumption of unchanged living patterns. They take no account of the chances for households to move to a different home. As the choices would increase, this is a limitation which we need to keep in mind. So we are not merely disregarding the usual substitution effect that accompanies a price increase, which implies that the effect can be mitigated by reduced consumption of the product that has become more expensive (in this case, by switching to a smaller and cheaper home). We are also ignoring that fact that many households, including those that currently own their homes, could gain from the reform by exploiting the new breadth of choice and opting for an apartment better suited to their needs. At the same time, we must remember that the costs of moving are high in the housing market so we should not perhaps expect such a rapid adjustment to altered conditions. Our static calculations pick up the short-term effects of an immediate reform, but say less about the long-term effects when various adjustments take effect.

The way in which a rent increase will be distributed across different households will depend on a combination of factors: (i) incomes for the households living in rented homes and so directly affected by a rent increase; (ii) how rental costs co-vary with tenant households' income; (iii) how the proportion of tenant households in a given area co-varies with the size of the rent increase; and (iv) how tenant households' income co-varies with the rent increase. We will now look at these factors one by one.

Firstly, it is well-known that, the higher their income, the more likely households are to own their homes. This is confirmed by Table 7.1. Tenant households have consistently lower incomes, averaging just 59 per cent of owner-occupiers' income. This difference is partly down to the fact that they are smaller, but there are also big differences within groups of households with the same numbers of adults and children. Among households with two adults with children, tenant households' income averages just 57 per cent of that of other households, while the corresponding proportion for single-person households is 70 per cent.

Within each group of households, there is also a clear correlation between income and the proportion of owner-occupiers. In Figure 7.5, households within each category have been sorted into decile groups according to their disposable income. In all four groups of households, the proportion of tenant households drops more or less continuously with income, from around a half or more in the lower deciles to about a tenth in the highest decile. The difference is especially pronounced among families with children. Among households with two adults and children, the proportion of tenancies is 47 per cent in decile 2, but only 4 per cent in decile 9. An increased rent therefore affects a higher proportion of households with low incomes compared to households with higher incomes.

Figure 7.5 Proportion of tenants per income decile



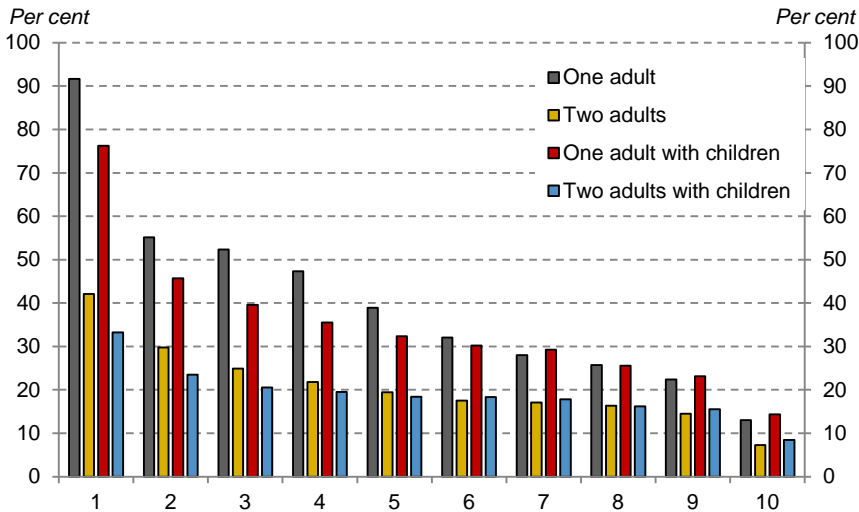
Source: Englund and Persson (2017) and FASIT database.

Secondly, housing costs take up more of the budget for households with low incomes. The income elasticity of demand for housing is less than one. A proportional rent increase therefore accounts for a larger proportion of income for households on low incomes. This pattern can clearly be seen among the households in our data, as shown in Figure 7.6.¹⁰ The income profile slopes most steeply among single-person households, where rent equates to 55 per cent of disposable income in decile 2 but only 22 per cent in decile 9.¹¹ There is less difference among households with two adults and children. Here, rent accounts for 23 per cent of income in decile 2 and 15 per cent in decile 9.

¹⁰ Note that the decile breakdown is the same in Figures 7.6 and 7.5 and in the figures below. The number of households thus differs from one decile to another in Figures 7.6, 7.9, 7.10 and 7.11 (but not in Figure 7.5).

¹¹ As we are using data for a single year's income, it makes sense to disregard deciles 1 and 10 where much of the income may be transient.

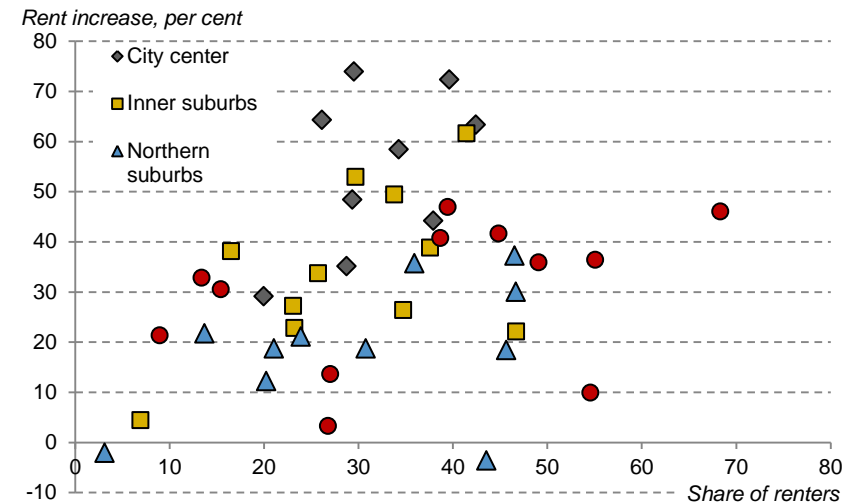
Figure 7.6 Housing costs with utility value rents as a percentage of disposable income per income decile



Source: Englund and Persson (2017) and FASIT database.

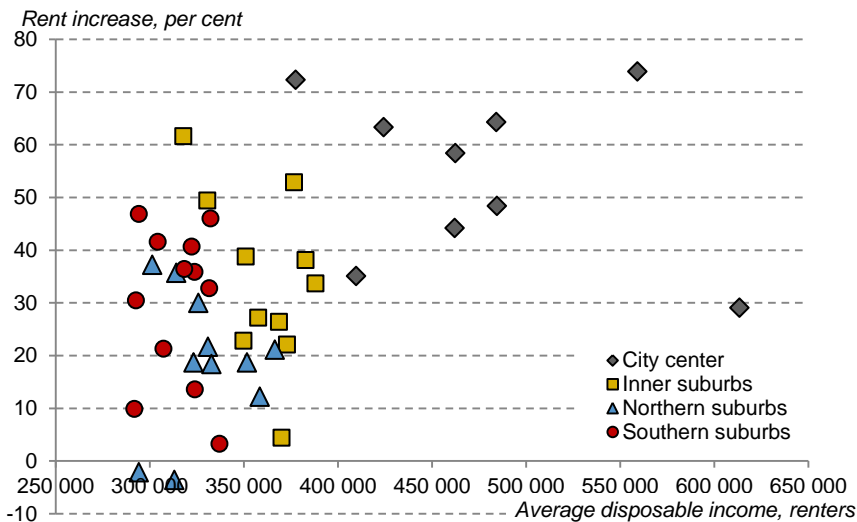
Thirdly, the distribution pattern is also affected by the way in which tenant households are distributed relative to the size of the rent increase. In Figure 7.7, we have plotted the proportion of tenant households against the percentage rent increase (calculated for the standard apartment in Table 7.2) in all parishes. As we can see, the correlation is slightly positive. So there tends to be a higher proportion of tenant households in the parishes where rents rise the most. This correlation thus confirms the tendency for households with low incomes to be affected more in relative terms by a switch to market rents.

Figure 7.7 Proportion of tenants and rent increase



Source: Table 7.2 and FASIT database.

Figure 7.8 Mean disposable income for tenants and increased rent

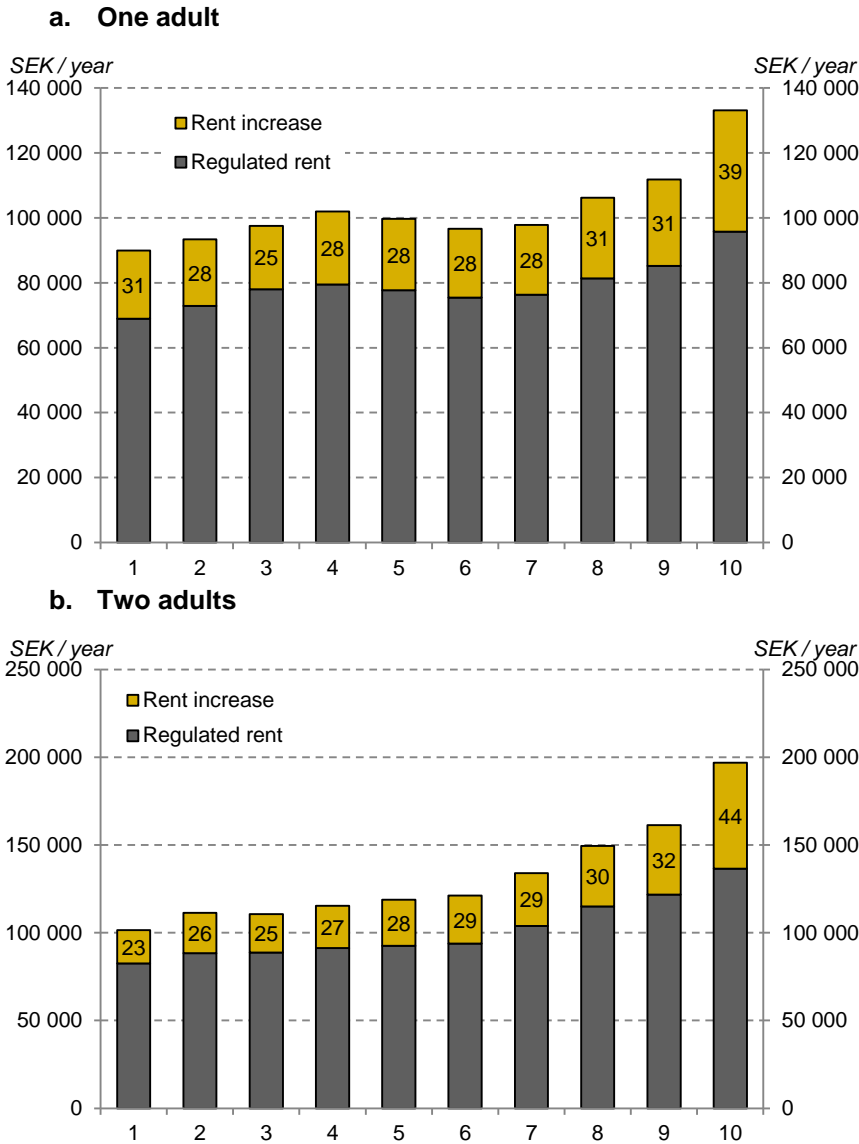


Source: Table 7.2 and FASIT database.

Fourthly, the distribution pattern reflects the relationship between the tenant households' income level and the size of the rent increase. We can see from Figure 7.8 that there is a weak positive correlation. The gap between utility value rents and market rents tends to be greater in the parishes where incomes are higher. This correlation to some extent counteracts the tendency for households in low incomes to be affected the most.

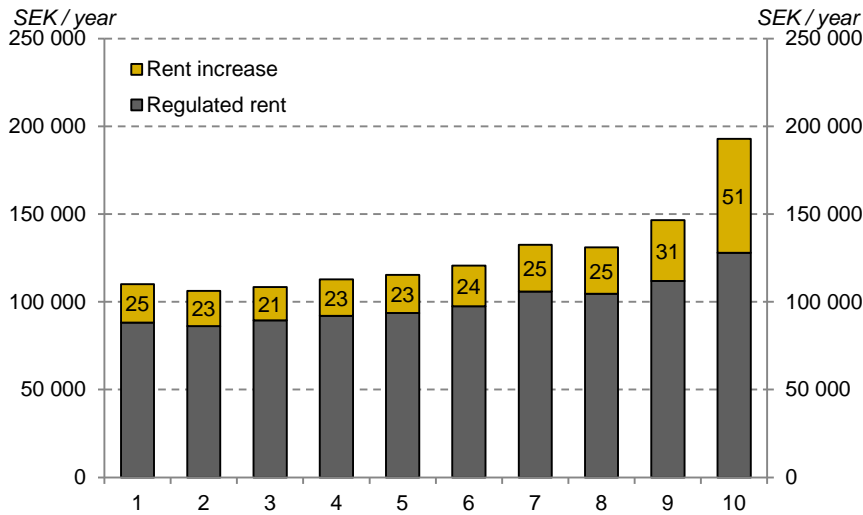
In view of this, it is not surprising that the simulations using the FASIT model which we will now describe show that the rent increases make up a larger proportion of income in relative terms in lower income groups. Before we look at effects relative to income, the effects in kronor are shown in Figure 7.9. The bars in the chart show the average rental costs, where the dark grey lower part represents the utility value rent and the whole bar represents the market rent. The lighter upper part of the bar is then the difference in rent. The chart confirms that there is not such a big difference in housing costs between high and low earners. Among single-person households, the difference in utility value rent between deciles 2 and 9 is no more than 17 per cent even though the difference in income is 188 per cent. For the category where the difference is greatest, two adults with children, the corresponding difference in rental costs is 72 per cent, against an income difference of 160 per cent. The increase in kronor terms is thus larger in higher income bands. Among single-person households, rental costs in decile 9 increase by SEK 27,000 per year, or 31 per cent of the rental costs. This may be compared with SEK 21,000 (28 per cent) in decile 2. Among households with two adults and children, the corresponding increase is SEK 61,000 (52 per cent) in decile 9, compared with SEK 21,000 (22 per cent) in decile 2. In this sense, therefore, high earners are affected slightly more than low earners by a switch to market rents.

Figure 7.9 a–d. Annual utility value rent and market rent per income decile

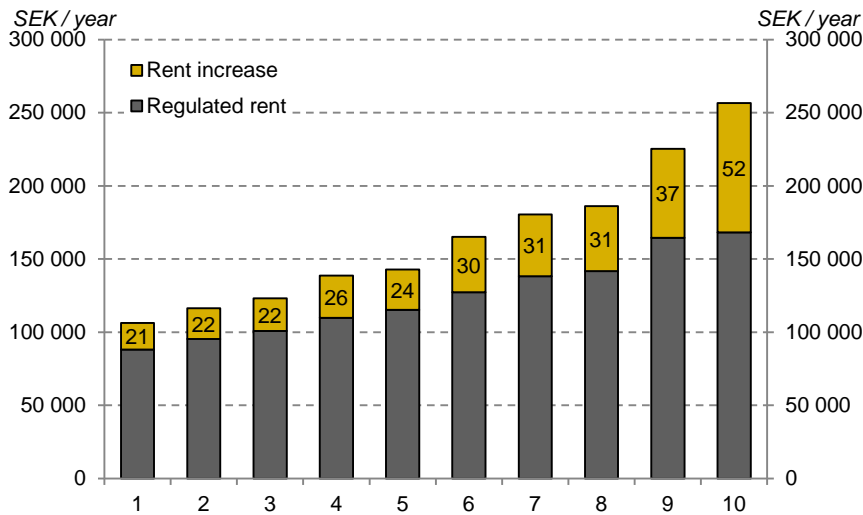


Note: The sum of the dark and light areas, i.e. the full height of the bar, is the market rent. The figures inside the bars show the rent increase as a percentage the utility value rent within each decile group.
Source: Englund and Persson (2017) and FASIT database.

c. One adult with children



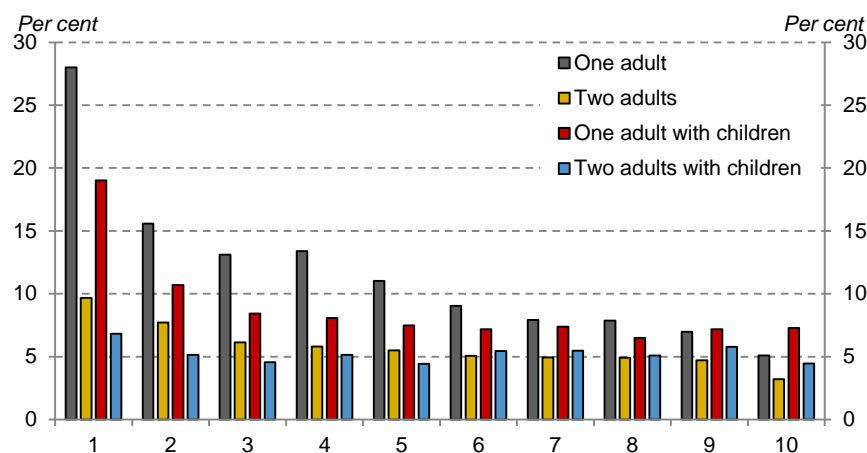
d. Two adults with children



Note: The sum of the dark and light areas, i.e. the full height of the bar, is the market rent. The figures show the rent increase as a percentage of the utility value rent within each decile group.
Source: Englund and Persson (2017) and FASIT database.

Finally, when we look at the size of the rent increase relative to income for the group of tenants in Figure 7.10, the distribution pattern is clear. The relative effect is greatest for households with one adult, where the rent increase averages 10.1 and 8.5 per cent of income for households without and with children, while the corresponding figures for households with two adults are 5.6 and 5.3 per cent respectively. The income profile is most pronounced among single-person households, where the rent increase amounts to 15.6 per cent of income in decile 2, as against 7.0 per cent in decile 9. Among households with two adults and children, on the other hand, there is no clear distribution profile. Here, in fact, the effect is slightly smaller in decile 2 (5.1 per cent) than in decile 9 (5.8 per cent). These figures represent the mean. Englund and Persson (2017) also report on the median effect within the different deciles, which is almost always slightly less than the mean effect. So the effect is slightly skewed, and within each decile, there is a small group of households with a relatively big increase in rent. However, the difference between the mean and the median is not so great, although the medians have a slightly different distribution profile. Among households with two adults and children, the median effect is slightly greater in decile 2, at 5.0 per cent, than in decile 9 where it is 3.9 per cent. However, the number of households with children living in rental units on high incomes is very small.

Figure 7.10 Rent increase as a percentage of disposable income, mean and median per income decile



Source: Englund and Persson (2017) and FASIT database.

All in all, therefore, we find that a switch from utility value rents to market-based rents would have the following effects:

- Housing costs increase for households in rental units, which have a lower average income than the average household.
- The percentage rent increase tends to be slightly greater the higher the household income.
- The rent increase as a proportion of disposable income tends to be lower the higher the household income. This is especially true of households with no children, whereas the effect is largely independent of income level among families with children.

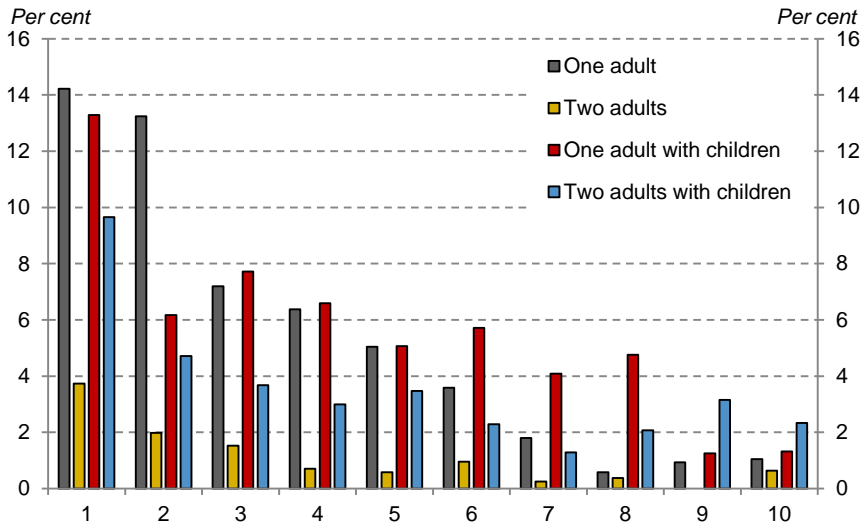
7.7 Rent increases, taxes and other contributions

In the short term, the introduction of market rents would transfer purchasing power from today's tenants to today's property-owners. The higher rents that would result from a switch to market rents, particularly during a transitional period, will also be capitalised in increased property values. In the medium term, higher rents and property prices will stimulate new building and so push rent levels down towards a long-term curve determined by construction costs and land values. In the longer term, however, there is reason to expect rising rents. In a big city such as Stockholm, access to centrally-located building land is limited, and while the region continues to grow, the price of land will therefore go up, leading to higher and higher rents, particularly in central locations. This fundamental trend cannot be checked by regulation except at the cost of an increasingly inefficient rental market.

There are basically two ways of limiting the short-term effects of deregulation on purchasing power and income. One is by gradual deregulation, e.g. by only allowing this to cover new rental contracts or by setting a ceiling on permitted rent increases. The second option is to limit the effect on the individual households through direct contributions. Rent increases and rising property values, some of which would accrue to non-profit housing associations, could also provide a basis for taxation to finance increased contributions.

The current housing allowances for families with children and the housing supplements for pensioners are means-tested, and cover part of the housing costs up to a ceiling. However, this cost ceiling is quite low. Less than 5 per cent of all households now have a utility value rent which is below the ceiling for further contributions. Even among households with low incomes, which are normally entitled to housing allowances or supplements, there is only a small minority that have such low rents that they would get a bigger contribution if rents were to rise (Figure 7.11). The proportion is greatest among single-person households, in practice pensioners, where 14 and 13 per cent of all tenant households in the two lowest deciles are below the rent ceiling. Among households with children and one adult, the corresponding figures are 13 and 6 per cent respectively. For other groups, the percentages are even smaller. With the same rules, the vast majority of households would therefore receive no compensation in the event of a switch to market rents. It could therefore make sense to combine deregulation of rents with a review of the rules on housing allowances.

Figure 7.11 Proportion of all tenant households with utility value rents above the highest housing costs eligible for housing allowances.



Source: FASIT database.

More generous housing allowances could be financed via a special tax on property-owners. With increasing profits, taxes on company profits and individuals' business activities could generate increased income for the State even with unchanged tax rules. We might also consider introducing a special property tax to encompass part of the one-off gain that today's property-owners would make from market-based rents. An advantage of such a one-off tax based on today's property value is that, unlike a tax on profits, it would not affect the profitability calculation for a new build. Such a tax will not therefore stand in the way of a move in the housing market in general, and in the rental market in particular, towards a long-term equilibrium.

7.8 Assessments and recommendations

Today's malfunctioning rental market mainly hits households that have not yet established themselves and households moving to cities with a distinct shortage of housing. Young people stay longer with their parents or sub-let for short periods, and when they get a first permanent home of their own, it is often a tenant-owned unit despite the financial risks that this may entail. The same difficulties face those who want to move to Stockholm or other big cities to take a new job. Rent control protects those who are already in the rental market at the expense of those outside. But even for those inside the market, the regulation creates problems. It does keep their rents down, but it also restricts their mobility and freedom of choice.

Rent control also creates macroeconomic problems. By restricting mobility in the labour market, it limits companies' opportunities to expand, with negative long-term consequences for growth and competitiveness. By directing demand towards the tenant-owned and ownership market, it will also help to increase household debt, with implications not just for the individual households but also for economic stability. All in all, therefore, there are good grounds for dismantling the current system for setting rents and moving towards market rents.

However, this cannot be done without considering the side-effects on the distribution of purchasing power and disposable income. Our static distribution calculation shows that a move to market rents would increase rents more for households in higher income bands, but that the increase would account for a larger proportion of

income for households on lower incomes. This is because the home is a necessity and housing costs make up a larger part of the budget, at least up to a certain income level, among households with lower incomes. A larger proportion of households on lower incomes also tend to rent their homes. There are several reasons for this. Renting is the natural form of occupation for at least three categories of household: those that have a short planning horizon and are likely to move home in the near future; those that have trouble financing home-ownership because they do not have money of their own and are not sufficiently creditworthy; and those that are happy to delegate maintenance and liability to a landlord. Renting is therefore most attractive to younger people and to households with lower incomes and less wealth. These are the households that are currently hit by the downside of rent control.

In a longer-term perspective, there is no real reason to believe that a switch to market rents would have a clearly regressive distribution profile. Allocation based on willingness to pay need not necessarily disadvantage households with low incomes compared to an allocation process based on queueing time, contacts and money under the table. In the short-term perspective, the situation is different. The direct effect with a given housing pattern has a clear bias towards increased costs for households on lower incomes. It is therefore natural to think of accompanying a switch to market rents with expanded housing allowances. At the same time, a rapid switch could bring one-off capital gains to property owners. A one-off tax on rental property could therefore help to finance increased housing allowances.

Finally, it is worth recalling once more that our discussion in this chapter takes a short-term perspective and is based on quite a crude statistical model with many potential sources of error. The model could be enhanced in many ways. The geographical representation could be made more fine-grained, e.g. by using postcode areas or coordinates. It could also take account of the age of the properties. It is also important not to stop with the short-term perspective but also to analyse the distribution effects when enough time has passed for households to adjust to market-based rents.

Appendix: Forecast evaluation

A.1 Forecasting errors and measures of precision

The outcome (y_t) is defined as the first published outcome for a given variable. If we let the forecast for the same variable be \hat{y}_t , we can define the forecasting error (e_t) as forecast minus outcome: $e_t = \hat{y}_t - y_t$. A positive forecasting error then means that the forecaster has over-estimated the true outcome.

The mean forecast error (MFE) is the arithmetic mean of the forecasting errors:

$$MFE = \frac{1}{T} \sum_{t=1}^T e_t$$

The mean absolute error (MAE) is the arithmetic mean of the absolute values of the forecasting errors:

$$MAE = \frac{1}{T} \sum_{t=1}^T |e_t|$$

The root mean squared error (RMSE) is the square root of the mean of the squared forecasting errors.

$$RMSE = \sqrt{\frac{1}{T} \sum_{t=1}^T e_t^2}$$

A.2 Results for forecasts produced 2010–2016

This section presents the same measures of precision (MAE and RMSE) and measures of systematic deviations (SE) that are used in the main text, but for the years 2010–2016. This is done in order to take account of the large forecasting errors arising out of the financial crisis of 2007–2008. The results for both the Government and the NIER are presented in Tables A1 and A2. Although the size of the forecasting errors is altered for both forecasters compared to when we analyse the years 2007–2016, this does not change the mutual

relationship between the Government's and the NIER's forecasts in terms of forecasting precision or over- and under-estimates.

Table A1 Mean forecast error (MFE) for forecasts produced 2010–2016

	GDP growth		Unemployment		Net lending		Structural net lending	
	Govt	NIER	Govt	NIER	Govt	NIER	Govt	NIER
t+0	-0.32	-0.22	0.03	0.03	-0.42	-0.37	-0.05	-0.03
t+1	0.31	-0.04	0.04	0.19	0.08	-0.29	0.60	0.27
t+2	1.17	0.59	-0.47	0.03	1.33	0.36	1.43	0.94
t+3	0.76	0.38	-1.16	-0.36	2.61	1.12	2.50	1.45

Source: Stockhammar (2017).

Table A2 Mean absolute error (MAE) and root mean squared error (RMSE) for forecasts produced from 2010–2016

	GDP growth		Unemployment		Net lending		Structural net lending	
	Govt	NIER	Govt	NIER	Govt	NIER	Govt	NIER
MAE								
t+0	0.75	0.58	0.19	0.20	0.64	0.49	0.62	0.43
t+1	0.84	0.83	0.47	0.51	1.10	1.11	0.90	0.87
t+2	1.40	1.14	0.69	0.57	1.75	1.27	1.48	1.19
t+3	1.02	1.13	1.25	0.66	2.73	1.50	2.50	1.52
RMSE								
t+0	1.05	0.86	0.26	0.27	0.82	0.67	0.75	0.52
t+1	1.16	1.10	0.63	0.67	1.28	1.24	1.11	1.02
t+2	1.68	1.35	0.92	0.84	2.16	1.54	1.76	1.52
t+3	1.17	1.34	1.49	0.83	3.22	1.77	2.76	1.88

Source: Stockhammar (2017).

A.3 Test for systematic over-and under-estimates

In order to examine whether the systematic under-estimates (measured in terms of SE) presented in the main text and in the preceding section are statistically significant, we use a t-test. The test used is two-tailed and the null hypothesis is that the mean forecasting error is equal to zero. The results are presented in Tables A3–A4 for

the period 2007–2016 and in Tables A5–A6 for the period 2010–2016.

Table A3 T-test for GDP growth and unemployment, 2007–2016

	GDP growth				Unemployment			
	t+0	t+1	t+2	t+3	t+0	t+1	t+2	t+3
<i>Government</i>								
MFE	0.09	0.73	1.17	0.28	0.05	0.04	-0.36	-0.77
Standard error	0.26	0.73	0.72	0.54	0.07	0.32	0.51	0.50
t-value	0.35	1.00	1.62	0.52	0.82	0.11	-0.71	-1.55
p-value	0.73	0.33	0.13	0.61	0.42	0.91	0.49	0.14
<i>NIER</i>								
MFE	0.14	0.70	0.91	-0.04	0.04	0.11	-0.16	-0.34
Standard error	0.17	0.48	0.54	0.36	0.04	0.20	0.33	0.30
t-value	0.85	1.47	1.68	-0.10	1.04	0.57	-0.48	-1.15
p-value	0.40	0.15	0.10	0.92	0.31	0.57	0.64	0.26

Note: The number of degrees of freedom varies between 19 for horizon t+0 and 13 for horizon t+3 for the Government's forecasts and between 39 (t+0) and 27 (t+3) for the NIER's forecasts. If the p-value is less than 0.05 the difference may be considered statistically significant.

Source: Stockhammar (2017) and own calculations.

Table A4 T-test for fiscal and structural net lending, 2007–2016

	Net lending				Structural net lending			
	t+0	t+1	t+2	t+3	t+0	t+1	t+2	t+3
<i>Government</i>								
MFE	-0.48	-0.04	1.27	2.34	-0.22	0.09	1.08	2.12
Standard error	0.18	0.43	0.57	0.55	0.16	0.28	0.25	0.32
t-value	-2.72	-0.10	2.22	4.23	-1.36	0.34	4.31	6.57
p-value	0.01	0.92	0.04	0.00	0.19	0.74	0.00	0.00
<i>NIER</i>								
MFE	-0.41	-0.33	0.36	0.86	-0.24	-0.20	0.42	1.32
Standard error	0.10	0.28	0.40	0.34	0.10	0.19	0.24	0.36
t-value	-3.92	-1.18	0.89	2.53	-2.45	-1.09	1.73	3.67
p-value	0.00	0.24	0.38	0.02	0.02	0.28	0.10	0.00

Note: The number of degrees of freedom varies between 19 for horizon t+0 and 13 for horizon t+3 for the Government's forecasts and between 39 (t+0) and 27 (t+3) for the NIER's forecasts. If the p-value is less than 0.05 the difference may be considered statistically significant.

Source: Stockhammar (2017) and own calculations.

Table A5 T-test for GDP growth and unemployment, 2010–2016

	GDP growth				Unemployment			
	t+0	t+1	t+2	t+3	t+0	t+1	t+2	t+3
<i>Government</i>								
MFE	-0.32	0.31	1.17	0.76	0.03	0.04	-0.47	-1.16
Standard error	0.28	0.34	0.40	0.34	0.07	0.19	0.26	0.36
t-value	-1.15	0.91	2.89	2.24	0.45	0.20	-1.77	-3.25
p-value	0.27	0.38	0.02	0.06	0.66	0.85	0.11	0.01
<i>NIER</i>								
MFE	-0.24	0.08	0.66	0.22	0.03	0.13	-0.11	-0.48
Standard error	0.16	0.20	0.28	0.29	0.05	0.12	0.13	0.16
t-value	-1.51	0.38	2.37	0.73	0.59	1.09	-0.82	-3.08
p-value	0.14	0.71	0.03	0.47	0.56	0.29	0.42	0.01

Note: The number of degrees of freedom varies between 13 for horizon t+0 and 7 for horizon t+3 for the Government's forecasts and between 27 (t+0) and 15 (t+3) for the NIER's forecasts. If the p-value is less than 0.05 the difference may be considered statistically significant.

Source: Stockhammar (2017) and own calculations.

Table A6 T-test for fiscal and structural net lending, 2010–2016

	Net lending				Structural net lending			
	t+0	t+1	t+2	t+3	t+0	t+1	t+2	t+3
<i>Government</i>								
MFE	-0.42	0.08	1.33	2.61	-0.05	0.60	1.43	2.50
Standard error	0.20	0.39	0.56	0.71	0.21	0.28	0.34	0.45
t-value	-2.15	0.21	2.36	3.66	-0.26	2.13	4.20	5.59
p-value	0.05	0.84	0.04	0.01	0.80	0.06	0.00	0.00
<i>NIER</i>								
MFE	-0.35	-0.21	0.50	1.21	-0.03	0.28	0.97	1.45
Standard error	0.11	0.24	0.32	0.35	0.10	0.21	0.29	0.36
t-value	-3.30	-0.88	1.58	3.47	-0.31	1.33	3.38	4.02
p-value	0.00	0.39	0.13	0.00	0.76	0.20	0.00	0.00

Note: The number of degrees of freedom varies between 13 for horizon t+0 and 7 for horizon t+3 for the Government's forecasts and between 27 (t+0) and 15 (t+3) for the NIER's forecasts. If the p-value is less than 0.05 the difference may be considered statistically significant.

Source: Stockhammar (2017) and own calculations.

A.4 Differences in precision between Government and NIER forecasts

To examine whether there are significant differences between the Government's and the NIER's forecasting precision, we use the test proposed in Diebold and Mariano (1995). First, we take the absolute value of the different forecasters' forecasting errors. We then form a series (d_t) of differences as per:

$$d_t = |e_t|_{reg} - |e_t|_{KI}$$

Then we use the test statistic:¹

$$DM = \frac{\bar{d}}{\sqrt{\frac{\hat{\gamma}_d(0) + 2 \sum_{k=1}^{h-1} \hat{\gamma}_d(k)}{T}}}$$

where $\hat{\gamma}_d(k)$ is the estimated auto-covariance function for the difference series (d_t) at lag k , h is the forecast horizon and \bar{d} is the mean of the series, i.e. the average difference in forecasting precision (measured in terms of the absolute error). The test statistic (DM) is compared with the quartiles for the t-distribution (two-tailed test). The results are presented in Tables A7 and A8.

Table A7 Diebold-Mariano test, GDP growth and unemployment, 2007–2016

	GDP growth				Unemployment			
	t+0	t+1	t+2	t+3	t+0	t+1	t+2	t+3
Mean difference	-0.02	0.09	0.03	0.01	0.00	0.03	0.19	0.40
DM	-0.35	0.63	0.21	0.06	0.11	0.55	3.12	4.75
p-value	0.73	0.53	0.83	0.95	0.91	0.59	0.01	0.00

Note: A positive mean difference means that the Government's absolute error is greater than the NIER's on average, and vice versa. If the p-value is less than 0.05 the difference may be considered statistically significant. The NIER's spring and autumn forecasts are taken from 'The Swedish economy' for March and August respectively.

Source: Stockhammar (2017) and own calculations.

¹ See e.g. Diebold and Mariano (1995) for a full description.

Table A8 Diebold-Mariano test, fiscal and structural net lending, 2007–2016

	Net lending				Structural net lending			
	t+0	t+1	t+2	t+3	t+0	t+1	t+2	t+3
Mean difference	0.04	-0.01	0.32	0.83	-0.05	-0.10	0.06	0.95
DM	0.59	-0.08	3.20	3.34	-0.40	-0.59	0.31	4.47
p-value	0.56	0.94	0.01	0.01	0.70	0.56	0.76	0.00

Note: A positive mean difference means that the Government's absolute error is greater than the NIER's on average, and vice versa. If the p-value is less than 0.05 the difference may be considered statistically significant. The NIER's spring and autumn forecasts are taken from 'The Swedish economy' for March and August respectively.

Source: Stockhammar (2017) and own calculations.

A.5 Theil's U – comparisons with a naive forecasting method

A 'naive forecast' means that the forecast values for the horizons $t+0$, $t+1$, $t+2$ and $t+3$ are set to the latest known outcome. In the terminology introduced above, therefore $\hat{y}_h = y_{t-1}$ for $h \in \{t+0, t+1, t+2, t+3\}$. The forecasting error and root mean squared error (RMSE) are then calculated by the same method as above. The root mean squared error is shown in Table A9.

Theil's U, as used in this report, is obtained by deriving the ratio between each forecasting body's root mean squared error and that which results from the naive forecast:

$$U = RMSE_{pm} / RMSE_{naiv}$$

where pm (=forecaster) is an index for the Government's and the NIER's forecasts.

Table A9 Root mean squared error (RMSE) for a naive forecasting method for 2007–2016, and 2010–2016

	GDP growth		Unemployment		Net lending		Structural net lending	
	07-16	10-16	07-16	10-16	07-16	10-16	07-16	10-16
t+0	4.16	4.24	0.82	0.48	1.39	0.99	0.82	0.74
t+1	5.05	4.38	1.21	0.64	2.14	1.59	1.12	1.15
t+2	3.61	3.63	1.10	0.63	1.98	1.50	1.55	1.40
t+3	3.20	3.83	1.04	0.62	2.02	1.27	2.02	1.80

Note: A naive forecast means that we assume that the latest known outcome will persist throughout the forecast period. For a definition of root mean squared error, see above.

Source: Stockhammar (2017) and own calculations.

If Theil's U is equal to one, this means that the forecast in question performs as well as a naive approach. A ratio of less than one means that the forecaster beats the naive forecast in terms of forecasting precision, and vice versa. The ratio is calculated for four different samples: all forecasts produced 2007–2016, all forecasts produced 2010–2016, spring forecasts (2007–2016) and autumn forecasts (2007–2016). The results are presented in Tables A10–A11 for the Government and the NIER. Table A12 shows Theil's U as calculated separately for the NIER's spring and autumn forecasts, i.e. the forecasts produced in March and August. This matches Theil's U as presented in the main text for the Government's forecasts.

Table A10 Theil's U for the Government's and the NIER's forecasts, 2007–2016

		GDP growth	Unemployment	Net lending	Structural net lending
<i>Government</i>	t+0	0.27	0.36	0.65	0.88
	t+1	0.62	1.08	0.82	1.02
	t+2	0.84	1.83	1.29	0.94
	t+3	0.61	1.87	1.52	1.20
<i>NIER</i>	t+0	0.26	0.34	0.56	0.80
	t+1	0.58	1.00	0.79	1.01
	t+2	0.88	1.65	1.14	0.88
	t+3	0.59	1.53	0.98	0.90

Note: Theil's U compares precision (RMSE) between a forecaster and a naive forecast. Theil's U = 1: equal forecasting precision. Theil's U > 1: naive forecast better. Theil's U < 1: forecaster better.

Source: Stockhammar (2017) and own calculations.

Table A11 Theil's U for the Government's and the NIER's forecasts, 2010–2016

		GDP growth	Unemployment	Net lending	Structural net lending
<i>Government</i>	t+0	0.25	0.56	0.83	1.02
	t+1	0.26	1.00	0.81	0.96
	t+2	0.46	1.46	1.44	1.26
	t+3	0.31	2.39	2.54	1.54
<i>NIER</i>	t+0	0.21	0.58	0.66	0.71
	t+1	0.22	0.92	0.74	0.90
	t+2	0.38	0.94	0.98	1.11
	t+3	0.30	1.23	1.44	1.05

Note: Theil's U compares precision (RMSE) between a forecaster and a naive forecast. Theil's U = 1: equal forecasting precision. Theil's U > 1: naive forecast better. Theil's U < 1: forecaster better.

Source: Stockhammar (2017) and own calculations.

Table A12 Theil's U for the NIER's autumn and spring forecasts, 2007–2016

		GDP growth	Unemployment	Net lending	Structural net lending
<i>Spring</i>	t+0	0.35	0.41	0.66	0.99
	t+1	0.65	1.08	0.92	1.13
	t+2	0.87	1.64	1.20	1.10
	t+3	0.62	1.32	1.01	0.86
<i>Autumn</i>	t+0	0.22	0.27	0.59	0.86
	t+1	0.57	1.03	0.71	0.96
	t+2	0.88	1.75	1.13	0.82
	t+3	0.55	1.77	1.02	0.93

Note: Theil's U compares precision (RMSE) between a forecaster and a naive forecast. Theil's U = 1: equal forecasting precision. Theil's U > 1: naive forecast better. Theil's U < 1: forecaster better. The NIER's spring and autumn forecasts are taken from 'The Swedish economy' for March and August respectively.

Source: Stockhammar (2017) and own calculations.

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