



OECD Economic Surveys

SWEDEN

JANUARY 2011



OECD Economic Surveys: Sweden 2011



Please cite this publication as:

OECD (2011), *OECD Economic Surveys: Sweden 2011*, OECD Publishing.
http://dx.doi.org/10.1787/eco_surveys-swe-2011-en

ISBN 978-92-64-09227-3 (print)
ISBN 978-92-64-09746-9 (PDF)

Series: OECD Economic Surveys
ISSN 0376-6438 (print)
ISSN 1609-7513 (online)

OECD Economic Surveys: Sweden
ISSN 1995-3380 (print)
ISSN 1999-0448 (online)

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

Corrigenda to OECD publications may be found on line at: www.oecd.org/publishing/corrigenda.

© OECD 2011

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to rights@oecd.org. Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at info@copyright.com or the Centre français d'exploitation du droit de copie (CFC) at contact@cfcopies.com.

Table of contents

Executive summary	8
Assessment and recommendations	9
Chapter 1. Consolidating the recovery	17
The economy during the crisis and beyond	18
Ensuring fiscal sustainability	25
Structural policies to promote growth	32
Notes	37
Bibliography	37
Chapter 2. Monetary policy and the financial system during and after the crisis ...	39
Monetary policy during the crisis and issues going forward	40
The Swedish financial system during the crisis and beyond	55
Conclusion	64
Notes	65
Bibliography	65
Chapter 3. Limiting long-term unemployment and non-participation	69
The crisis led to an increase in unemployment	70
Additional reforms are needed to avoid lasting labour market scars	81
Notes	92
Bibliography	92
Annex 3.A1. Unemployment benefits and active labour market policy programmes in Sweden	95
Chapter 4. Enhancing the cost-effectiveness of climate change mitigation policies in Sweden	99
Sweden, a clean country with ambitious GHG emission reduction targets	103
The policy framework to mitigate climate change	106
Moving forward: improving the cost-effectiveness of the policy framework	119
Notes	126
Bibliography	126
Annex 4.A1. Swedish climate and energy policies	129
Boxes	
1.1. A repeat of the early 1990s recession?	21
1.2. The Swedish Fiscal Policy Council	29
1.3. Taking stock of structural reform: fiscal framework and fiscal policy	31
1.4. Taking stock of structural reform: state ownership and taxation	37

2.1.	Special measures taken in response to the financial crisis.	41
2.2.	How well has the Riksbank conducted monetary policy?	49
2.3.	How useful are Financial Stability Reports?	60
2.4.	Should the Riksbank supervise banks?	61
2.5.	Summary of recommendations regarding monetary policy and the financial system.	64
3.1.	Comparison of the labour market in the recessions starting in 1990 and 2008	71
3.2.	Labour market measures taken in the budgets for 2009 and 2010.	76
3.3.	Summary of labour market recommendations.	91
4.1.	The political economy of climate change: some lessons from Sweden	102
4.2.	Main national and international climate change mitigation targets applying to Sweden	103
4.3.	Designing a cost-effective set of climate mitigation policy instruments	109
4.4.	Summary of recommendations to enhance the cost-effectiveness of climate change policies in Sweden.	125

Tables

1.1.	Economic indicators	19
1.2.	Revisions of the projected net balance by the government during the crisis	25
1.3.	Projected future public expenditure increases caused by ageing.	27
2.1.	Non-conventional measures taken during the crisis by selected central banks	40
2.2.	Real house prices are high in some countries including Sweden	53
3.1.	Composition of participants in active labour market programmes.	80
3.2.	Components of the EPL indicator for Sweden	84
4.1.	Decomposition of GHG emissions in selected countries	107
4.2.	Main instruments affecting GHG emissions in Sweden.	110
4.3.	GHG emission reduction projections over 1990-2020 in Sweden	118

Figures

1.1.	Swedish GDP contracted sharply during the recent recession	20
1.2.	The early 1990s and late 2000s Swedish recessions were different.	21
1.3.	Swedish growth has recovered strongly	22
1.4.	The Swedish unemployment rate has started to edge down	23
1.5.	The cyclically-adjusted primary surplus is large	24
1.6.	Swedish gross debt remains moderate.	25
1.7.	Gini coefficients of income inequality	32
1.8.	The GDP per capita gap and its decomposition.	33
1.9.	Employment in the private and public sectors in the long run	34
1.10.	VAT revenue ratio	36
1.11.	Product market regulation	36
2.1.	Swedish money market interest rates	43
2.2.	TED-spread	43
2.3.	Money market and short-term retail lending and deposit rates	44
2.4.	Money market and long-term retail lending and deposit rates	45
2.5.	Deviation of market expectations from Riksbank repo projections.	46
2.6.	Riksbank July 2009 repo projections	47
2.7.	Price developments	49
2.8.	Inflation.	49

2.9.	Proxies for long-term expected inflation	50
2.10.	Riksbank October 2009 GDP growth projections with uncertainty bands	51
2.11.	CPI and CPIF inflation with Riksbank February 2010 forecasts	52
2.12.	Three-month Libor-OIS rate spreads	55
2.13.	Lending in the Baltic states	56
2.14.	Resources for financial supervisors	59
3.1.	Labour market impact of the recession	70
3.2.	Comparison of the labour market in the recessions starting in 1990 and 2008	71
3.3.	The Beveridge curve in Sweden	72
3.4.	The effects of the recession across groups of workers	73
3.5.	Labour market adjustments during the recession	74
3.6.	Share of the working-age population receiving various types of income support	75
3.7.	Discretionary labour market policy measures in response to the crisis	77
3.8.	Marginal personal income tax rate in Sweden	77
3.9.	Additional spending on active labour market programmes in 2008-10	79
3.10.	Labour market duality	82
3.11.	Notice periods in OECD countries	85
3.12.	Marginal effective tax rate for a worker not eligible for unemployment benefits	86
3.13.	Sickness leave and disability pension	89
3.14.	Minimum cost of labour	90
4.1.	World emission trends by country/region	100
4.2.	The gap between pledged targets and the trajectory towards the long-term goal of limiting the global temperature increase to 2 °C	101
4.3.	GHG emissions in Annex I countries, trend and level	104
4.4.	GHG emissions and GDP in Sweden	105
4.5.	GHG emissions by sectors, 1990-2008	106
4.6.	Energy supply 1970-2007	107
4.7.	Share of renewable energy in total energy supply in Sweden and OECD	108
4.8.	Evolution of the general CO ₂ tax rate in Sweden	110
4.9.	Implicit tax rates on CO ₂ in OECD countries and in Sweden	111
4.10.	EU ETS carbon price	113
4.11.	Average price of spot traded electricity certificates in the electricity certificate system	116
4.12.	Patents in renewable energy technologies, 1978-2005	116
4.13.	Projected GHG emission reductions by sector, 2010	119

This Survey is published on the responsibility of the Economic and Development Review Committee of the OECD, which is charged with the examination of the economic situation of member countries.

The economic situation and policies of Sweden were reviewed by the Committee on 25 November 2010. The draft report was then revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 10 December 2010.

The Secretariat's draft report was prepared for the Committee by Stéphanie Jamet, Luke Willard and Niels-Jakob Harbo Hansen under the supervision of Vincent Koen. Research assistance was provided by Thomas Chalaux.

The previous Survey of Sweden was issued in December 2008.

Information about the latest as well as previous Surveys and more information about how Surveys are prepared is available at www.oecd.org/eco/surveys.

This book has...



StatLinks 

**A service that delivers Excel® files
from the printed page!**

Look for the *StatLinks* at the bottom right-hand corner of the tables or graphs in this book. To download the matching Excel® spreadsheet, just type the link into your Internet browser, starting with the <http://dx.doi.org> prefix.

If you're reading the PDF e-book edition, and your PC is connected to the Internet, simply click on the link. You'll find *StatLinks* appearing in more OECD books.

BASIC STATISTICS OF SWEDEN

THE LAND

Land area (1 000 sq. km)	450	Inhabitants in major cities, including suburbs (thousands)	
Lakes (1 000 sq. km)	39	Stockholm	1 965
Arable area (1 000 sq. km)	26	Göteborg	920
Woodland (1 000 sq. km)	275	Malmö	632

THE PEOPLE

Population (2009), thousands	9 302	Net population increase (average 2005-09) thousands	62.0
Number of inhabitants per sq. km	22	Net migration (2005), thousands	186.2

THE PRODUCTION

Gross domestic product in 2009 (Kr billion)	3 108	Gross fixed capital formation in 2008	
GDP per head, USD	43 654	Per cent of GDP	19.2
		Per head, USD	10 129
		Employment	
		Total, thousands, 2008	4 689
		Per cent of total, 2007	
		Agriculture, forestry, fishing	2
		Industry	22
		Other	76

THE GOVERNMENT

Per cent of GDP in 2009:		Composition of Parliament	
Public consumption	28	Social democrats	112
General government current revenue	54	Moderates	107
		Greens	25
		Liberals	24
		Centre	23
		Sweden democrats	20
		Christian democrats	19
		Left	19
		Total	349
		Last general election: 19 September 2010	
		Next election: 21 September 2014	

THE FOREIGN TRADE

Exports of goods and services, 2009 (per cent of GDP)	48.4	Imports of goods and services, 2009 (per cent of GDP)	41.9
Main merchandise exports (per cent of total)		Main merchandise imports (per cent of total)	
Paper products	7.7	Petroleum and petroleum products	9.9
Road vehicles	7.7	Road vehicles	8.1
Medicinal and pharmaceutical products	6.8	Electrical machinery and parts	6.9
General industrial equipment and parts	6.7	Telecommunications and sound equipment	5.2
Telecommunications and sound equipment	6.6	General industrial equipment and parts	4.6
Electrical machinery and parts	5.6	Special transactions and commodities	4.4

THE CURRENCY

Monetary unit: Krona		Currency units per USD, average of daily figures:	
		Year 2009	7.66
		November 2010	6.83

Executive summary

Sweden has weathered the recent global financial and economic crisis well thanks to strong economic institutions and fundamentals, not least a sound fiscal position. The main challenge going forward is to strengthen institutions and fundamentals even further so as to keep enhancing resilience and sustainable long-term growth. The crisis has revealed that on the whole the monetary and financial framework is sound. Continuing labour market and education system reform is key to avoid entrenched long-term unemployment and to bring workers with weak attachment to the labour market back into employment. Sweden is contributing to global welfare through its ambitious actions to mitigate greenhouse gas emissions, but these targets could be achieved at lower cost.

- **Maintaining a strong fiscal position.** In the face of the crisis, Sweden's healthy public finances proved a major asset. Sweden is in a better shape than most other OECD countries to face fiscal pressures coming from population ageing. Going forward, maintaining a sound fiscal framework, encouraging greater labour force participation and further increasing the efficiency of public spending would help cope with future negative shocks and various fiscal pressures.
- **Further improving monetary and financial policy frameworks.** Aggressive interest rates cuts, unconventional policy measures and exceptional government support to the financial system all helped contain the depth and length of the recession. As the expansion unfolds, the monetary policy stance needs to continue to tighten and support to the financial system needs to be scaled back. To strengthen the monetary policy framework even further, the central bank could improve communication. Some features of the financial system's institutional framework need to be reviewed to clarify the allocation of responsibilities and ensure that regulations and toolkits are well designed and assigned.
- **Limiting long-term unemployment and raising overall hours worked.** Past reforms and measures taken during the crisis have limited the fall in employment and exits from the labour market. But, as in the last deep crisis Sweden faced, there is a risk of a permanent increase in unemployment. Reducing the duality of employment protection legislation would foster the inclusion of groups at the margin of the labour market and improving the wage bargaining framework would ease labour market adjustments. The efficiency of active labour market policies could be raised by increasing the use of training, targeting it towards those who need it the most, and improving co-operation between institutions. Further reforms of the social benefit and tax systems are needed to provide the right incentives for increasing hours worked.
- **Enhancing the cost-effectiveness of climate change policies.** Sweden has developed an ambitious policy framework to limit greenhouse gas emissions and has achieved impressive results. Reducing them further could be very expensive, making it important to do so at the lowest possible cost. The carbon price should be made even more central and more uniform across sectors. A larger share of greenhouse gas emission reductions should be achieved in sectors covered by the EU emission trading scheme as well as outside Sweden. The overlap between targets and policies ought to be limited. Improving the assessment of Sweden's climate change policies would help in making progress in these directions.

Assessment and recommendations

Strengthening the fundamentals further

Sweden endured a deep contraction during the recent global economic and financial crisis but the recession was short and the economy has bounced back strongly. A key reason why Sweden performed well in the face of this major external shock was that it learned the right lessons from the severe banking crisis it experienced in the early 1990s. This earlier banking crisis triggered far-reaching reforms to restore fiscal sustainability, to put in place a robust monetary policy framework and to improve labour market and social policies. As a result, Sweden entered the latest crisis with strong economic institutions and fundamentals. Moreover, Sweden addressed the crisis through structural reforms, such as the increase in the earned-income tax credit, with positive effects both on the demand side of the economy in the short term and on the supply side in the longer term. Going forward, the challenge is for Sweden to strengthen these fundamentals even further to enable the country to enjoy robust economic growth.

A sound fiscal position proved to be a major asset in the face of the crisis

One of Sweden's main strengths going into the crisis was its sound fiscal position, with a relatively low gross government debt and a sizeable structural budget surplus. This allowed the automatic stabilisers to work and provided room to inject fiscal stimulus, without storing up long-term fiscal problems. Going forward, fiscal pressures coming from a rising share of the elderly in the population are expected to be less strong than in most other OECD countries, partly thanks to the pension system reform undertaken in the late 1990s. Even so, Sweden is likely to face significant fiscal pressures related to health and long-term care. The government has explained that its long-standing target of a 1% of GDP budget surplus over the cycle is not meant to finance future permanent spending increases stemming from ageing. Insofar as rising life expectancy enhances well-being, such pre-funding would not be justified from an intergenerational equity perspective. However, as illustrated over the past two years, there is a need to keep room for fiscal manoeuvre in the event of future negative shocks, and in that respect the surplus target provides an adequate safety margin. The government's proposal to increase the age until which individuals have the right to remain in employment from 67 to 69 would contribute to raising the labour market exit age, thereby reinforcing fiscal sustainability. It would in fact be desirable to go further and *more formally link the various retirement age parameters to life expectancy*.

*Monetary policy helped mitigate the downturn
but stimulus needs to be withdrawn
as the expansion unfolds*

On the monetary side, aggressive interest rate cuts and a broad range of unconventional monetary policy measures helped mitigate the downturn. The Swedish economy has now been recovering for some time and the central bank (Riksbank) has unwound a number of the exceptional measures and started to raise the repo rate in steps. This is appropriate and this process ought to continue gradually as the economic recovery is sustained and financial stress lessens. However, risks remain, particularly external ones, which could influence the speed at which stimulus should be withdrawn.

*Monetary policymaking is very transparent
but the crisis has highlighted some credibility
and communication challenges*

The Swedish monetary policy framework is remarkably transparent and has served the country well both in good and in bad times, including as interest rates neared the zero bound. However, the Riksbank did face some credibility challenges during the crisis. In particular, in the course of 2009, larger-than-usual differences arose between market expectations of the future path of the repo rate and the Riksbank's projections, with market expectations significantly higher. Another and more long-standing issue is that the Riksbank's inflation target is defined in terms of the overall consumer price index (CPI), which in Sweden includes mortgage payments, and hence is directly affected by changes in interest rates. While the Riksbank also uses another indicator that holds interest rates constant, the CPI target can at times complicate policy communication, raising the question of the merits of redefining the target in terms of a measure of inflation not directly affected by interest rates. Finally, recent debate in the Executive Board and the appointment of a commission of inquiry point to the need for the Riksbank to further analyse how asset price and credit developments should influence policy.

*Government support to the financial sector
was helpful but now needs to be scaled back*

During the crisis, the Swedish financial sector has coped well on the whole. Financial stress was substantial though more limited than in some other countries. In addition to the general funding problem, financial institutions faced a specific one coming from their activities in the Baltics. Government programmes to support lending and the financial sector have helped, either by directly providing funding or acting as a safety net. As conditions normalise, government support through instruments such as the guarantee programme and the capital injection programme, need to be unwound. The activities of Svensk Exportkredit should be reviewed to examine whether some of them are inappropriate and should be exited completely.

New financial regulations should be carefully designed

Following Basel and EU deliberations, the Financial Supervisory Authority (FSA) has proposed some liquidity and capital regulations which should come into effect in late 2010 and further reforms will occur in coming years. The relatively favourable capital position of the banks should facilitate proceeding with these changes. The Swedish authorities have also tried to develop other regulations for the financial system, notably an 85% ceiling for the loan-to-value ratio for new housing loans, with a view to protecting consumers and have established a stability fund to support the financial system during crises. When designing further new financial regulations, *attention will need to be paid to their effects on efficiency, stability, competition within and across national borders and consumer protection.*

The financial system's institutional framework needs to be improved

Both the Riksbank and the FSA are involved in financial supervision. Furthermore, the National Debt Office (NDO) can provide various types of support. Having several institutions involved can create problems if they have different views. While relations between the Riksbank, the NDO and the FSA are good, the delineation of responsibilities is not always clear. There are some gaps in the toolkits needed to properly supervise and influence financial institutions and *the resolution framework for banks needs to be evaluated. The responsibilities and relationship between the various institutions involved in supervision need to be reviewed and clarified.* If the FSA remains the supervisor, its toolkit may need to be strengthened so that it can more easily respond to problems. Another option, if the Riksbank continues to have financial stability responsibilities, would be to give it more effective instruments to influence banks' behaviour. There are also some other gaps in the existing framework. In particular, the FSA has only restricted supervision powers over deposit companies that take small deposits. *This anomaly needs to be addressed.* Cross-border banking issues have gained prominence during the recent financial turmoil and the Nordic and Baltic authorities recently reached agreement on a preliminary framework for co-operation and burden sharing between agencies in a crisis. *Financial supervision co-ordination and co-operation across borders ought to be further nurtured, with more specific and more binding agreements between relevant authorities.*

The labour market has turned around but it is important to avoid lasting long-term unemployment

After the onset of the crisis, unemployment rose markedly, though much less than expected and less than during the early 1990s. It has started to edge down in the course of the recovery, as hiring has picked up. Participation held up much better during the recession than in a number of other OECD countries. The reforms carried out over the past few years are expected to continue to lift labour market participation, from comparatively high levels. Labour market policies are key to preventing entrenched unemployment and to helping workers with weak attachment to the labour market find a job.

Job-search incentives could be improved even further

Reforms since the 1990s, and in particular the successive increases in the in-work tax credit in recent years, have substantially reduced the unemployment and inactivity traps. However, the average effective tax rate for low-income earners remains high compared to other OECD countries. In particular, mean-tested housing benefits that mainly help single parents and students continue to hamper job-search incentives for these groups. *A cut in housing benefits could be combined with an increase in family benefits for groups at risk of poverty.* Furthermore, as unemployment rose during the crisis, an increasing share of the unemployed ceased to be covered by unemployment insurance and had to rely on social assistance benefits that are withdrawn one-for-one against earned income. *Making contributions to the unemployment insurance mandatory, as proposed by the government, would help to address this problem. However, as acknowledged by the authorities, further reforms of the social transfer system are also needed.*

While Sweden follows a mutual obligation approach where the unemployed must fulfil availability criteria in order to receive unemployment benefits, *the implementation of sanctions when job-search requirements are not fulfilled needs to be stricter.* This could be facilitated by *adopting more gradual sanctions.* More fundamentally, the institutional framework where Public Employment Service branches monitor the fulfilment of requirements for receiving benefits but union-managed unemployment insurance agencies, funded largely by government grants, pay out the benefits, does not give the latter sufficient incentives to apply sanctions. To avoid these incentive problems, *the job-placement service and the administration of unemployment benefits should be much better co-ordinated.*

Active labour market policies need to focus on helping workers find regular jobs

Sweden is among the OECD countries with the highest public expenditure on active labour market policies (ALMPs). It also stands out by the large share of subsidised employment programmes and the small share of training, two features that became even more pronounced during the crisis. The low use of training programmes over the past two years should be seen in the light of the decision to scale up participation in the education system, notably in vocational programmes. There is a risk, however, that some unemployed would enrol in general education even if they would need more specific training. *The ALMP mix will have to shift gradually from work experience placements in the public sector towards training and job-search help.* Furthermore, as subsidised jobs have potentially large displacement effects, they should benefit those who have the lowest probability of finding a standard job. *The targeting of ALMP could be improved by further developing the use of profiling to identify individuals at risk of becoming long-term unemployed.*

*The consequences of using education
as a counter-cyclical policy instrument need
to be monitored*

The government's strategy to enrol some of the unemployed in education is a way to take advantage of the crisis by raising human capital. However, enlarging access to the education system runs the risk of lowering its quality if resources are not increased. *The impact of using regular education programmes on both the unemployed workers' employability and the quality of the education system should be assessed.* To encourage education providers to offer appropriate programmes and students to choose the ones that will improve their employability the most, *one approach would be to move gradually towards a system of tuition fees for tertiary education, including for tertiary vocational education, while extending the existing government loans available for students in order to finance tuition costs. Repayment of these loans could be made contingent on future income provided marginal income taxes are reduced.*

*Strict employment protection legislation hurts
workers at the margin of the labour market*

The Swedish labour market model relies to a large extent on social partners' involvement through collective agreements. This allows accommodation to macroeconomic shocks and sectoral idiosyncrasies and changes, while providing workers with adequate security. Against this backdrop, temporary jobs provide flexibility to the labour market but strict employment protection legislation (EPL) for permanent employment may impede low-productivity workers' access to employment. Furthermore, this dual EPL, with high protection for workers with permanent contracts but low protection for workers with temporary contracts, can hinder the accumulation of human capital as firms have less incentive to provide on-the-job training to temporary workers. *Procedures for individual and collective dismissals of workers on permanent contracts need to be eased. Legislation could be considered to facilitate severance payments in lieu of the notice period.*

*High minimum wages may impede labour market
adjustments*

While there is no legal minimum wage in Sweden, almost all workers are covered by a minimum wage set in industry-level collective agreements. Combined with high social contributions, this leads to a relatively high labour cost at the lower end of the wage spectrum. This in turn lowers the probability for low-productivity workers to find a job, thereby increasing the risk of long-term unemployment and the associated erosion of human capital. Several measures have lowered the labour cost for weak groups but at a high cost. Continuing with policies to reduce the replacement ratio would lower the reservation wage and thereby should help lower minimum wages. However, as labour unions are unlikely to fully take into account the adverse effects of high minimum wages, *it might be desirable to promote the use of transparent opt-out clauses. An independent commission could play a role and advise on the effects of minimum wages on employment.*

Sweden has adopted very ambitious greenhouse gas emission targets

Sweden has adopted very ambitious targets to lower greenhouse gas (GHG) emissions. The country has developed an extensive and generally sound policy framework to limit such emissions and is one of the OECD countries that has reduced them the most, to what is now a very low level per capita. However, as Sweden has already made enormous progress, the cost of reducing emissions further could be very high, lending urgency to the need to improve the cost-effectiveness of its climate change policies.

The carbon price could be made even more central and more uniform

Market-based instruments are widely used, with a CO₂ tax, an energy tax and the participation in the EU emission trading system (ETS). However, the CO₂ and energy taxes include a large number of exemptions. These exemptions generate heterogeneity in carbon prices, which forces emission reductions onto sectors where abatement costs are not necessarily the lowest. *Continue to gradually phase out exemptions from the carbon tax in line with Parliament's 2009 decision.* This would allow the general level of the tax to be lowered while achieving the same amount of GHG emission reductions. Having an energy tax that taxes CO₂ in addition to the carbon tax makes the price signal on carbon less clear to firms and households. *The interactions between the CO₂ tax and the energy tax could be limited by reforming the two. As far as possible, the carbon dioxide externality should be addressed through the CO₂ tax. The energy tax and perhaps other taxes could be used to address other externalities.* Furthermore, as the production and imports of biofuels generate GHG emissions, though not only in Sweden, *biofuels should be taxed over and above VAT.* This can be done, as is planned, by assessing tax exemptions against environmental sustainability criteria. Moreover, *an energy tax should be applied to biofuels.*

Non-market based instruments are also widely used, with some of them helpfully complementing the framework while others overlap with price instruments, forcing GHG abatement in sectors with relatively high marginal abatement costs. *The use of other instruments that implicitly generate a carbon price needs to be limited to situations where there is a distinct market failure or some other clear objective.* As an electricity certificate system is in place, *other forms of support to renewables in the electricity sector could in many cases be removed.* In particular, *programmes to finance "green investments" at the local level that have delivered limited GHG emission reductions should be phased out.*

The share of GHG emission reductions achieved in sectors covered by the EU ETS and outside Sweden should be raised

Up to now, Sweden has mainly reduced its GHG emissions in sectors that are not covered by the EU ETS, partly because targets are set for these sectors, even though abatement costs are likely to be high. Extending the base of the CO₂ tax would allow lowering its general level, thereby narrowing the gap vis-à-vis the EU carbon price and giving more incentives to reduce emissions in sectors covered by the EU ETS. Moreover, in future

negotiations on the allocation of permits within the EU ETS, Sweden could take a larger share of the effort by negotiating lower permit allocations conditional on a downward adjustment of the EU quota. In parallel, it needs to continue to work towards a reform of the existing flexible mechanism, including an improvement in monitoring capacities.

The overlap of targets raises the cost of achieving the climate target

In addition to the GHG emission reduction target, Sweden has other targets that interact with the climate target. These include an energy efficiency target, a global renewables target and a renewables target for the transport sector. These targets have been adopted at the EU level, but Sweden tends to endorse targets that are more binding. While some of these targets aim at fulfilling other objectives than reducing GHG emissions, having several targets that impact on GHG emissions generates additional constraints on the economy and hence raises the cost of meeting the climate target. The renewables target may serve to improve Sweden's energy security (though it leads to high imports of biofuels), but it is very costly. Furthermore, it is not obvious that there is a need for specific support to renewables in addition to that induced by the carbon price. *The costs and gains of having developed renewable energy and of expanding its use further need to be assessed. Sweden could consider pursuing a less binding national target, insofar as this target is renegotiated at the EU level. Furthermore, the ambition to move to a fossil-fuels-independent vehicle fleet could lead to very large costs and hence ought to be reconsidered.*

The electricity certificate system aiming at developing renewables in the electricity sector is market-based and therefore encourages investments in the most profitable technologies. However, it entails deadweight losses and is a subsidy to renewable energy, which is already boosted through the EU carbon price. The government should assess the electricity certificate system and restrict its access to technologies that require support in addition to that provided by the EU ETS carbon price. *Some provisions could be introduced to avoid the certificate price reaching levels that generate excessively large costs to consumers.*

The assessment of Sweden's climate change policies could be improved

To raise the cost-effectiveness of the climate policy framework and to share its experience with other countries, Sweden should assess further the impact and costs of its policies. It could do this by developing *ex ante and ex post evaluations by both governmental and independent institutions*. Having a single institution in charge of co-ordinating the assessment of policies would help. In the absence of a global policy framework to mitigate climate change but with regional initiatives being in place, a key issue for countries like Sweden that want to do more is how to combine national policies with regional ones. *The interactions between Sweden's climate change policies and those decided at an international level need to be further assessed.*

Chapter 1

Consolidating the recovery

Sweden is recovering strongly from the recent deep recession, supported by substantial fiscal and monetary policy easing and a pick-up in external demand. A relatively accommodating monetary stance coupled with an improving labour market are expected to help sustain growth. Though Sweden's fiscal position is enviable compared with many other countries, there is scope to further strengthen the fiscal framework. Medium-term fiscal pressures could be reduced by encouraging greater labour force participation and increasing the efficiency of public spending. Closing the income gap vis-à-vis leading OECD economies will require further labour market reforms, further tax reforms to enhance work incentives, and a reduction in the extent of public ownership in market-related activities to boost competition and productivity.

Sweden endured a deep, but short, contraction during the global economic crisis. Financial market stress was substantial, though more limited than in some other countries. In addition to the general funding problem, financial institutions faced a more specific problem coming from their activities in the Baltics. Fiscal and labour market policies, aggressive interest rate cuts and a broad range of unconventional monetary policy measures helped to mitigate the extent of the downturn. On a broad range of criteria, Sweden did well during the crisis and the economy has now been recovering firmly for some time. However, the crisis highlighted some issues with monetary policy and financial supervision settings that need to be addressed (Chapter 2).

Sweden entered the crisis with a strong fiscal position. This allowed the government to let automatic stabilisers work fully and to inject discretionary fiscal stimulus without incurring any reputational costs. Maintaining a sound fiscal position is key to successfully withstanding both future negative shocks and the fiscal pressures stemming from ageing and increasing demands for public services. The existing fiscal framework will play an important role in this respect, but some of its features can still be improved.

The economic crisis hit Sweden while labour market participation was on the rise thanks to structural reforms, including the introduction of an income tax credit, a reform of unemployment benefit insurance and an overhaul of the sickness-leave and disability benefit system. Following the crisis, it has become even more challenging to move workers with weak attachment to the labour market into employment and to prevent unemployment from becoming entrenched. Improving the efficiency of labour market policies and removing the obstacles to a well-functioning labour market would improve both the sustainability of public finances and medium-term growth prospects (Chapter 3). Continuing with product market, tax system and other reforms will also be important for sustaining growth.

Sweden strives to green its economy, but also to contribute to a greener world economy. In particular, Sweden has developed a broad and aggressive range of instruments to mitigate greenhouse gas (GHG) emissions. While others can learn from Sweden's experience, it can be costly for a single and relatively small country to be a leader in the face of a global problem. Improving the cost effectiveness of Sweden's overall framework to mitigate GHG emissions is a way to reconcile the ambition of its climate and energy targets and the need to achieve these targets at the lowest possible cost (Chapter 4).

The economy during the crisis and beyond

The economy suffered a major contraction

The Swedish economy experienced a sharp contraction during the global financial and economic crisis (Table 1.1). Even prior to the intensification of international financial turmoil in late 2008, GDP started to fall as exports declined, amid a weakening world economy, and consumption fell, as consumers stepped up their precautionary

Table 1.1. **Economic indicators**

	2007	2008	2009	2010	2011	2012
	Percentage change, volume (2009 prices)					
Real GDP	3.4	-0.8	-5.3	5.2	3.9	3.4
Private consumption	3.8	-0.1	-0.4	3.4	3.1	2.8
Government consumption	0.8	0.8	1.8	1.7	1.1	1.0
Gross fixed capital formation	9.1	1.0	-16.2	5.3	7.6	6.5
Final domestic demand	4.0	0.4	-3.2	3.2	3.4	3.0
Stockbuilding ¹	0.7	-0.5	-1.4	2.1	0.4	0.0
Total domestic demand	4.7	-0.1	-4.9	5.8	3.7	3.0
Exports of goods and services	5.9	1.3	-13.3	10.8	8.4	6.6
Imports of goods and services	9.3	3.0	-13.4	12.4	8.8	6.2
Net exports ¹	-0.9	-0.6	-0.9	0.0	0.4	0.6
GDP deflator	2.6	3.3	1.8	1.1	1.2	1.5
<i>Memorandum items</i>						
Consumer price index ²	2.2	3.4	-0.3	1.1	1.5	2.3
Underlying price index (CPIF) ³	1.4	2.6	1.8	1.8	1.2	1.6
Private consumption deflator	1.3	3.2	1.9	0.8	0.9	1.7
Unemployment rate ⁴	6.1	6.2	8.3	8.4	8.0	7.5
Household saving ratio ⁵	8.8	11.2	12.9	10.3	10.1	8.6
General government financial balance ⁶	3.5	2.2	-1.0	-1.2	-0.6	0.6
Cyclically-adjusted net lending ⁷	1.7	1.9	2.1	1.1	1.1	1.8
Gross debt (Maastricht definition) ⁶	40.0	38.3	42.1	41.2	38.8	35.1
Current account balance ⁶	8.2	9.3	7.4	6.8	6.8	7.3

Note: National accounts are based on official chain-linked data and are seasonally and working-day adjusted. The former introduces a discrepancy in the identity between real demand components and GDP. For further details see OECD Economic Outlook, Sources and Methods (www.oecd.org/eco/sources-and-methods).

1. Contributions to changes in real GDP (percentage of real GDP in previous year).
2. The consumer price index includes mortgage interest costs.
3. The consumer price index holding interest rates constant.
4. Historical data and projections are based on the definition of unemployment which covers 15 to 74 year olds and classifies job-seeking full-time students as unemployed.
5. As a percentage of disposable income.
6. As a percentage of GDP.
7. As a percentage of potential GDP.

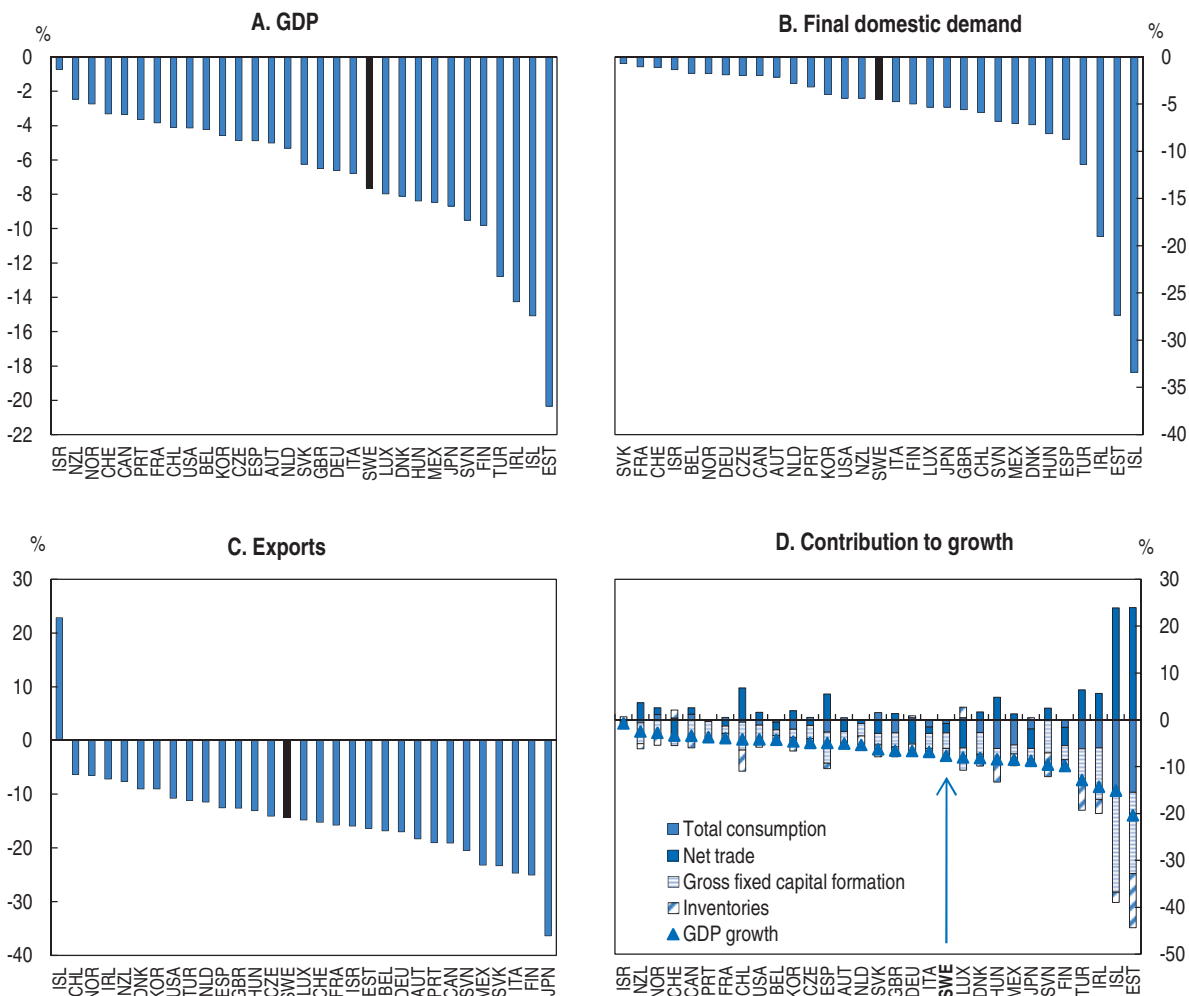
Source: Update, based on the national accounts data released in late November 2010, of the projection presented in OECD Economic Outlook No. 88.

saving in response to heightened uncertainty. While Sweden had little direct exposure to the US housing market, where the global financial crisis first became manifest, the Swedish financial system was affected by rising funding costs and falling financial asset prices. The Swedish recession intensified in late 2008 and early 2009, following the bankruptcy of Lehman Brothers, as financial market stress jumped and world trade collapsed.

Overall, output declined by around 7½ per cent from peak to trough, a deeper recession than in most OECD economies and a sharper, though shorter, recession than that of the early 1990s (Figure 1.1, Box 1.1). External factors were particularly important in the recent Swedish recession, with exports and export-dependent business investment plunging. Though final domestic demand did soften during the recession, its decline has been modest compared to the early 1990s recession, reflecting the external nature of the recent shock and a relatively resilient economy which has benefited from past reforms.

Figure 1.1. **Swedish GDP contracted sharply during the recent recession**

Percentage change from GDP peak to GDP trough



Note: The 31 OECD countries that have had a recession are reported in Panels A, B and C. Australia and Poland are excluded as they did not have recessions and Greece is excluded as its recession has not ended yet. The recession shown for Norway is the one that has started in 2008. In Panel D, the contribution of inventories is calculated as a residual.

Source: OECD Analytical Database.

StatLink  <http://dx.doi.org/10.1787/888932367681>

The economy has subsequently rebounded

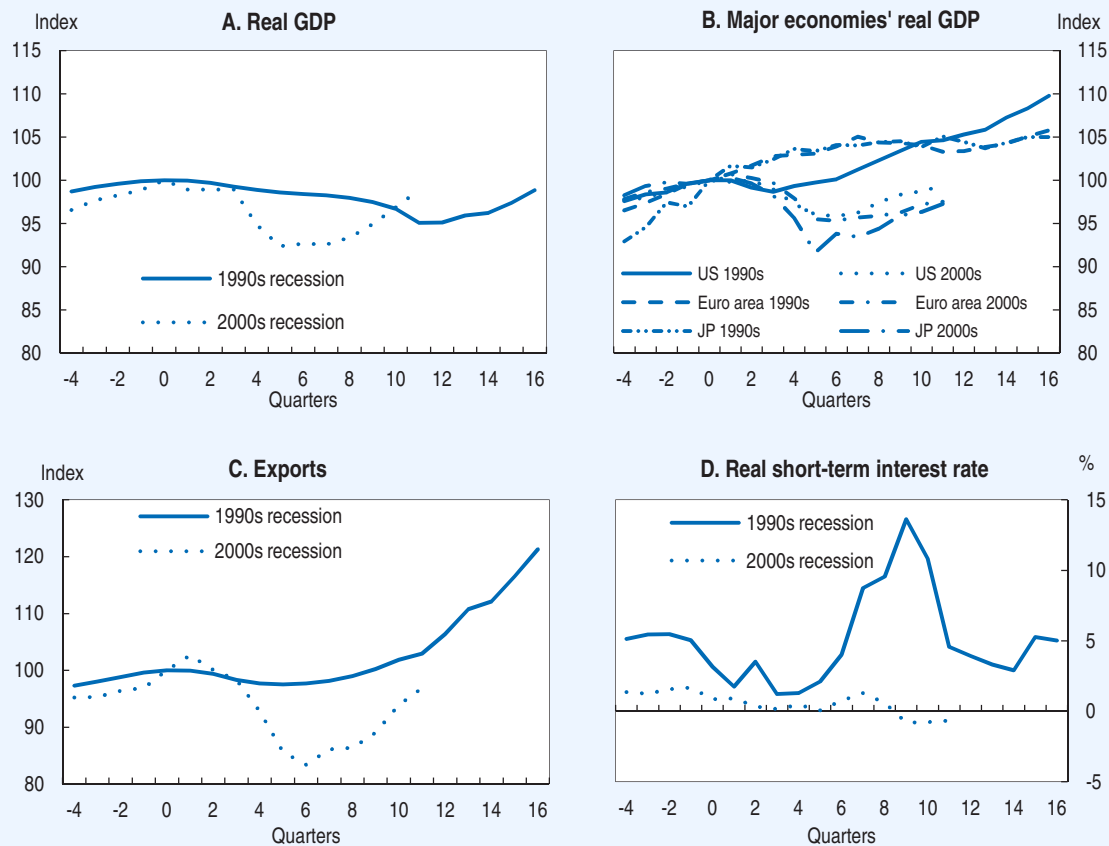
Output has subsequently recovered strongly, with real GDP growing by 4½ per cent in the year to mid-2010 and by 6.8% in the third quarter (year-on-year), a good performance compared to most other OECD economies (Figure 1.3). Even so, by fall 2010, GDP was 1% below its pre-recession peak. Export growth has been boosted by recovery in Sweden's export markets, reflecting aggressive policy responses to the crisis overseas. Investment and private consumption have been supported by very stimulatory monetary policy. The strong state of public finances also helped because it allowed the fiscal levers to be used without jeopardising fiscal sustainability.

With the economy on the mend and business confidence up, employment growth has picked up. Unemployment has started to recede, though the decline has been relatively modest so far (Figure 1.4). However, there is still substantial slack in the economy, helping to keep inflationary pressures in check (see Figure 2.8 in Chapter 2).

Box 1.1. A repeat of the early 1990s recession?

Sweden's recession, with its financial sector problems, was superficially reminiscent of the severe recession in the early 1990s, when banking sector problems were associated with a decline in GDP of 5% from peak to trough (Figure 1.2 Panel A).

Figure 1.2. The early 1990s and late 2000s Swedish recessions were different



Note: For the 1990s, quarter 0 is Q2 1990 (the peak of the Swedish expansion) and, for the 2000s, quarter 0 is Q4 2007 (the peak of the Swedish expansion) in all four panels. The index = 100 at quarter 0 unless otherwise stated.

Source: OECD Analytical Database.

StatLink  <http://dx.doi.org/10.1787/888932367700>

However, the two recessions were very different. The early 1990s recession, while influenced by a downturn in foreign activity, was largely driven by domestic developments. The bust following a housing and commercial property boom contributed to problems in the banking sector, while the early 1990s tax reform lowered capital income tax, encouraged saving and weakened demand. In contrast, the recent recession was driven mainly by external factors, with severe downturns in all major OECD economies leading to a sharp fall in Swedish exports (Figure 1.2 Panels B and C). In addition, problems in the Baltic states and difficulties in international funding markets hurt the Swedish financial system.¹ This led to a deferral of investment as households and businesses waited to see how financial events unfolded.

While both crises involved government capital injection and guarantee programmes to support the financial sector, other aspects of the policy responses were quite different. The fiscal stance eased substantially more during the 1990s recession than in the recent downturn.² In contrast, monetary policy was constrained by an inflexible exchange-rate regime during much of the 1990s crisis, which resulted in

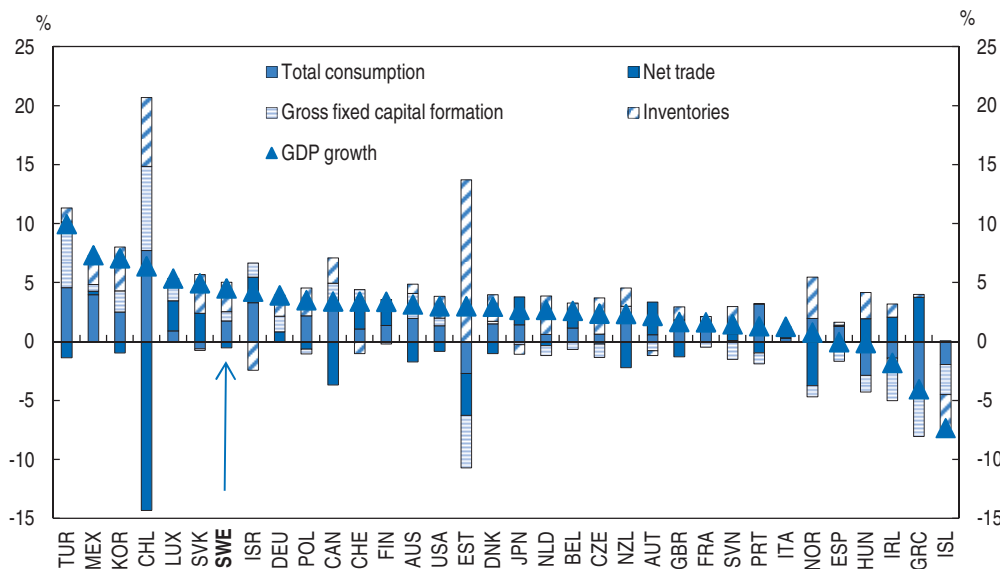
Box 1.1. A repeat of the early 1990s recession? (cont.)

high interest rates (Figure 1.2 Panel D). The export-led recovery only occurred once the krona was devalued in late 1992 and interest rates were eased. In the more recent recession, the central bank (the Riksbank) aggressively lowered repo rates after the Lehman Brothers bankruptcy, helping to revive GDP growth.

The policy framework was reformed after the 1990s recession to improve the capacity for policy responses. Specifically, the fixed-exchange rate regime was abandoned and the Riksbank became an inflation targeter. Fiscal policy initially aimed to consolidate public finances. Then, the current fiscal policy framework was introduced, to lock in the fiscal consolidation gains that had been achieved.

1. However compared to the earlier recession, financial sector problems have not been so severe, with Laeven and Valencia (2010) classifying the recent Swedish financial crisis as only a borderline systemic banking crisis, unlike the 1990s recession. In fact, according to them, even the 1990s crisis was fairly moderate compared to other systemic banking crises, in terms of the peak in non-performing loans as a per cent of total assets. This may be one reason why the fiscal costs of that crisis were not large (Laeven and Valencia, 2008, and OECD, 2008a).
2. Net lending fell from 3¼ per cent of GDP in 1990 to -11¼ per cent in 1993, a fall of 14½ percentage points. The fall from 2007 to 2010 was 4¼ percentage points. For cyclically-adjusted net lending the fall was 9¼ percentage points from 1990 to 1993 and ½ of a percentage point from 2007 to 2010. However, this may overstate the effect on activity in the 1990s as the support to the banking system (3¼ per cent of GDP in 1993) had budgetary implications but little direct effect on growth and the deterioration in the fiscal position may have contributed to relatively high long-term real interest rates.

Figure 1.3. **Swedish growth has recovered strongly**
Contributions to GDP four-quarter-ended growth to Q2 2010



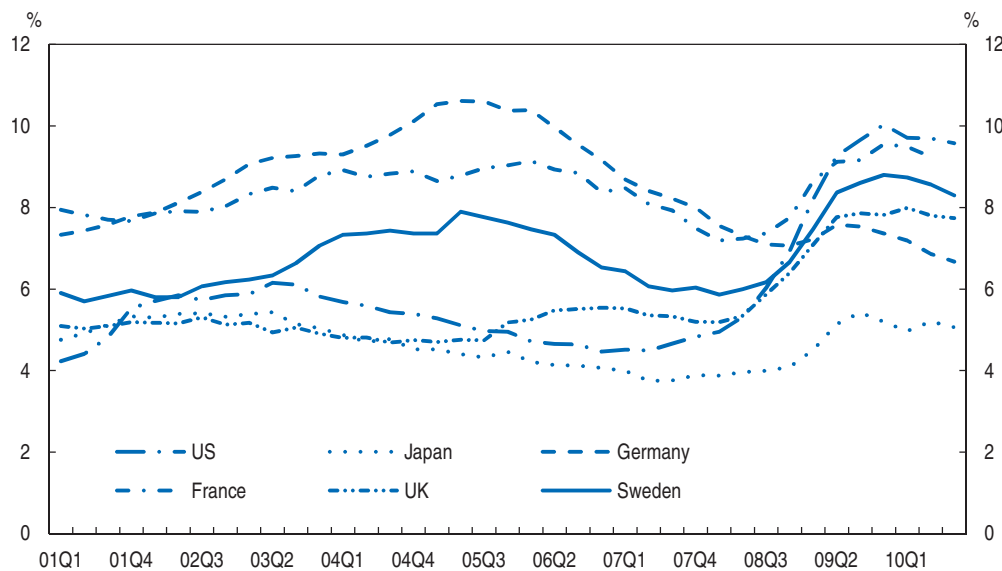
Note: The figure shows OECD countries where data on components are available. The contribution of inventories is calculated as a residual.

Source: OECD Analytical Database.

StatLink  <http://dx.doi.org/10.1787/888932367719>

Sweden's short-term outlook is bright

The solid recovery is expected to continue (see Table 1.1). A high saving rate, low interest rates and an improving labour market will encourage consumers to increase spending. Exports are projected to grow broadly in line with export market demand. Investment is set to expand on the back of export growth and improving capacity utilisation. Robust employment growth is expected to continue, and the unemployment rate to decline even though structural reforms encourage greater labour force participation.

Figure 1.4. **The Swedish unemployment rate has started to edge down**

Source: OECD Analytical Database and Statistics Sweden.

StatLink  <http://dx.doi.org/10.1787/888932367738>

Headline inflation (which includes mortgage interest rate costs) is expected to continue to rise, but mainly reflecting increases in interest rates. Consumer price inflation holding mortgage rates constant (CPIF) is set to remain subdued, due to moderate wage pressures (reflected in 2010 earnings settlements) and well-anchored long-term inflation expectations. With financial conditions normalising and the recovery well underway, the central bank (the Riksbank) expects to keep raising interest rates.

A deterioration in global demand, due either to financial stress from concerns about fiscal sustainability or abrupt fiscal consolidation abroad, would pose a significant downside risk to growth for export-dependent Sweden. The export sector could also be hurt by a possible appreciation of the currency, especially as interest rates are likely to be higher in Sweden than many other economies. In the October 2010 *Monetary Policy Report*, the Riksbank expected an appreciation of around 6%, though the appreciation could be even stronger if there are capital inflows due to a flight to quality or if, as suggested by financial markets, foreign interest rates are even lower than the Riksbank expects. Another risk is that a house price fall could subdue growth (Chapter 2). On the other hand, recent survey evidence may mean that, in the short term, growth is even stronger than projected.

Aggressive policies and automatic stabilisers helped

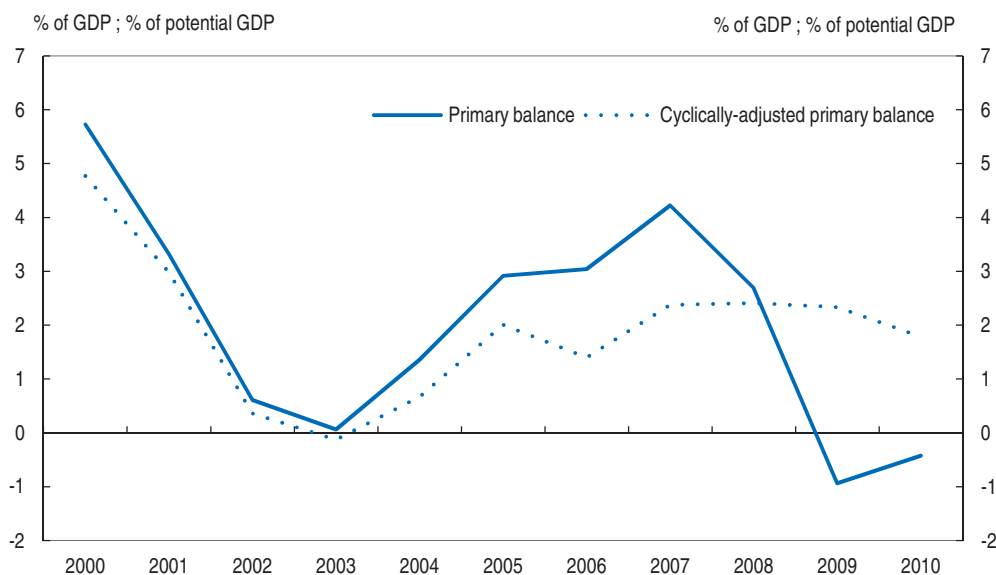
While international developments played an important part in Sweden's economic recovery, domestic policies also had a significant role. After the intensification of the crisis in late 2008, the Riksbank started easing monetary policy aggressively and, in conjunction with other authorities, introduced a number of unconventional measures to support the financial system (Chapter 2). Real short-term interest rates (measured using the private consumption deflator) fell from 2¼ to -1½ per cent from 2007 to 2009, i.e. much more than in the United States or the euro area. Apart from lessening the extent of the crisis through their direct effects on the financial sector and lending, these actions also boosted consumer and business confidence, thereby further supporting growth.

Fiscal policy also provided significant support, with the government financial balance falling by around 4¾ percentage points of GDP from 2007 to 2010, compared to 7¾ and 5¾ percentage points in the US and the euro area, respectively. This was in part due to automatic stabilisers, which are large in Sweden – a change in GDP of 1% is estimated to lead to a change in the budget balance of 0.55% of GDP, as against an OECD average of 0.44% (Girouard and André, 2005). Recent research confirms that automatic stabilisers are relatively strong in Sweden (Floden, 2009 and Dolls *et al.*, 2010). Discretionary fiscal and labour market policy also played an important role. The cyclically-adjusted balance did not decline before 2010, and only by 1 percentage point of potential GDP, despite cuts in income tax through larger in-work tax credits, reductions in social contributions and pensioner taxes, and greater spending on active labour market programmes and education in recent budgets (Chapter 3).

Sweden maintained a good fiscal position

Over recent years, the Swedish government has maintained a good fiscal position including during the global crisis. Structural net lending exceeded 1½ per cent of GDP in 2008 and 2009 according to government estimates, and is expected to remain positive in 2010 (Ministry of Finance, 2010a). On OECD estimates as well, the cyclically-adjusted primary balance has remained in large surplus throughout this period (Figure 1.5). This partly stems from the fact that the labour market deterioration was moderate given the fall in GDP, so that tax revenues held up relatively well and the increase in expenditure was fairly limited. Table 1.2 shows that, over time, the government has generally revised up its net balance estimates with the one for 2009 rising from a deficit of 2.7% of GDP in early 2009 to a deficit of 1.2% by October 2010. If anything, Sweden may well outperform its long-standing target of a 1% of GDP surplus over the business cycle (see below). Sweden also has a relatively low gross government debt (Figure 1.6) and it is one of a handful of OECD countries with a positive net financial asset position.

Figure 1.5. The cyclically-adjusted primary surplus is large

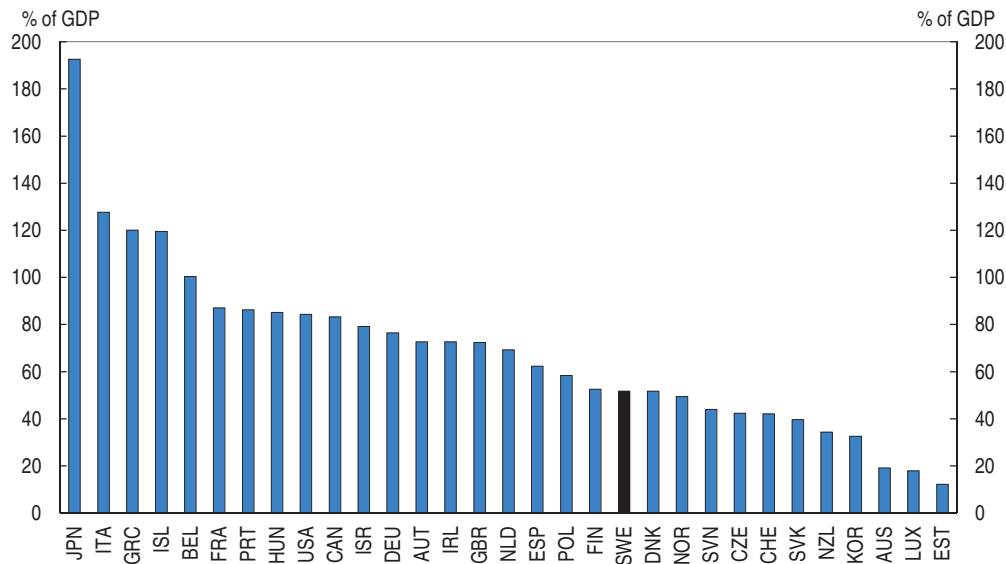


Source: OECD Economic Outlook 88 Database.


StatLink  <http://dx.doi.org/10.1787/888932367757>

Figure 1.6. **Swedish gross debt remains moderate**

Gross debt as % of GDP in 2009



Source: OECD Economic Outlook 88 Database.

StatLink  <http://dx.doi.org/10.1787/888932367776>Table 1.2. **Revisions of the projected net balance by the government during the crisis**

General government net balance (per cent of GDP)

Estimates made in:	Estimates for:					
	2009	2010	2011	2012	2013	2014
October 2010	-1.2	-1.3	-0.4	1.0	2.0	2.9
August 2010	-1.0	-1.1	-0.2	1.1	2.0	2.9
June 2010	-1.0	-1.5	-0.5	0.7	1.7	2.6
Spring 2010	-0.8	-2.1	-1.0	0.4	1.3	2.2
September 2009	-2.2	-3.4	-2.1	-1.1		
Spring 2009	-2.7	-3.8	-3.1	-2.0		

Source: Ministry of Finance.

Ensuring fiscal sustainability

Assessments of fiscal sustainability generally show Sweden to be less at risk than other countries. The size of fiscal tightening required to ensure sustainability depends on the definition thereof. European Commission (2009) estimates show that with only moderate tightening gross debt can be stabilised at 60% of GDP by 2060 (S1 indicator), or that with larger but still moderate tightening, this ratio might stabilise over an infinite horizon (S2 indicator; OECD, 2010).¹ More recent calculations published in the Spring Fiscal Policy Bill 2010 and which are unchanged in the Budget Bill for 2011 are even more optimistic, suggesting that no tightening would be required according to the S2 indicator. Based on a range of indicators, the Swedish Fiscal Policy Council also concludes that sustainability problems are minor in Sweden (Swedish Fiscal Policy Council, 2010). However, these estimates, for Sweden like for other countries, depend strongly on the underlying methodology and on a large number of assumptions. In particular, they only imperfectly account for some of the foreseeable increases in public expenditure such as the impact of new technology on health-care costs.

Keeping room for manoeuvre in the event of negative shocks

One lesson from the global crisis is that sound macroeconomic policies can allow a country to respond to a very large negative shock by letting insurance systems work in full and injecting fiscal stimulus without debt running out of control. Furthermore, countries with a sound fiscal position are less vulnerable to interest rate risk, though they may still be affected if their financial institutions are exposed to countries that themselves experience a crisis. Indeed, concerns about the ability of some euro area governments to service their debt caused spreads on long-term interest rates (*vis-à-vis* Germany) to pick up in some parts of the euro area but not in Sweden. Empirical research supports the notion that containing the public debt ratio limits the risk that interest rates will rise sharply. Calculations for Sweden suggest that, thanks to past reforms, Sweden's debt is well below such a threshold (Bi and Leeper, 2010). Moreover, recent reforms have likely pushed up this threshold as decreases in both taxes and public expenditure as a share of GDP have made room for future increases if necessary.

Addressing medium-term fiscal pressures

Compared with other European countries, the impact of ageing on future public spending is expected to be moderate in Sweden although public pension and long-term care spending as a share of GDP is already high. Thanks to high fertility and migration rates, Sweden is one of the few European countries for which the working-age population is projected to expand over the coming decades (European Commission, 2009). Furthermore, Sweden undertook a pension reform in the 1990s that has markedly limited the impact of ageing on pension expenditure as a share of GDP. According to the European Commission's projections, age-related public expenditure are set to increase by 2.7% of GDP over 2010-60, driven mainly by long-term care and, to a lesser extent, by health spending (Table 1.3). More recent national projections, which rest on lower life expectancy assumptions, are even more optimistic, showing an increase of only 1% of GDP over the same time horizon.

However, the impact of ageing on public spending may be rather small compared to the impact of new technologies or changes in people's expectations regarding the level and quality of public services, especially with respect to health care (Price et al., 2008). Increasing labour supply from workers of all ages, both through the intensive (hours worked per employee) and extensive (employment) margins, thereby increasing tax revenues and lowering public social expenditure would help address these long-term fiscal pressures. This has been a policy priority in recent years and rightly is at the core of the strategy announced by the new government. Policies to further raise labour market participation and to address the risk that unemployment becomes entrenched are discussed in Chapter 3.

Rising longevity justifies extending labour supply through a postponement of the retirement age. The pension system provides some incentives to exit the labour market later when life expectancy rises. As the system defines a contribution level and automatically adjusts pensions to demographic shifts (and changes in economic growth), those who want to receive a given annual pension must retire later if life expectancy increases. While this mechanism ensures that the pension system remains in equilibrium as life expectancy increases, it may lead to an insufficient postponement of the retirement age to finance future public spending. Indeed, there are at least two reasons why people may choose not to fully adjust their retirement age to life expectancy.

Table 1.3. **Projected future public expenditure increases caused by ageing**
Per cent of GDP

	Pension spending		Healthcare		Long-term care		Unemployment benefit and education		Total	
	2010	Change 2010 to 2060	2010	Change 2010 to 2060	2010	Change 2010 to 2060	2010	Change 2010 to 2060	2010	Change 2010 to 2060
SWE	9.6	-0.2	7.3	0.7	3.5	2.2	6.6	0	27.1	2.7
AUT	12.7	1.0	6.6	1.4	1.3	1.2	5.2	-0.2	25.7	3.3
BEL	10.3	4.5	7.7	1.1	1.5	1.3	7.3	-0.3	26.8	6.6
CZE	7.1	4.0	6.4	2.0	0.2	0.4	3.3	0	17.0	6.3
DEU	10.2	2.5	7.6	1.6	1.0	1.4	4.6	-0.4	23.3	5.1
DNK	9.4	-0.2	6.0	0.9	1.8	1.5	8.0	0.1	25.2	2.2
ESP	8.9	6.2	5.6	1.6	0.7	0.7	4.8	-0.2	20.0	8.3
EST	6.4	-1.6	5.1	1.1	0.1	0.1	3.2	0.3	14.8	-0.1
FIN	10.7	2.6	5.6	0.8	1.9	2.5	6.4	0	24.7	5.9
FRA	13.5	0.6	8.2	1.1	1.5	0.7	5.8	-0.2	29.0	2.2
GBR	6.7	2.5	7.6	1.8	0.8	0.5	4.0	0	19.2	4.8
GRC	11.6	12.5	5.1	1.3	1.5	2.1	3.8	0.1	21.9	16.0
HUN	11.3	2.6	5.8	1.3	0.3	0.4	4.5	-0.3	21.8	4.0
IRL	5.5	5.9	5.9	1.7	0.9	1.3	5.3	-0.2	17.5	8.7
ITA	14	-0.4	5.9	1.0	1.7	1.2	4.3	-0.2	26.0	1.6
LUX	8.6	15.3	5.9	1.1	1.4	2.0	4.0	-0.3	19.9	18.2
NLD	6.5	4.0	4.9	0.9	3.5	4.6	5.6	-0.2	20.5	9.4
POL	10.8	-2.1	4.1	0.8	0.4	0.7	3.8	-0.6	19.1	-1.1
PRT	11.9	1.5	7.3	1.8	0.1	0.1	5.6	-0.4	24.9	2.9
SLO	10.1	8.5	6.8	1.7	1.2	1.7	5.1	0.7	23.1	12.7

Source: European Commission (2009).

First, the full value of the production generated by a marginal delay in retirement does not accrue to the individual as there is a risk to die before the average life expectancy. Second, some groups of the population have a low elasticity of the retirement decision to income and prefer to retire early even with a lower pension. There is no formal retirement age in the Swedish pension system that can be directly linked to life expectancy (unlike in Denmark for instance). However, several parameters that influence retirement decisions could be linked more formally to life expectancy, with possibly some differentiation between groups of workers, notably to take into account physically demanding jobs. Such parameters include: i) the minimum age for claiming an old-age pension, ii) the standard pension age used in other social benefit systems, and iii) the age until which employees are covered by employment protection legislation and hence have a “right” to remain in their position (Swedish Fiscal Policy Council, 2008). The government’s proposal to increase the age up to which individuals have the right to remain in employment from 67 to 69 goes in the right direction. However, as this parameter may also discourage hiring of older workers, some of the other parameters should also be used. At a minimum, the pension rules and their implications for labour market exit decisions should continue to be reviewed periodically so as to ensure that the retirement age does indeed increase in line with average life expectancy.

The efficiency of public spending could also be raised, even further improving the government’s financial position. According to OECD indicators, this is the case in education, where there are sizeable potential efficiency gains (Sutherland *et al.*, 2007).

The efficiency of public spending could be raised by greater use of contracting out and increased scope for user choice (OECD, 2008b). Some measures have been taken to increase competition in healthcare and education but more needs to be done in these areas.

Further improving the fiscal framework and the role of the Swedish Fiscal Policy Council

Sweden's enviable fiscal position can partly be ascribed to the government's commitment to a strong fiscal framework that includes:

- A surplus target for general government net lending, which is currently formulated as a surplus of 1% of GDP over a business cycle.
- A ceiling for central government expenditures, which is determined three years in advance.
- A balanced budget requirement for local governments.
- A top-down approach for the central government budget. Parliament first decides overall spending and its allocation across broad areas. Once this is done, it is not possible to increase a particular expenditure without reducing others within the same area. The internal government work on its budget proposal follows the same principles.

The independent Swedish Fiscal Policy Council is one of the bodies (alongside the National Institute of Economic Research and the National Financial Management Authority) analysing whether the government is meeting its fiscal objectives. The Fiscal Council also assesses whether fiscal policy is consistent with sustainable long-run growth (Box 1.2). As an EU member, Sweden has also agreed to meet the criteria of the Stability and Growth Pact.

By and large, the objectives of the fiscal framework have been achieved. The net lending target, which has to be met over the cycle, has generally been met over the past decade; even during the recession various indicators did not depart significantly from the target. Going forward, the Ministry of Finance's estimates presented in the October Fiscal Policy Bill point to a surplus according to cyclically-adjusted indicators through 2010-12. The balanced budget rule for local governments has not always been met. The expenditure ceiling has not been breached although it has been circumvented through the use of tax expenditures and by transferring expenditure from one year to another when the ceiling was close to being reached (Calmfors, 2010).

The framework is useful in a number of ways. It has helped anchor fiscal policy following the economic crisis of the early 1990s and allowed Sweden to enter the recent crisis with a welcome fiscal buffer, in contrast to some other OECD countries. Having an explicit framework also helps guide policymakers in setting out fiscal policy and increases transparency and accountability. In addition, there is evidence that fiscal policy targets can nurture fiscal discipline (Guichard *et al.*, 2007). Furthermore, the Swedish Fiscal Policy Council's published reports provide a useful focus for discussing the appropriateness of government policy for ministers, parliamentarians and in the media.

The surplus target has long been set at 1% of GDP and has served Sweden well. When a surplus target was adopted (in 1997), the level was chosen with a view to eliminate the net public debt, which was 25% of GDP at the time, over the next 10 to 15 years. In the event, net debt was eliminated already in 2001 (Boije *et al.*, forthcoming). The government

Box 1.2. The Swedish Fiscal Policy Council

The Swedish Fiscal Policy Council was established in 2007. The proposal to set up such a council was aired in 2002 in connection with the debate on whether or not Sweden should adopt the euro. A commission to assess the impact of joining the euro area on fiscal policy raised the point that, as shocks could be handled only through fiscal policy once in the euro area, there was a risk that fiscal policy would become too lax. To counter that risk, the commission recommended introducing a fiscal policy council (Swedish Government Commission on Stabilisation Policy in the EMU, 2002). Although Sweden did not adopt the euro, the Council was implemented following the 2006 general elections.

Functioning and mandates

The Council is formally an agency under the government, which appoints the eight members for a three-year term. At present, the Council is made up of six academic economists and two former politicians; members do not need to be Swedes.

The mandate of the Council is:

- To assess the extent to which the government's fiscal policy objectives are being achieved.
- To evaluate whether economic developments are in line with healthy long-run growth and sustainable high employment.
- To examine the clarity of the government's budget bill and spring fiscal policy bill, in particular with respect to the grounds given for economic policy changes and the motivations for policy proposals.
- To monitor and evaluate the quality of the government's economic forecasts and the underlying models. The Council does not prepare forecasts.

The only formal requirement is that the Council should produce an annual report for the government after the spring fiscal policy bill. The parliamentary committee overseeing fiscal policy organises a public hearing on the basis of the report with the participation of the Council's chair, the finance minister and one or two outside economic experts. However, the Council has no formal relationship to the Parliament. There is no specific requirement as to whether evaluations should be done *ex post* or *ex ante*. In practice, the Council does both.

Recommendations of the Council

The main points that have been raised so far by the Council have been:

- The absence of proper justification of the 1% of GDP surplus target.
- The lack of clarity regarding the indicator underpinning the surplus target.
- The way the expenditure ceiling has been handled.
- The appropriateness of the amount of fiscal stimulus during the recent economic crisis. The Council recommended a greater discretionary impulse.
- Several issues regarding labour market policies.

has stated that at least over the current term, and as long as necessary for public finances to be sustainable over the longer run, the level of the surplus target shall be 1% of GDP. Nevertheless, in the Budget Bill for 2011, the government has indicated that there is a need to maintain an additional 1% of GDP safety margin up until 2014 on top of the formal 1% surplus target, making some of the proposed reforms conditional on sufficiently robust public finances. This safety margin can however be lowered if the uncertainty surrounding

public finances decreases. This is a prudent strategy in uncertain times, and the additional safety margin can probably be achieved with only limited fiscal tightening and without prejudice to the recovery.

Over time, the surplus target, if it is met, implies an accumulation of net assets. There are pros and cons for accumulating budget surpluses (Price *et al.*, 2008). Financial crises, natural disasters and other unpredictable negative shocks warrant surpluses. However, the indefinite accumulation of surpluses may suggest the private sector is over-taxed and can create the perception that the government has excess resources, potentially increasing pressure for additional inefficient public spending. The government has recently made it clear that the savings implied by the 1% of GDP surplus target would not be used to pre-fund permanent fiscal pressures caused by ageing in particular (Ministry of Finance, 2010b). Insofar as life expectancy continues to rise and enhances well-being, pre-funding favours generations with a longer life expectancy, and thus a higher welfare, at the cost of generations with a shorter life expectancy (OECD, 2008b; Swedish Fiscal Policy Council, 2009). In 2014, the government will reassess the implications of the 1% level of the surplus target for the whole range of objectives that have been stated, namely long-term sustainability of public finances, economic efficiency, income distribution between generations and margins to deal with negative shocks. If the accumulated surpluses do not seem to be justified by these objectives, further reductions in the tax burden may be advisable.

Despite evident success, some aspects of the framework could be improved:

- Defining the surplus target over a business cycle makes it more difficult to assess whether the government is achieving its target. Therefore, the government in practice uses a range of indicators to monitor compliance with the target in real time. However, this is potentially confusing since at times they convey different messages. For example, in the 2010 Budget Bill, the seven-year moving average of the budget balance was going (just) into deficit in 2009 while the other measures suggested the surplus target was being met or exceeded. The Swedish Fiscal Policy Council has proposed to focus on two indicators: the average surplus over the past 10 years, to evaluate whether the target is being met, and a more forward-looking average, more specifically an average including both forecast years and the recent past, in setting policy. In the Spring Fiscal Policy Bill 2010, the government announced that the surplus target has to be assessed mainly on the basis of forward-looking indicators but that other indicators will also still be considered.
- While a Ministry of Finance study argues that the use of creative accounting for the general government expenditure ceiling has been very limited (Boije *et al.*, forthcoming), it would seem preferable to have transparent escape clauses to allow policymakers some flexibility. One possibility would be to require the government to write an open letter explaining why there have been certain deviations from its target. The Swedish Fiscal Policy Council could determine whether a sufficiently significant deviation has occurred.
- Other ways to enhance the fiscal framework have been discussed in the previous *Economic Survey* (OECD, 2008b) and are summarized in Box 1.3.

Box 1.3. Taking stock of structural reform: fiscal framework and fiscal policy

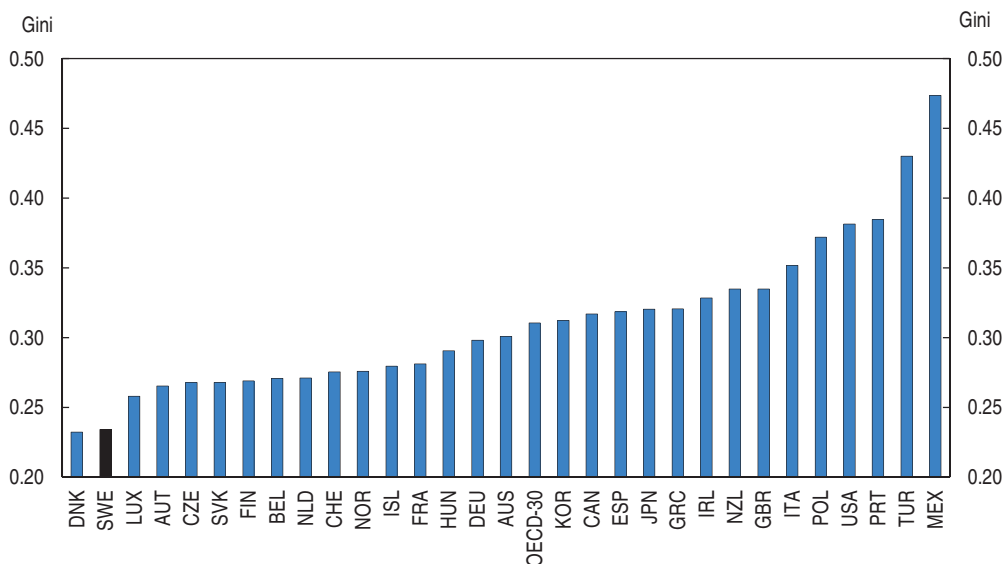
Recommendations made in previous surveys	Action taken since the latest <i>Survey</i>
FISCAL FRAMEWORK AND FISCAL POLICY	
Augment the surplus target with a medium-term debt target to reduce the risks of slippage from year to year.	The fiscal target became a legal obligation in August 2010. The government has to propose a medium-term (surplus) target for general government net lending to Parliament, and has to formulate fiscal policy in accordance with this target. The government must also report to Parliament twice a year on how well the target has been met, and explain how it will be met in the future.
Reduce the pro-cyclicality of the balanced-budget requirement for local governments by basing it on average taxable income over a number of years. Alternatively, central government grants could be adjusted counter-cyclically.	The government has launched an inquiry to consider measures that may help to prevent activities in the local government sector from exacerbating business cycle fluctuations.
Put more emphasis on fiscal sustainability. Use transparent assessment of sustainability in discussing the long-term effects of proposed policies.	A review from the Ministry of Finance discussed the implications of some policies for fiscal sustainability.
Set fiscal targets with reference to the existing stock of assets and liabilities, and the future path of spending and revenues. The Swedish Fiscal Policy Council should be required to formally verify the assumptions and methodologies used. The government's balance sheet should be presented in budget reporting.	No action concerning the setting of fiscal targets with reference to the stock of assets. Some statistics on government capital stock were published in the Spring Fiscal Policy Bill 2010.
To better appreciate the implications of fiscal policy for intergenerational distribution, produce and publish generational accounts using the same data and assumptions as the fiscal sustainability calculations that are already produced.	No new measures although the implications of fiscal policy for intergenerational distribution has been discussed in a review by the Ministry of Finance in 2010.
Consider introducing periodic reviews to assess how new spending pressures arising from greater service demands or technological change could be financed either via private spending or via savings on existing programmes.	No action.
Consider introducing a formal linking of the retirement age to life expectancy.	No action.
Expand user choice and contestability in publicly-funded services.	In the health care and social service sectors, measures have been taken to increase diversity. Apkteket AB's monopoly was abolished in 2009 enabling some medicines to be sold in supermarkets. To foster freedom of choice in elderly care, the government has allocated funding to municipalities to encourage them to prepare and develop a freedom of choice system. Private entities can now operate commercially profitable rail passenger traffic.

While it is too early to assess the impact of the Swedish Fiscal Policy Council, it is now an integral part of the framework and it may have influenced some government decisions. The Council has functioned well up to now. It works closely with other agencies (in particular the National Institute of Economic Research) and can partly benefit from their resources but its own resources are very limited. This *modus operandi* would have to be reconsidered if a lack of own resources were to become a barrier to the fulfilment of its mandate or to independence. In addition, to further bolster the independence of the Swedish Fiscal Policy Council, its members could be appointed by Parliament rather than by the government.

Structural policies to promote growth

While Sweden enjoys a high level of welfare (Jones and Klenow, 2010), reflecting low inequality (Figure 1.7) and high life expectancy, there is room to also promote growth. Though the income gap vis-à-vis leading OECD economies shrank markedly over 1993-2006, Sweden lost some ground in recent years (Figure 1.8). This is mainly attributable to hourly productivity, which slowed starting in 2004 and fell still further behind during the 2008-09 crisis.

Figure 1.7. **Gini coefficients of income inequality**



Note: The income concept used is that of disposable household income in cash, adjusted for household size with an elasticity of 0.5. Data are for the mid-2000s.

Source: *Growing Unequal? Income Distribution and Poverty in OECD Countries* (OECD, 2008).

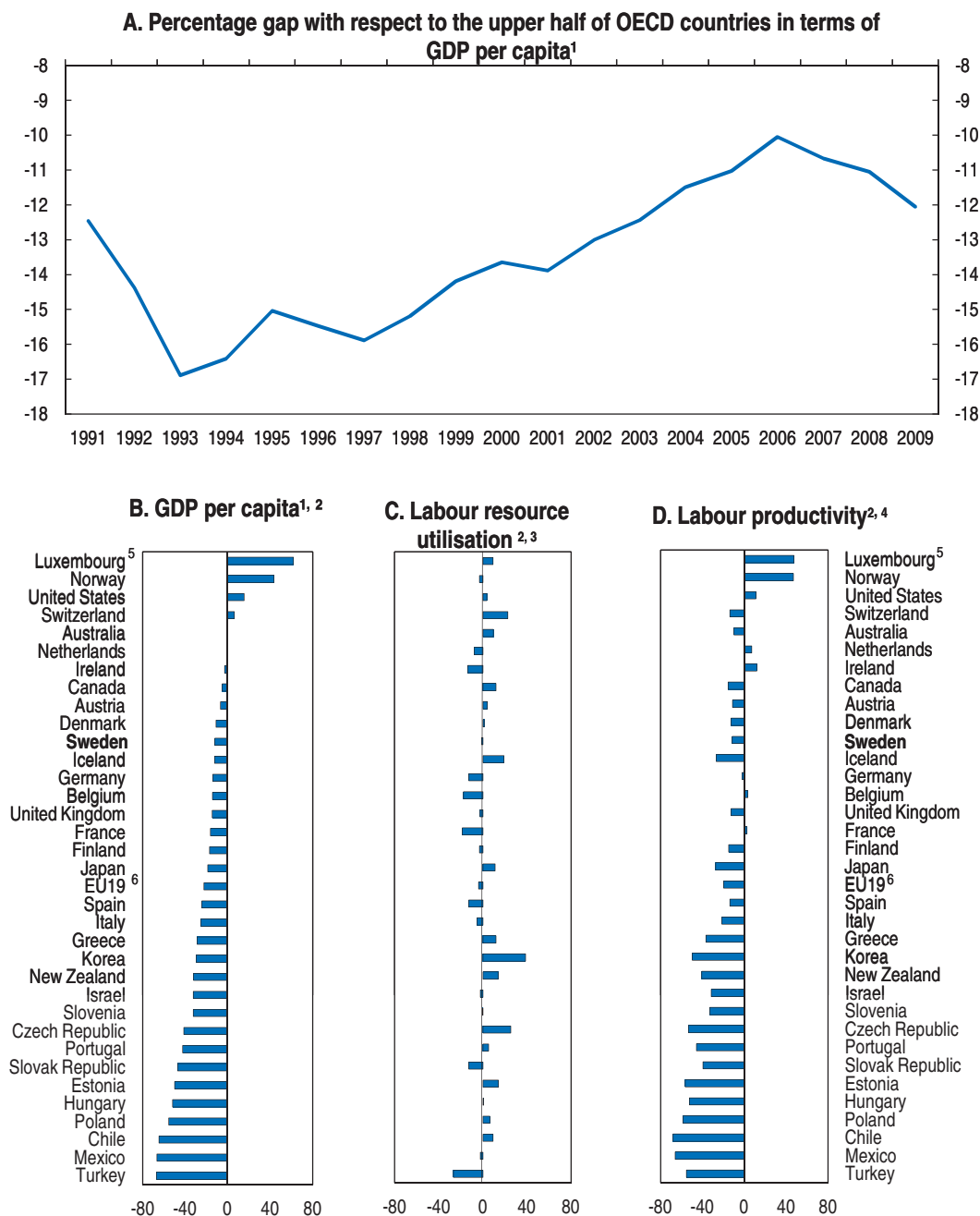
StatLink  <http://dx.doi.org/10.1787/888932367795>

From a longer-term perspective, it is striking that over the past five decades all employment creation occurred in the public sector while employment in the private sector essentially stagnated (Figure 1.9). While this feature is shared with Denmark and Finland, and is probably the mirror image of the “Scandinavian Model” that delivers a high level of equity through an extended public sector, there is scope to increase employment creation in the private sector while maintaining and even raising the quality of public services, as greater competition in the healthcare and education sectors, for instance, can increase the quality of these services (OECD, 2005; OECD, 2008b). Labour market policies are therefore key to promoting long-term growth. They are discussed in depth in Chapter 3, while some other policies are briefly reviewed below and in Box 1.4.

Improving the tax system

In recent years, Sweden has reformed the tax system with a view to promoting growth. Corporate income tax, which was found to be the most inimical to growth in the *OECD Tax and Growth* study (Johansson *et al.*, 2008), has been lowered. The introduction and extension of an earned-income tax credit cut the marginal tax wedge for the low-paid but it is still large for high-income earners and the average tax wedge still exceeds the OECD average. Policies to

Figure 1.8. The GDP per capita gap and its decomposition



1. Relative to the simple average of the highest 15 OECD countries in terms of GDP per capita, based on 2008 purchasing power parities (PPPs). The percentage gaps in labour resource utilisation and labour productivity do not add up exactly to the GDP per capita gap since the decomposition is multiplicative.
2. 2008 for Chile, Israel and Slovenia.
3. Labour resource utilisation is measured as total number of hours worked per capita.
4. Labour productivity is measured as GDP per hour worked.
5. In the case of Luxembourg, the population is augmented by the number of cross-border workers in order to take into account their contribution to GDP.
6. The EU19 is an aggregate covering countries that are members of both the European Union and the OECD. These are the EU15 countries plus the Czech Republic, Hungary, Poland and the Slovak Republic.


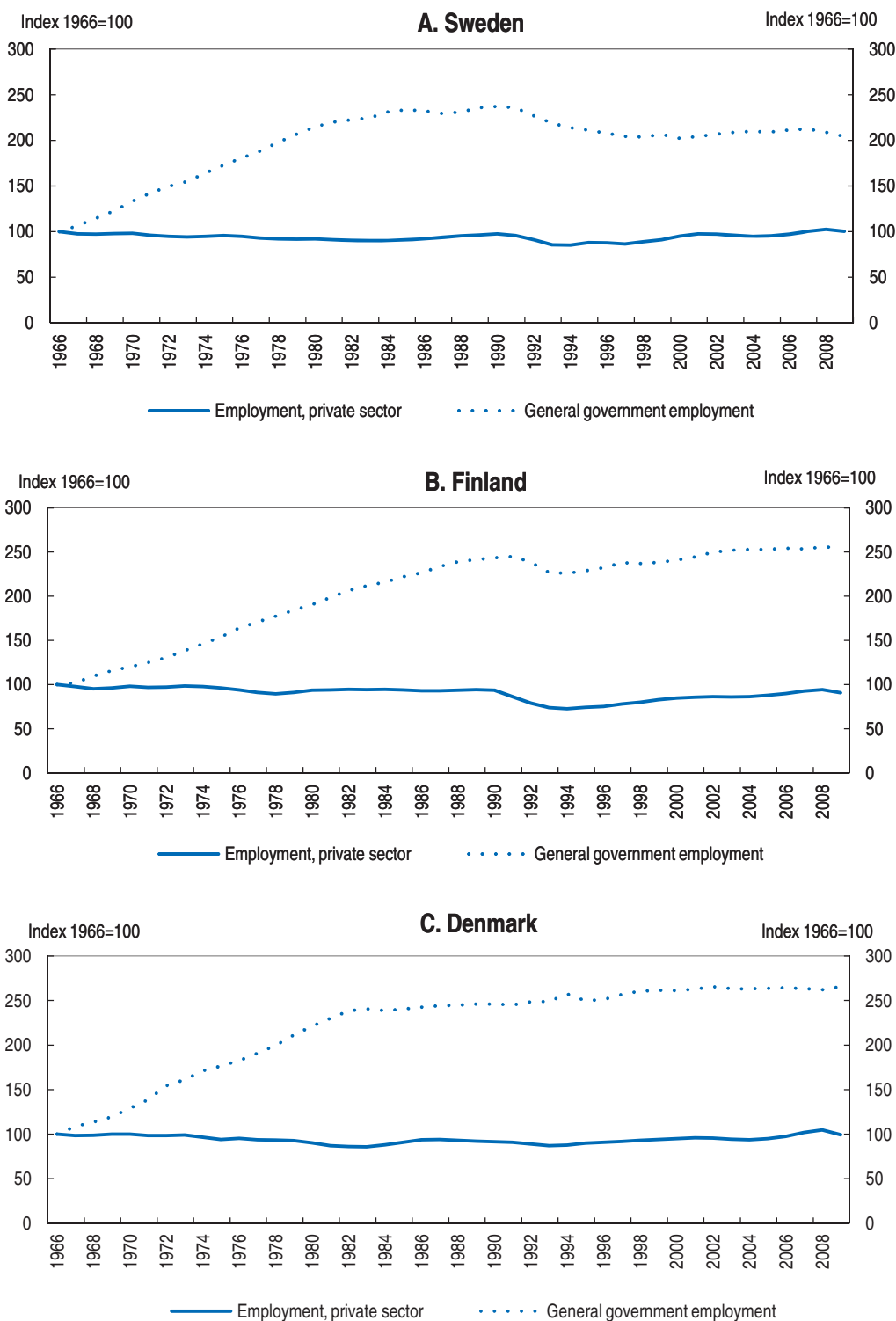

StatLink  <http://dx.doi.org/10.1787/888932367814>

Figure 1.9. **Employment in the private and public sectors in the long run**



StatLink  <http://dx.doi.org/10.1787/888932367833>

reduce the tax wedge so as to raise labour participation are discussed in Chapter 3. To increase hours worked per worker, the marginal effective tax rates need to be further reduced. One possibility, as proposed by the recently appointed government, would be to reduce or even phase out the state income tax, which is a surtax for high income earners (incomes above 103% of average earnings) and starts with a high tax rate (20%). As the income distribution flattens rapidly above this threshold, the losses in revenue for the government would not be very high – the state income tax is expected by the government to be only around 2% of total government revenue in 2011. Furthermore, this loss of revenues could be offset by raising housing taxation, which would involve relatively little economic distortion, through a reinstatement of a housing tax levied in proportion to home value (OECD, 2008b).

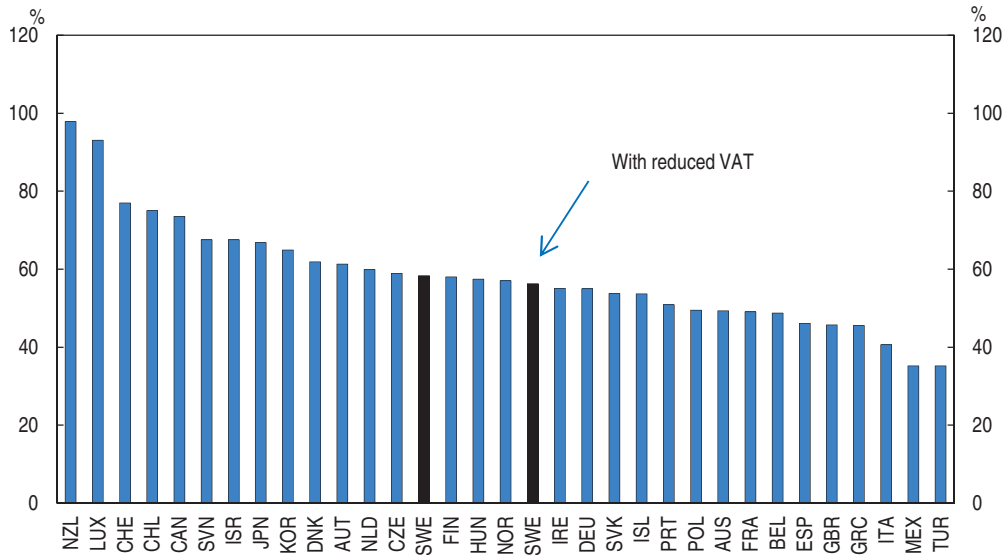
In the *Budget Bill for 2011*, the government announced some permanent tax cuts for people older than 65 to offset the effects of the crisis on pensions and to reduce the difference in income taxes between wage-earners and pensioners. These tax cuts, by increasing income, make it more affordable for people to stop working and thereby, could affect incentives to exit the labour market although the effect is complex, as reflected in the evolving views of the government.² As the proposed cuts are phased out gradually for incomes above 60% of average earnings, they would also increase marginal tax rates and thereby reduce hours worked.

In addition, if fiscal conditions are sufficiently robust, the government plans to cut the VAT on restaurant and catering to increase employment. Cuts in VAT could raise employment through various channels. By lowering prices paid by consumers, they could boost demand and therefore employment. If they are not fully passed on to consumers, lower VAT rates would increase employers' margins, allowing them to hire more workers or to raise wages. However, if firms simply increase their profit margins or if demand is not very elastic to prices, the measure may have only a limited impact on employment. Empirical analyses suggest that VAT cuts in labour-intensive sectors do not have large effects on employment (Conseil des Prélèvements Obligatoires, 2010, European Commission, 2003, Ismer *et al.*, 2010). It has been argued that VAT cuts could have larger impacts on employment in countries like Sweden where the marginal income tax is high for high-income earners and initial VAT rates are high as there is an incentive to "do-things-by-yourself" (Copenhagen Economics, 2007). However, as acknowledged by the same study, lowering VAT may not be the best way to achieve this goal and other policies could boost employment more in this particular sector as well as in others, as discussed in Chapter 3. More generally, having several VAT rates, as is the case in Sweden, can cause uncertainty for businesses and consumers and be a source of distortions. It could be argued that the proposed changes will harmonise the existing multi-layered VAT rate structure for restaurants, hotel accommodation and food. However, while Sweden has one of the highest standard VAT rate in OECD countries, the performance of its VAT system, measured by the gap between current VAT revenues and VAT revenues if the standard rate was broadly applied, is not especially good, owing to various reduced rates (Figure 1.10). The envisaged VAT cut would likely widen this gap further.

Product market reforms

Product market regulation affects productivity growth in the most advanced economies (*e.g.* Bourlès *et al.*, 2010; Conway *et al.*, 2006). Overall, Sweden's product markets are relatively lightly regulated (Figure 1.11). The regulatory framework is favourable to entrepreneurship and puts up few barriers to trade and investment. However, the scope of

Figure 1.10. **VAT revenue ratio**
In 2008

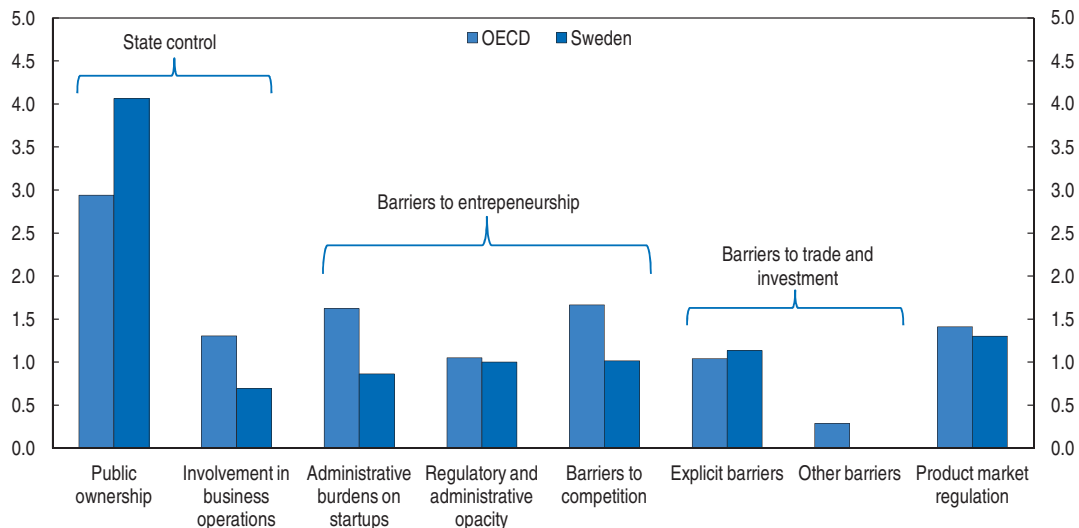


Note: VAT revenue ratio = VAT revenue/[(consumption expenditures – VAT revenue) × standard VAT rate]. The Swedish ratio with reduced VAT is the estimated ratio assuming a restaurant and catering VAT rate of 12% as proposed (instead of 25%), assuming a price elasticity for restaurants of -0.2 (based on Copenhagen Economics, 2007), that consumption of other goods does not change and that government consumption of restaurants and catering is negligibly small.

Source: OECD estimates.

StatLink <http://dx.doi.org/10.1787/888932367852>

Figure 1.11. **Product market regulation**



Note: The indicator score runs from 0 to 6, representing the least to most restrictive regulatory regime.

Source: OECD Product Market Regulation Database.

StatLink <http://dx.doi.org/10.1787/888932367871>

public ownership is still large compared to other OECD countries. State ownership of businesses may hold back innovation broadly defined. With the recovery well under way, the government should continue to proceed with privatisation, in particular by selling companies that already operate under market conditions. Market liberalisation, as started in the pharmaceutical sector, should also continue.

Box 1.4. Taking stock of structural reform: state ownership and taxation

Recommendations made in previous surveys	Action taken since the latest <i>Survey</i>
STATE OWNERSHIP	
Reduce state ownership, with emphasis on separating natural monopolies from competitive activities. Privatised government-owned companies currently operating in competitive markets.	The pharmaceutical monopoly of Apoteket has been abolished and it is now possible for other firms to sell medicine.
Expose all the activities of the state-owned passenger rail company to competition and require it to operate under a hard budget constraint with no prospects of further government capital injections to bail it out.	In rail transport, private entities can now operate commercially profitable passenger traffic lines.
For firms that have been given particular societal goals, give consideration to whether there are forms of policy intervention other than public ownership that might achieve the same goals. For example, the need for government ownership of venture capital funds and R&D companies would seem to be limited.	No action.
TAXATION	
Continue to cut income taxes in ways that maximise the effect on employment rates and hours worked. Raise the threshold for where the state income tax applies or cut its rate.	The in-work tax credit, introduced in 2007, has been enlarged in subsequent years. In 2009 the lower threshold for the state income tax was raised and employer social security contributions were reduced.
Raise the effective rate of VAT to make room for greater income tax cuts.	In the 2008 Budget, a number of indirect taxes were increased, including taxes on tobacco, alcohol and carbon dioxide.
Continue with reductions of the corporate income tax rate.	Firms' costs have been reduced, thanks to cuts in social security contributions and the corporate tax in 2009.
Consider tougher sanctions for tax and benefit fraud without adding to the system's complexity.	As part of the sickness insurance reform, a rehabilitation process with fixed time limits for testing work capacity and a ceiling on the maximum number of days of sickness benefits were introduced. The government has also taken measures to reduce incorrect payments from the social security systems: a special law on social security fraud has been introduced and a number of statutes have been changed to facilitate the exchange of information between public authorities.
Reinstate a housing tax levied in proportion to home value.	No action.

Notes

1. S1 is the required adjustment in the structural primary balance to achieve a debt ratio of 60% of GDP by 2060, including the adjustment required to finance the increase in public expenditure due to ageing. S2 is the required adjustment to stabilise the debt ratio (at no specific level), including the adjustment to finance the increase in public expenditure due to ageing over an infinite horizon. In both cases, non-age related and non-interest spending is assumed to remain constant as a share of GDP in the relevant time period.
2. In 2007, the government argued that differentiating tax instruments, specifically tax credits by age, could induce older workers to stay longer in the labour force (Ministry of Finance, 2007), while in the Budget Bill for 2011 the position is that there is no rationale for a difference in the taxation of income between wage-earners and pensioners.

Bibliography

- Bi, H. and E. M. Leeper, (2010), "Sovereign Debt Risk Premia and Fiscal Policy in Sweden", *Studier i finanspolitik* 2010/3, Swedish Fiscal Policy Council.
- Boije, R., A. Kainelainen and J. Norlin (forthcoming), "The Swedish Fiscal Policy Framework", *Nordic Economic Policy Review*.

- Bourlès, R., G. Cette, J. Lopez, J. Mairesse, and G. Nicoletti (2010), "Do Product Market Regulations in Upstream Sectors Curb Productivity Growth? Panel Data Evidence for OECD Countries", *OECD Economics Department Working Papers*, No. 791.
- Calmfors, L. (2010), "The Swedish Fiscal Policy Council – Experiences and Lessons".
- Conseil des Prélèvements Obligatoires (2010), *Entreprises et "niches" fiscales et sociales : Des dispositifs dérogatoires nombreux*, www.ccomptes.fr/fr/CPO/Accueil.html.
- Conway, P., D. de Rosa, G. Nicoletti and F. Steiner (2006), "Product Market Regulation and Productivity Convergence", *OECD Economic Studies*, No. 43.
- Copenhagen Economics (2007), *Study on Reduced VAT Applied to Goods and Services in the Member States of the European Union*, http://ec.europa.eu/taxation_customs/taxation/vat/how_vat_works/rates/index_en.htm.
- Dolls, M., C. Fuest and A. Peichl (2010), "Automatic Stabilizers and Economic Crisis: US vs. Europe", *NBER Working Papers*, No. 16275.
- European Commission (2003), *Evaluation Report on the Experimental Application of a Reduced Rate of VAT to Certain Labour-intensive Industries*, Brussels.
- European Commission (2009), *Sustainability Report 2009*, Brussels.
- Floden, M. (2009), "Automatic Stabilizers in Sweden 1998-2009", *Rapport till Finanspolitiska rådet 2009/2*.
- Girouard, N. and C. André (2005), "Measuring Cyclically-Adjusted Budget Balances for OECD Countries", *OECD Economics Department Working Papers*, No. 434.
- Guichard, S., M. Kennedy, E. Wurzel and C. André (2007), "What Promoted Fiscal Consolidation: OECD Country Experiences", *OECD Economics Department Working Papers*, No. 553.
- Ismer, R., A. Kaul, W. Reiß and S. Rath (2010), *Analyse und Bewertung der Strukturen von Regel- und ermäßigten Sätzen bei der Umsatzbesteuerung unter sozial-, wirtschafts-, steuer- und haushaltspolitischen Gesichtspunkten*, report commissioned by the German Ministry of Finance.
- Johansson, Å., C. Heady, J. Arnold, B. Brys and L. Vartia (2008), "Tax and Economic Growth", *OECD Economics Department Working Papers*, No. 620.
- Jones, C. and P. Klenow (2010), "Beyond GDP? Welfare across Countries and Time", *NBER Working Papers*, No. 16352.
- Laeven, L. and F. Valencia (2008), "Systemic Banking Crises: A New Database", *IMF Working Papers*, WP/08/224.
- Laeven, L. and F. Valencia (2010), "Resolution of Banking Crises: The Good, the Bad and the Ugly", *IMF Working Papers*, WP/10/146.
- Ministry of Finance (2007), *Ett förstärkt jobbskatteavdrag*, Promemoria, Stockholm.
- Ministry of Finance (2010a), *Budgetpropositionen för 2011*, Prop. 2010/11:1, Stockholm.
- Ministry of Finance (2010b), *Utvärdering av överskottsmålet*, Ds 2010.4, Stockholm.
- OECD (2005), *OECD Economic Surveys: Sweden*, Paris.
- OECD (2008a), *OECD Economic Outlook*, No. 84, Paris.
- OECD (2008b), *OECD Economic Surveys: Sweden*, Paris.
- OECD (2010), *OECD Economic Outlook*, No. 87, Paris.
- Price, R., I. Joumard, C. André and M. Minegishi (2008), "Strategies for Countries with Favourable Fiscal Positions", *OECD Economics Department Working Papers*, No. 655.
- Sutherland, D., R. Price, I. Joumard and C. Nicq (2007), "Performance Indicators for Public Spending Efficiency in Primary and Secondary Education", *OECD Economics Department Working Papers*, No. 546.
- Swedish Fiscal Policy Council (2008), *Report of the Fiscal Policy Council 2008*, Stockholm.
- Swedish Fiscal Policy Council (2009), *Report of the Fiscal Policy Council 2009*, Stockholm.
- Swedish Fiscal Policy Council (2010), *Report of the Fiscal Policy Council 2010*, Stockholm.
- Swedish Government Commission on Stabilisation Policy in the EMU (2002), *Stabiliseringspolitik i valutaunionen*, SOU 2002:16, Fritzes, Stockholm.

Chapter 2

Monetary policy and the financial system during and after the crisis

In the wake of the global financial and economic crisis, the Swedish central bank aggressively cut interest rates and introduced an array of unconventional policy measures. This helped limit the depth and length of the recession and facilitated a strong recovery. Moreover, the Riksbank has successfully maintained low and stable inflation, and longer-term inflation expectations are well anchored, notwithstanding occasional communication problems. While the financial sector experienced stress, in part due to bank exposures to the Baltic countries, it coped well on the whole. However, there is room to improve financial sector regulation and to revisit the financial supervision framework.

The recent economic crisis put monetary policy authorities and financial systems to the test in many countries, including Sweden. The central bank (the Riksbank) aggressively lowered interest rates and, together with other Swedish authorities, introduced additional policy measures which have helped the financial sector operate during the recent turmoil. This chapter examines the Riksbank's performance, looking at how financial markets have operated during the crisis as well as at inflation and other outcomes. It also discusses how monetary policy should respond to asset price developments and whether there are grounds for changing the Riksbank's target. The chapter then reviews key issues facing the financial system during the crisis and turns to policies that will help make the system more resilient going forward, including changes in regulation and more generally in the supervision framework.

Monetary policy during the crisis and issues going forward

The Riksbank responded forcefully to the crisis

In the wake of the global financial crisis that began in the second half of 2007 and intensified in the second half of 2008, Sweden suffered an extreme economic downturn (Chapter 1). International financial market turmoil and the sharp fall in world trade hurt the export-dependent Swedish economy. The Riksbank, which had been in tightening mode through mid-September 2008,¹ started to aggressively cut its main policy instrument, moving from 4.75% to 0.25% by mid-2009, the lowest level since the introduction of inflation targeting in the mid-1990s. The Riksbank, in conjunction with other government bodies, also took a number of unconventional measures to support the economy (Box 2.1), even though it refrained from using some of the non-conventional instruments deployed by other central banks (Table 2.1).

Table 2.1. **Non-conventional measures taken during the crisis by selected central banks**

	RB	Fed	ECB	BoJ	BoE	BoC	SNB
Increased liquidity provision to financial institutions	X	X	X	X	X	X	X
Direct intervention in certain financial market segments		X	X	X	X		X
Purchase of government bonds		X	X	X	X		
Support to specific institutions	X	X		X	X		X

Notes: RB refers to the Riksbank, Fed to the US Federal Reserve, ECB to the European Central Bank, BoJ to the Bank of Japan, BoE to the Bank of England, BoC to the Bank of Canada and SNB to the Swiss National Bank.

Source: ECB (2010) and Minegishi and Cournède (2010).

The Riksbank has subsequently stopped many of its unconventional measures and it started to gradually raise interest rates from July 2010. To assess the effectiveness of these policy actions, it is useful to first look at how monetary policy decisions have been transmitted to the money market and the retail borrowing market during the crisis.

Box 2.1. Special measures taken in response to the financial crisis

Unconventional measures taken by the central bank

- Longer-term credit facilities

In October 2008, loans were given with a fixed rate decided through a single price auction. From February 2009 the liquidity supporting loans started to be given at a variable rate with a maturity of three and six months. In May 2009 it was decided to add loans with a maturity of 12 months to the programme. In February 2010 the Riksbank announced that it would cease to offer loans with a maturity of 12 months, and the last auction offering loans with a maturity of 12 months loans was held the same month. At the same time the Riksbank increased the premium for loans with maturities of three and six months. In April 2010 the Riksbank announced that it would cease to provide loans at maturities of three and six months. These loans were replaced by loans with a maturity of 28 days.

Since July 2009 fixed-rate loans with a maturity of 11 and 12 months have been provided. All these loans have matured during 2010 and not been renewed.

- Credit facility against commercial paper as collateral

To facilitate the supply of credit to non-financial companies, a credit facility where counterparts could use commercial paper with a maturity of up to one year as collateral was started in October 2008. The facility was closed in September 2009 due to lack of demand.

- Reduced collateral requirements

In September 2008 the limitation on the share of covered bonds that can be used as collateral in the payment system was relaxed, and in October 2008 it was removed altogether. Also the minimum credit rating requirement for long-term securities was lowered.

- Extension of eligible counterparties

In April 2009 the group of eligible counterparties was extended to give financial institutions with a registered office in Sweden the opportunity to have access to the temporary credit facilities.

- Swap agreements were made with the US Federal Reserve, the European Central Bank and other central banks.

- Longer-term credit facility in US dollars

In September 2008 the Riksbank offered counterparties loans in US dollars for a term of both one and three months. This was stopped in 2009 due to lack of demand.

- Special liquidity assistance

Special liquidity assistance was provided to Kaupthing Bank Sverige AB and Carnegie Investment Bank AB of up to SEK 5 billion each in October 2008.

- Strengthening of foreign exchange reserves

The Riksbank in May 2009 borrowed the equivalent of SEK 100 billion in foreign currency to be able to provide sufficient foreign currency to Swedish financial institutions.

- Issuance of Riksbank Certificates (debt certificates)

The Riksbank in October 2008 started issuing debt certificates with a maturity of seven days, to absorb the liquidity surplus in the money market; subsequently it has issued certificates of longer maturity.

Box 2.1. Special measures taken in response to the financial crisis (cont.)**Measures taken by other government bodies**

- Increased deposit guarantee

The government increased the deposit guarantee for current accounts from SEK 250 000 to SEK 500 000. The guarantee was extended to cover all types of deposits.

- Bank guarantee and capital infusion programmes

Certain financial institutions were permitted to contract with the government to guarantee part of their borrowing (i.e. for a charge the government promised to intervene if institutions could not pay their lenders), though not all major banks participated. The National Debt Office (NDO) has been permitted to advance capital to banks. This programme is limited to SEK 50 billion. The government guarantee and recapitalisation schemes are scheduled to end in 2011.

- Stabilisation fund

To finance any government measures to support the financial system, a stabilisation fund has been established financed by a special stability fee for all credit institutions. In 2009 and 2010 the annual fee is 0.018% of total liabilities minus equity capital and some other adjustments and it does not apply to foreign subsidiaries. Fees will double in 2011. The aim is that this fund will amount to an average of 2½ per cent of GDP within 15 years.

- Special support to exporters and smaller firms

The government increased its support to Swedish companies by injecting funds into ALMI (a government-owned financing and business development agency) and providing various forms of support to the export credit corporation (Svensk Exportkredit). The purpose was to facilitate borrowing for exporters and for small and medium-sized enterprises in general. In addition the government increased credit guarantees through the Export Credits Guarantee Board (Exportkreditnämnden).

- Treasury bills were issued by the National Debt Office to satisfy the increased demand for high quality securities.

- The government also changed the statutes of SBAB (a state-owned company involved in mortgages) to enable it to broaden its activities. However the changes came too late to have an effect on the provision of credit during the crisis (NDO, 2010).

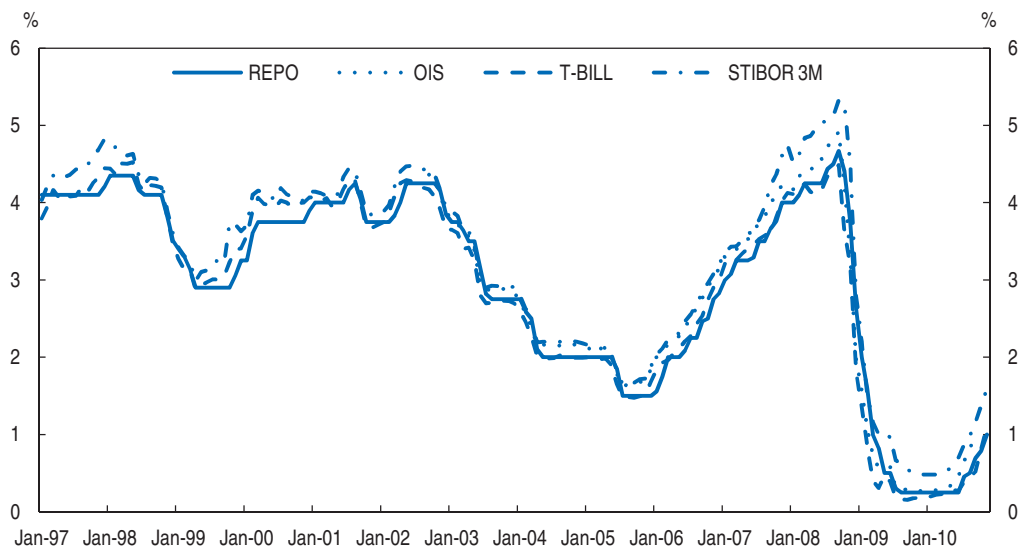
- The government also introduced an action plan for the automotive industry including credit guarantees.

Money markets were stressed during the crisis

Money market rates had moved closely together over the decade preceding the global financial crisis with occasionally larger deviations, such as during the international financial turbulence in 1997-98 and the bursting of the dotcom bubble in 2000-01 (Figure 2.1). Sizeable deviations have also occurred since the beginning of the recent financial crisis. This reflects market stress, as illustrated by the spread between unsecured interbank lending and Treasury bill rates (the TED-spread), which measures the extra return that an investor requires for lending to a bank rather than to the government. Stress in money markets increased from the summer of 2007 onwards, culminating in October 2008, after the bankruptcy of Lehman Brothers, when the TED-spread widened to over 160 basis points, as against an average of about 20 basis points over the five years to

mid-2007 (Figure 2.2). While the spread has narrowed significantly since late 2008, it has widened somewhat more recently, possibly associated with the market adjusting to the withdrawal of the Riksbank's extraordinary policy measures. However, the spread between the interbank rate and the overnight indexed swap rate has not risen, suggesting that perceived risk has not increased significantly.

Figure 2.1. **Swedish money market interest rates**

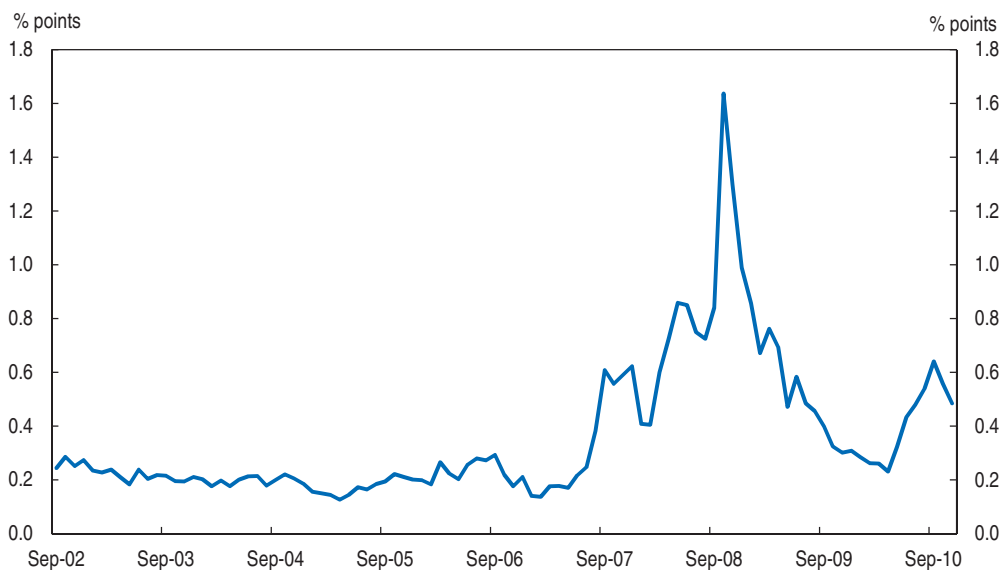


Note: STIBOR 3M is the 3-month unsecured interbank rate (the Stockholm Interbank Offered Rate), T-bill is the 3-month treasury bill rate and OIS is the overnight index swap rate with 3 months maturity (a measure of the expected policy rate).

Source: Reuters and Riksbank.


StatLink  <http://dx.doi.org/10.1787/888932367890>

Figure 2.2. **TED-spread**



Note: TED-spread is the spread between the 3-month STIBOR and the 3-month Treasury bill rate.

Source: Riksbank.

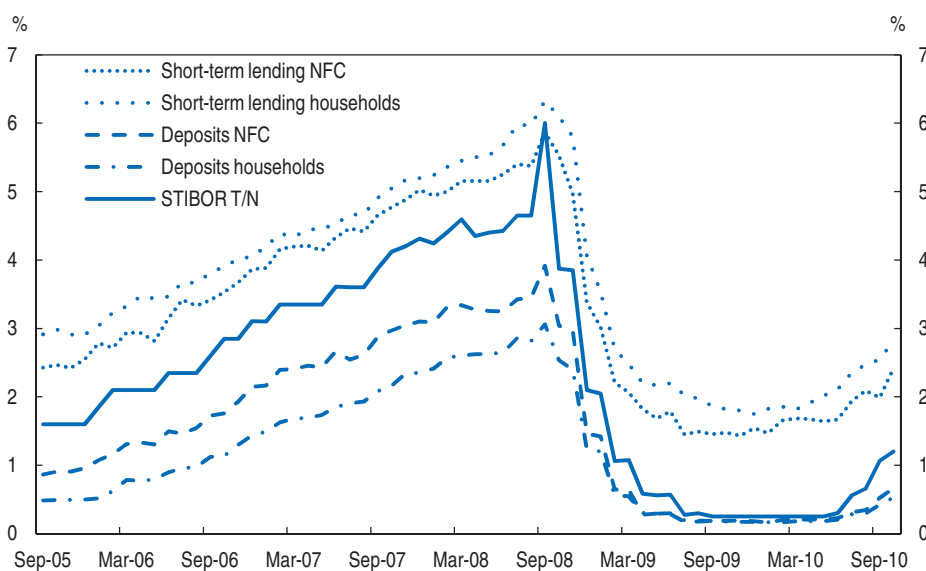
StatLink  <http://dx.doi.org/10.1787/888932367909>

During this period of heightened stress, there was an unwillingness to accept anything except government securities (such as Swedish T-bills), which amongst other things made it difficult to conduct repo (repurchase agreement) transactions for covered bonds. In response, the Swedish National Debt Office (NDO) released a large number of T-bills onto the market via repos and new issues. The NDO then used the funds from these transactions to conduct reverse repo transactions in covered bonds, which improved the funding situation for these securities (Riksbank, 2009). The Riksbank was able to steer interest rates to stimulatory levels, despite heightened spreads, by aggressively reducing policy rates.

Some retail markets were adversely affected by the crisis

Historically, retail bank interest rates have tended to move relatively closely with money market interest rates of similar maturities (Figures 2.3 and 2.4). Up to mid-2007, banks completely passed on changes in money market rates to the retail level in the long run, though the pass-through was sluggish (Hansen and Welz, forthcoming). More recently, the pass-through into long-term funding rates has been impaired, though it improved during 2009. The pass-through into shorter maturities continued to behave normally. This suggests that there was scope for monetary policy to influence retail rates during the crisis.

Figure 2.3. **Money market and short-term retail lending and deposit rates**



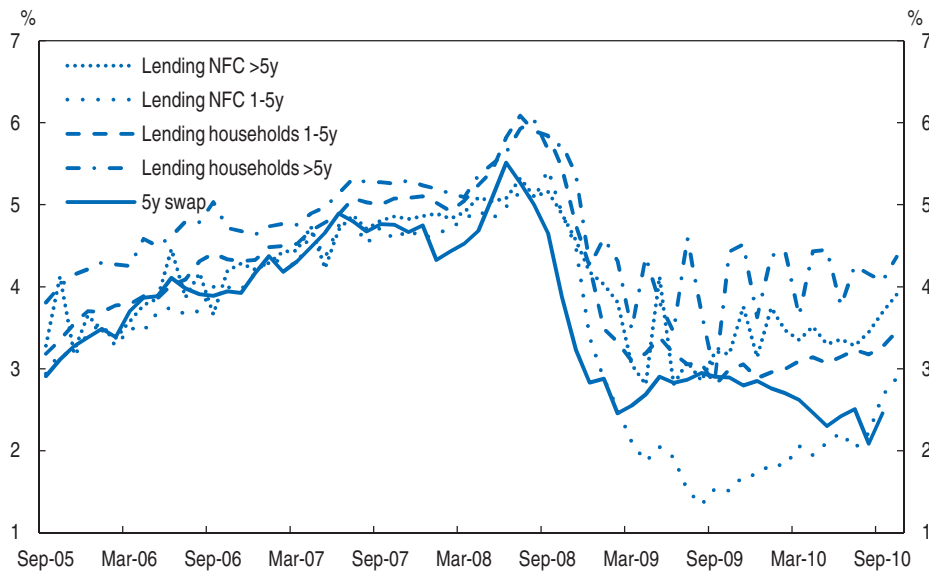
Note: STIBOR T/N is the money market tomorrow next unsecured interbank lending rate. Short-term lending rates are retail rates with an interest rate maturity below 3 months. NFC stands for non-financial corporations.

Source: Riksbank and Statistics Sweden.

StatLink  <http://dx.doi.org/10.1787/888932367928>


Funding has been more difficult

During the crisis many banks had funding problems and lending, especially to firms, weakened substantially. However, a slowdown in lending is unsurprising given a substantial decline in demand. Ekici *et al.* (2009) argue that there was no serious credit crunch and that the only major problem was with securities issuance in foreign currency, a problem addressed through Riksbank foreign currency lending. Moreover, a spring 2010

Figure 2.4. **Money market and long-term retail lending and deposit rates**

Note: NFC stands for non-financial corporations. 5y swap is the money market yield on the 5-year swap.

Source: Datastream, Riksbank and Statistics Sweden.

StatLink  <http://dx.doi.org/10.1787/888932367947>

survey of market participants suggested that the worse of the financial stress was over (Riksbank, 2010a) and some other indicators also point to an improving situation with growth in bank lending to households having picked up since mid-2009 and signs that growth in lending to firms is turning around. However, a more recent survey conducted in the autumn of 2010 suggests that only 40% of market participants thought that financial markets had returned to normal, compared with 60% in the spring (Riksbank, 2010b).

Despite near-zero interest rates, key markets have continued to operate

Another potential challenge for policy-makers was that with durably close-to-zero interest rates, market participants might lose familiarity with trading in particular markets, leading to problems in these markets. There were some technical problems as computer programmes could not handle negative rates but these could be solved. More significantly, a number of financial market instrument interest rates have been near zero or even negative and yet participants have been willing to trade them. Volumes in the spot market for government bonds have been relatively stable since mid-2008 and, while repo volumes for these securities have declined significantly, repurchase agreements for some particularly attractive Swedish securities have traded for as low as $-\frac{1}{4}$ percentage points (Beechey and Elmér, 2009, and OECD calculations). Indeed, in the July 2009 Riksbank Executive Board meeting, Deputy Governor Svensson made a case that the Riksbank policy repo rate could be reduced to zero and left open the possibility it could be reduced even further.

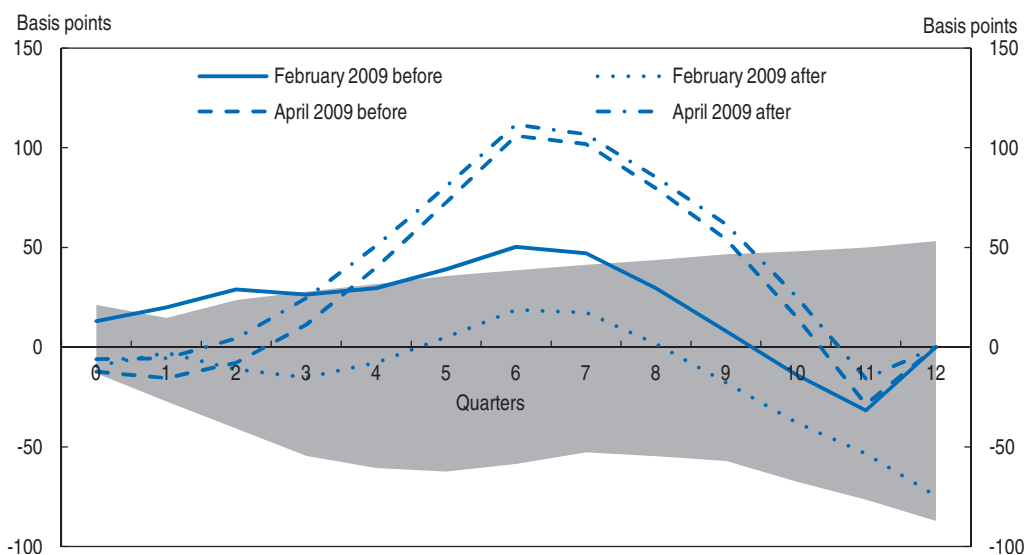
Interest rate expectations have deviated from the Riksbank's repo rate forecast

While the functioning of interest rate markets appears not to have been adversely affected by the proximity of the zero bound, the divergence in 2009 between estimated market expectations of future repo rates, as measured by implied forward rates, and the Riksbank's projections suggests that the repo forecast was not credible, possibly reflecting

lack of experience of both markets and the Riksbank with near zero interest rates. If markets and the Riksbank have a similar understanding of how the economy will evolve and how the Riksbank sets policy, market expectations and the Riksbank projections should be similar. Indeed, over 2007-08 they were usually relatively close at short horizons, even as policy interest rates approached zero, suggesting the Riksbank had managed expectations well. Around the Riksbank monetary policy publication dates during the two years to February 2009, market expectations were at most about 50 basis points away from the Riksbank projections (Figure 2.5). However, by April 2009, they were significantly higher, by over 100 basis points six quarters or so into the forecast. Over the rest of 2009, the market continued to expect a much more rapid tightening in 2010 than the Riksbank was projecting.


Figure 2.5. **Deviation of market expectations from Riksbank repo projections**

Before and after publications, quarters after forecast



Note: Shading indicates the range of deviations around publication dates during 2007 and 2008.

Source: Riksbank (2010c).

StatLink  <http://dx.doi.org/10.1787/888932367966>

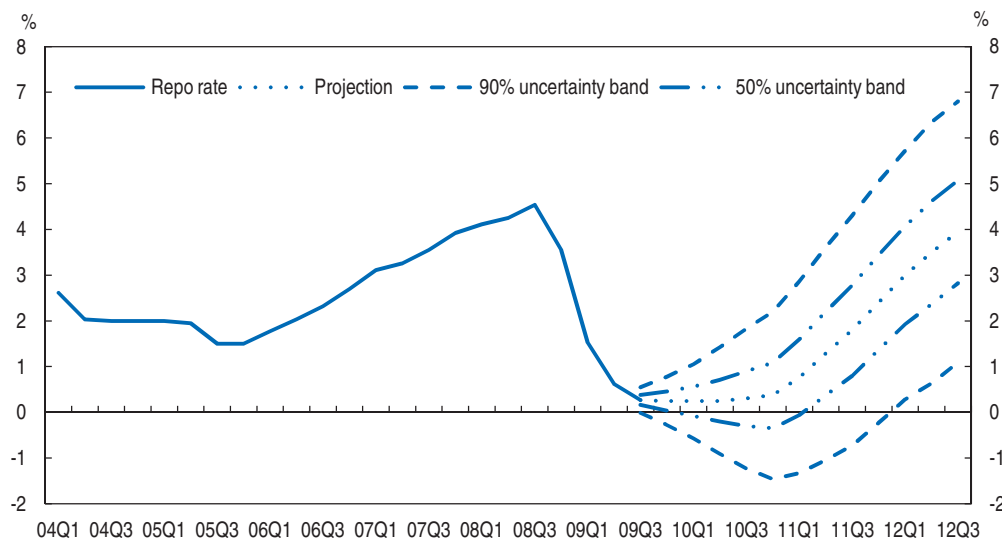
This divergence between market expectations, as measured by implied forward rates, and Riksbank projections could reflect a number of factors. First, these measures of expectations, which are inferred from futures data, could misstate true expectations due to uncertainty surrounding the risk premium (Riksbank, 2010c). However, survey measures of expectations were also elevated. Second, the expectations could reflect that markets saw more inflationary pressures than the Riksbank (as they anticipated stronger GDP growth, higher inflation or both) and/or held a different view about how the Riksbank would respond to these developments. However, it is unlikely that a more inflationary view would explain all of the difference between the repo forecasts and market expectations. One indication of this is that, in October 2009, when the market was still expecting a more aggressive tightening than the Riksbank, Consensus Forecasts had lower GDP growth forecasts than the Riksbank for 2009 and 2010 and only slightly higher inflation forecasts.

The divergence between implied forward rates and the Riksbank repo projections may have also reflected differences in what the two forecasts represent, especially with interest

rates close to zero. If there is a lower bound to interest rates around zero, the Riksbank projections of around zero may have been interpreted as a minimum (but still modal or, in other words, most likely) forecast. However, the Riksbank reported repo rate projections which suggested an over 25% chance that the repo rate would turn negative while also noting that the bands did not take into account the possibility of a lower bound (see the July 2009 Riksbank repo rate projections in Figure 2.6). In contrast, markets may have reported a mean forecast which would be higher than the Riksbank forecast, reflecting that the risks to the Riksbank's forecast were mainly on the upside. Furthermore, the Riksbank changing what was reported may not have been helpful (in the February 2009 *Monetary Policy Report* the graphs assigned zero probability to negative repo rates). The Riksbank could possibly have been clearer by presenting bands that, when relevant, better reflected the presence of a lower bound to interest rates.


In the course of 2010, market expectations, as measured by implied forward rates, have been significantly below the Riksbank's projected repo path, perhaps reflecting that the Riksbank may be continuing to experience difficulties in steering expectations. However, recent survey measures of repo expectations have not been as low as implied by forward rates. Indeed, towards the end of 2010, they have been broadly in line with the Riksbank's repo rate forecast.

Figure 2.6. **Riksbank July 2009 repo projections**



Note: Uncertainty bands reflect the x% probability that the outcome will occur within the band at any point in time, based on historical forecast errors of risk-adjusted market rates in predicting future repo rates. Unlike the original, this graph only reports the 90% and 50% uncertainty bands. The Riksbank notes that the bands do not take account of the possibility of a lower bound.

Source: Riksbank July 2009 *Monetary Policy Report*.

StatLink  <http://dx.doi.org/10.1787/888932367985>

As conditions improve, stimulus will need to be withdrawn

Once unconventional policies to support the economy and financial markets are no longer required, it is desirable to withdraw them as soon as practical. First, central banks have little experience in assessing and calibrating their likely effects. Second, by their non-standardness, it is more difficult to easily communicate their appropriateness and likely effectiveness. Third, prolonged use of unconventional policies, together with

extraordinary low interest rates, may lead to a distorted allocation of capital and excessive risk-taking (White, 2009). Partly because of the extraordinary nature of these measures it can be difficult to assess when to withdraw them. However, it is advisable to do so slowly and gradually, while carefully monitoring financial developments and having policy options available if there is a deterioration in financing availability.

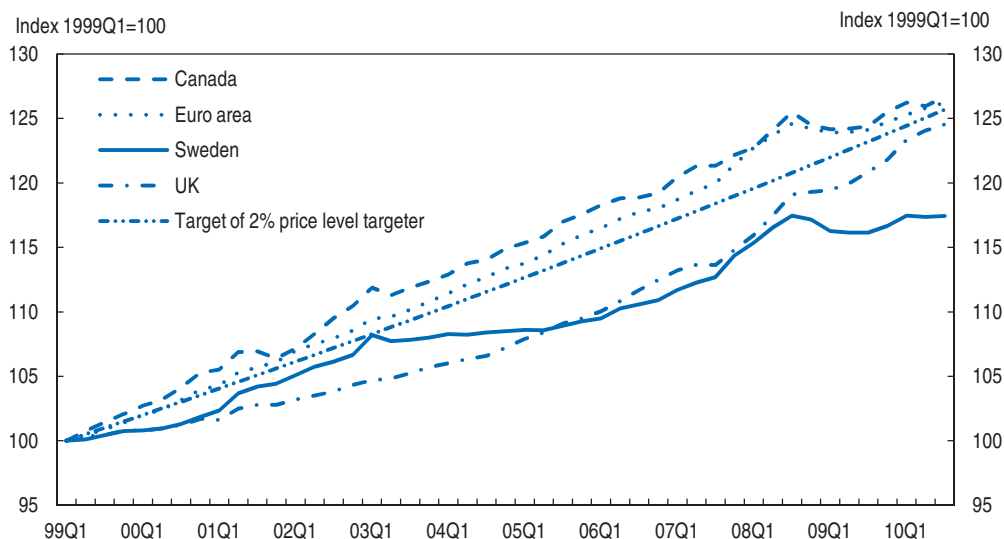
Fortunately, thanks to the way the Riksbank designed many programmes, exit is relatively easy as some measures unwind automatically. For example, liquidity provision was undertaken through repos which can be phased out naturally when they expire. Also, the Riksbank has already made a number of other moves to unwind unconventional measures. For example, the last 12-month maturity loan has been made. The credit facility that provided loans against commercial paper as collateral has already been closed due to lack of demand, and so has the credit facility providing loans in US dollars. However, some measures, specifically the relaxation of collateral requirements, would require a more active decision by the central bank to unwind them.

A related challenge will be at what pace to continue to raise interest rates. GDP has been growing for a number of quarters, suggesting that conditions are beginning to normalise. Household lending growth has picked up since mid-2009 and house prices have risen substantially, so possibly interest rates might need to be raised more aggressively from their still extremely low levels. However, the global economic environment remains highly uncertain. Moreover, monetary policy may currently be more potent than in the past as Swedish loan-to-value ratios are high by historical standards (Walentin and Sellin, 2010). In light of this and the absence of imminent inflationary pressures, a gradual and cautious raising of interest rates is appropriate, conditional on a normalisation of financial and economic conditions.

In many respects, the Riksbank's approach to monetary policy has been successful


Over and above these recent challenges, a fuller assessment of the Riksbank's performance should examine how it achieved its stated objectives over the longer run. The Riksbank has a headline CPI inflation target of 2%, which was long expressed with a band of $\pm 1\%$. In June 2010, however, this band was dropped. The removal of the band is not unreasonable, as inflation had been outside its target band around half the time since the mid-1990s. Moreover, the band did not serve as a formal accountability device, in contrast to the United Kingdom. Even so, there may now be a greater need for the Riksbank to clearly explain how it is trying to achieve its target and what the benchmarks are for assessing its performance.

On a number of criteria, the Riksbank has run policy well (Box 2.2; Svensson, 2009a and 2009b). It appears to have kept longer-term inflation expectations well-anchored and it has kept inflation under tight control, albeit sometimes erring on the low side, both with respect to its target and compared to inflation in a number of other countries with explicit or implicit inflation targets of 2% or so (Figures 2.7 and 2.8). Indeed, in Sweden CPI inflation averaged $1\frac{1}{4}$ per cent since 1995. Benign supply developments, like surprisingly high productivity growth, played a role in the low inflation outcomes (Riksbank, 2007). Nevertheless, persistent undershooting of the target may be a signal that economic analysis and forecasting may not be capturing why inflation is consistently lower than anticipated and hence may lead to further undershooting in the future (Giavazzi and Mishkin, 2006).

Figure 2.7. **Price developments**

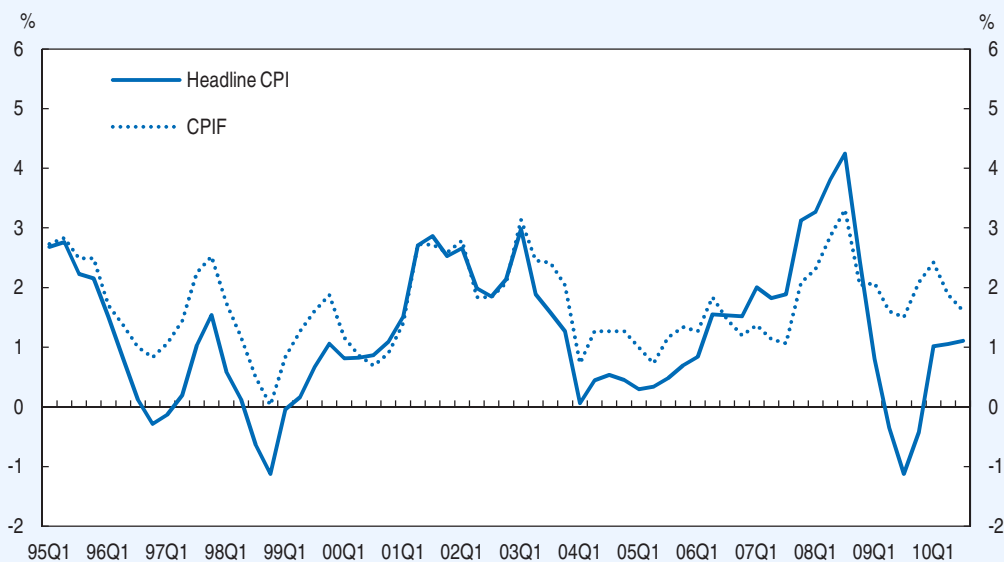
Note: CPI for all economies except the euro area (HICP). All four economies have CPI/HICP inflation targets which could be characterised as being around 2%, though none of them pursues a price level target.

Source: OECD Economic Outlook 88 Database.


StatLink  <http://dx.doi.org/10.1787/888932368004>

Box 2.2. How well has the Riksbank conducted monetary policy?

Based on CPI inflation outcomes, the Riksbank has been moderately successful in achieving its 2% target (Figure 2.8). Average inflation since 1995 has been 1.2% and often quiet distant from the target with a standard deviation of 1.2. In comparison, the euro area (14) has achieved an average HICP inflation of 2% since 1999 (with a standard deviation of 0.8) compared to the ECB's objective of below, but close to, 2% over the medium term.¹

Figure 2.8. **Inflation**

Source: OECD Economic Outlook 88 Database.

StatLink  <http://dx.doi.org/10.1787/888932368023>

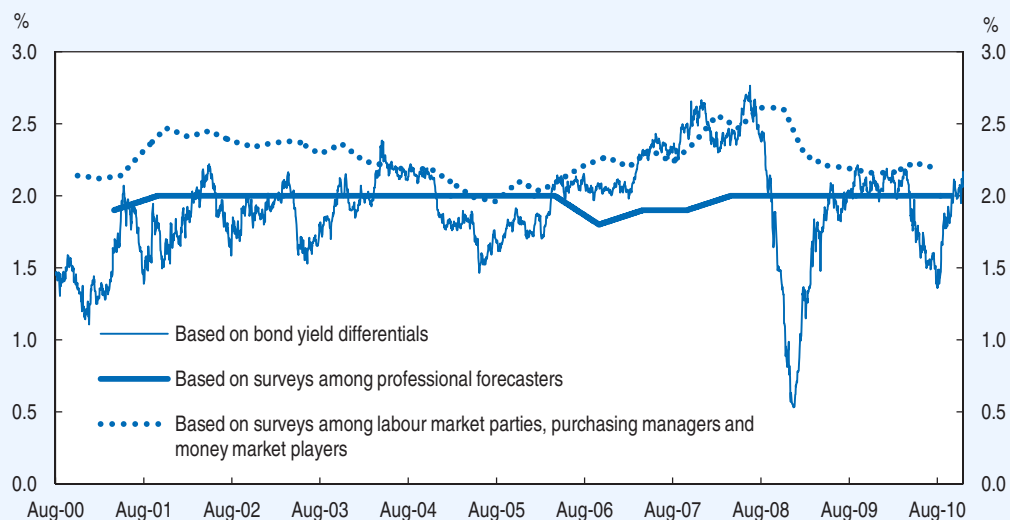
Box 2.2. How well has the Riksbank conducted monetary policy? (cont.)

However, simply looking at headline inflation outcomes could be misleading because: i) unanticipated shocks influence inflation, over which the central bank does not have complete control at least in the short term; ii) Swedish headline inflation is mechanically affected by interest rate moves; and iii) the Riksbank is a flexible inflation targeter (i.e. it is also concerned with stabilising the real economy as well as achieving the inflation target). This makes evaluation of monetary policy more difficult. However, by a number of criteria the Riksbank performs reasonably:

- CPI inflation keeping interest rates constant (CPIF inflation) has been generally closer to target and less volatile, averaging 1¾ percent since 1995 (Figure 2.8).²
- Long-term inflation expectations appear to have been fairly stable at around 2% (Figure 2.9). Survey measures have long been around 2%. Financial-market-based measures have been close to the inflation target as well, save during periods of extreme financial stress around late 2008, and to some extent in 2010, when these measures were likely less reliable (see more about inflation expectations in OECD, 2008).
- The Riksbank's inflation and GDP forecast accuracy has been similar to that of other forecasters, including at the time when all forecasters made substantial forecast errors for GDP growth and CPI inflation due to the effects of the global crisis (Riksbank, 2010c).


However, while assessing policy more positively in the past, Deputy Governor Svensson has argued on a number of occasions recently that a lower repo path than that chosen by the Riksbank would have been better, in terms of the mean squared deviations of CPIF inflation forecasts from target and either the forecast output gap or forecast deviation of unemployment from equilibrium (see Svensson, 2010).³

Figure 2.9. **Proxies for long-term expected inflation**



Note: Expected inflation: i) implied by the yield spread between government 10-year benchmark bonds and inflation-indexed bonds; ii) based on six-to-ten year ahead professional forecasters' expectations; iii) based on five year ahead survey expectations of labour market parties, purchasing managers and money market players.

Source: Consensus Forecasts, Datastream, Riksbank *Monetary Policy Report* July 2010, TNS SIFO Prospera.

StatLink  <http://dx.doi.org/10.1787/888932368042>

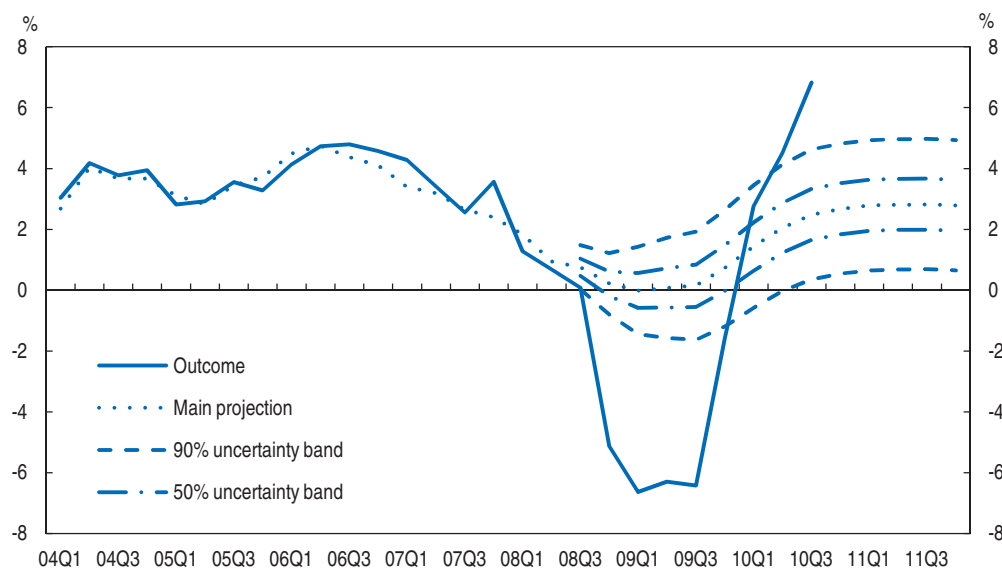
Box 2.2. How well has the Riksbank conducted monetary policy? (cont.)

1. Canadian and UK CPI inflation have averaged 1.9% since 1996 and 2.4% since 2004, respectively, both with standard deviations of 0.9, compared to their central banks' target of 2% (for Canada, 2% is the midpoint of the target range).
2. However, CPI inflation excluding food and energy, which would tend to be less affected by unexpected shocks, has on average been even lower than CPI inflation and had a slightly larger standard deviation than CPI inflation. Neither CPIF inflation nor CPI inflation excluding food and energy are the Riksbank's target, however each adjusts for one of the factors that could make headline inflation problematic. Both suggest that inflation pressures have been weak on average. As both abstract from factors which may add to inflation short-term volatility (to the extent that food and energy prices are affected by temporary shocks that have little effect on long-term inflation and that interest rates tend to respond positively with movements in inflation to get inflation back to target in the long-run), it might be expected that they would be less volatile than CPI inflation. However only CPIF inflation has been less volatile than CPI inflation.
3. Riksbank publications indicate that the bank seeks to stabilise production and employment around long-term sustainable paths in addition to stabilising inflation around the inflation target, while not neglecting that the inflation target is its overriding objective (Riksbank, 2010d).

During the early stages of the crisis, the Riksbank, like most forecasters (including the OECD), failed to foresee the severity of the downturn. Moreover, despite having correctly identified in its Financial Stability reports some of the risks facing the financial system (Box 2.3), it significantly underestimated the downside risks to activity. In October 2008 (after the bankruptcy of Lehman Brothers), it forecast a less than 5% probability that real GDP would decline at least 1½ per cent in the first quarter of 2009 on a four-quarter-ended basis (Figure 2.10). In the event, it contracted over 6%. In retrospect, it might have been more helpful to have temporarily dropped the uncertainty bands, or at least the more extreme ones which were very difficult to assess, and to have commented on the extreme uncertainty involved. Also the crisis suggests there is scope for taking better account of financial developments.

Figure 2.10. Riksbank October 2009 GDP growth projections with uncertainty bands

Four-quarter-ended percentage change



Note: Uncertainty bands reflect the x% probability that the outcome will occur within the band at any point in time, based on historical forecast errors. Unlike the original, this only reports 50% and 90% bands.

Source: Riksbank October 2008 Monetary Policy Report and OECD Analytical Database.

StatLink  <http://dx.doi.org/10.1787/888932368061>

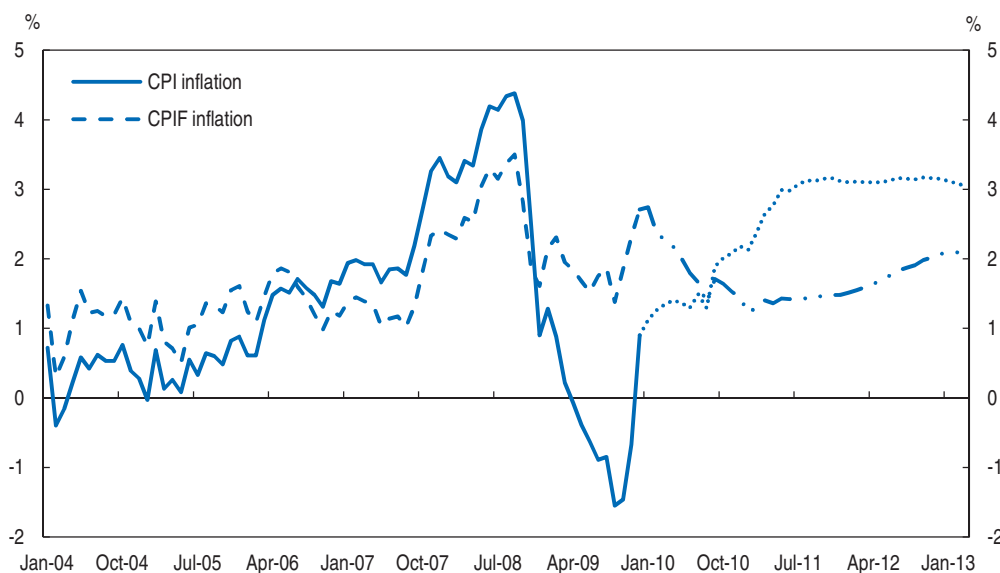
CPIF could serve as the target

There may be reasons to reconsider whether CPIF should be the formal inflation target. While the Riksbank formally targets CPI inflation, by some criteria the Riksbank's forecasts and actual inflation outcomes seem more consistent with it being a CPIF inflation, rather than a CPI inflation targeter. First, at times the Riksbank's optimal central CPI/CPIF inflation forecasts seem more consistent with a CPIF than a CPI target (Figure 2.11). In fact, since the Riksbank has begun to systematically present graphs of CPI and CPIF forecasts in Monetary Policy Reports and Updates (in October 2009), three-year ahead forecasts of CPI inflation have averaged 3.0% while CPIF inflation forecasts have averaged 2.1%.² Second, average CPIF inflation since the inflation target became fully operational is 1.7%, against 1.2% for CPI inflation, and CPIF inflation has been less volatile.

In addition, targeting CPIF inflation would present some advantages. The CPIF, unlike the CPI, does not have a component that automatically rises with interest rates, which can lead to significant differences between the two inflation measures (Figure 2.8).³ As the Riksbank's own website says, in some cases "it may be problematic for the Riksbank to explain why, for example, the immediate effect of a tighter monetary policy, that is a higher interest rate, is that CPI inflation rises". The Riksbank's decision to publish the CPIF inflation forecasts and to discuss them at length together with its repo rate, CPI inflation and GDP growth forecasts also suggests the Riksbank believes CPIF inflation developments and forecasts help explain policy.

Against this, one argument for sticking with the CPI as the target variable is that it is well-known to the public, implying that changing the target index could pose communication problems of its own. Another argument for focusing on CPI rather than CPIF inflation is that it can reflect market confidence in the inflation target, to the extent that mortgage interest rates rise if the market loses confidence in the target. However, monitoring interest rate developments separately to gauge market expectations would seem a simpler and more transparent approach, especially as the relationship between

Figure 2.11. **CPI and CPIF inflation with Riksbank February 2010 forecasts**



Note: Forecasts are presented from early 2010 onwards.

Source: Riksbank February 2010 Monetary Policy Report.

StatLink  <http://dx.doi.org/10.1787/888932368080>

interest rates and inflation expectations is not always straightforward. An alternative to the CPIF would be to develop a CPI measure that properly accounts for owner-occupied housing costs, which would therefore not be directly dependent on interest rates, by using imputed rents or real estate prices. Whatever variable the Riksbank targets, it should carefully explain why and for how long its forecasts deviate from target. If the existing CPI target is retained, presenting a longer forecast horizon may help in this regard.

How should financial imbalances and asset price developments influence monetary policy?

Household lending is growing, loan-to-value ratios for mortgages are high and there are indications that house prices are elevated in Sweden (Table 2.2).⁴ This raises the issue of whether and how monetary policy should respond when the evolution of asset prices, credit growth and indebtedness points to financial imbalances.

A common argument for a monetary policy response is that large and sustained asset price movements or other financial imbalances, like excessive credit growth, might be detrimental to price stability and economic activity down the road, though stress testing by the Swedish Financial Supervisory Authority (*Finansinspektionen* (FI) or FSA) suggests that mortgages and household indebtedness are not major threats to financial stability (FSA, 2010a).

Table 2.2. **Real house prices are high in some countries including Sweden**

	Per cent annual rate of change				Level relative to long-term average ¹		
	2001-07	2008	2009 ²	Latest quarter ³	Price-to-rent ratio	Price-to-income ratio	Latest available quarter
United States	4.5	-6.2	-4.1	-6.7	109	93	Q2 2010
Japan	-3.4	-2.0	-1.7	-2.0	64	66	Q1 2010
Germany	-2.5	-0.7	-1.0	-1.9	74	72	Q4 2009
France	9.5	-1.6	-6.7	4.7	138	131	Q2 2010
Italy	5.4	-1.4	-3.5	-3.9	108	126	Q1 2010
United Kingdom	8.6	-3.9	-9.0	4.7	144	137	Q2 2010
Canada	8.4	-2.8	4.0	7.9	156	131	Q2 2010
Australia	7.8	0.7	0.3	13.2	163	150	Q2 2010
Belgium	6.8	1.6	0.1	3.1	163	153	Q2 2010
Denmark	7.9	-7.4	-13.2	0.6	128	133	Q2 2010
Finland	5.6	-2.8	-0.8	9.1	139	109	Q2 2010
Ireland	5.4	-11.6	-10.0	-14.8	120	93	Q2 2010
Korea	4.4	-0.5	-2.3	0.8	110	67	Q2 2010
Netherlands	2.4	1.5	-2.7	-3.6	139	148	Q2 2010
Norway	6.8	-4.5	-0.6	7.7	157	131	Q2 2010
New Zealand	11.6	-7.7	-4.0	2.3	156	159	Q2 2010
Spain	10.5	-3.2	-7.7	5.6	138	126	Q2 2010
Sweden	7.6	0.4	-0.3	7.7	144	133	Q2 2010
Switzerland	1.7	0.0	5.5	4.0	90	93	Q2 2010
Euro area ^{4, 5}	4.5	-1.4	-3.9	-1.3	114	112	
Average of above countries ⁵	3.9	-3.6	-3.4	-2.3	107	98	

Note: House prices deflated by the private consumption deflator.

1. Long-term average = 100, latest quarter available.
2. Average of available quarters where full year is not yet complete.
3. Increase over a year earlier to the latest available quarter.
4. Germany, France, Italy, Spain, Finland, Ireland and the Netherlands.
5. Using 2005 GDP weights.

Source: Girouard et al. (2006) and OECD.

However, some common arguments against using monetary policy to this end are that it is highly uncertain how assets prices and imbalances will respond and that it is difficult to assess if asset price and other developments have been excessive. In light of the detrimental effects monetary policy could have on the real economy and of the difficulty in explaining why interest rates are being altered, there is a case for being cautious about using conventional monetary policy to contain risks to a particular part of the economy.

However, the difficulties of using monetary policy to “lean” against asset price or other financial developments are, at least qualitatively, not different from those arising with standard flexible inflation targeting, where there is uncertainty about inflationary pressures, capacity utilisation and the effect of monetary policy on imbalances. Similarly with standard flexible inflation targeting, there can also be difficulties in explaining policy if different sectors of the economy are growing at different rates or if inflation and activity are going in divergent directions. On this score, asset prices and other financial developments should be taken into account in setting monetary policy, and need not be inconsistent with flexible inflation targeting. Moreover, monetary policy is not the only tool available to reduce the likelihood and consequences of asset price busts or other adverse financial developments. Specifically, appropriate financial regulation and supervision are key to containing financial imbalances.

There is evidence that at least some of the Riksbank’s Executive Board members are influenced by the role of asset price and related developments and risks in setting monetary policy (Ingves, 2007, and Ekholm, 2009). Moreover, the Riksbank has indicated that risks linked to developments in financial markets are taken into account in making decisions on the repo rate while effective regulation and supervision are the most important tools to prevent imbalances in asset prices and indebtedness. Executive Board meetings can be a useful opportunity to scrutinise and explain arguments about how asset price developments should influence policy, though the recent debate and lack of consensus reported in the Board’s minutes suggest more work may need to be done in this regard and the Riksbank’s decision to appoint a commission of inquiry into the housing market, which will report in January 2011, suggests that the Riksbank has yet to settle on a view about how housing price developments should influence policy.

Should the target be changed?

Despite recent discussion about price level targeting and raising the inflation target, a continuation of the current strategy of flexible inflation targeting with the existing numerical target seems the most judicious one, though with the potential change to CPIF inflation targeting. As previously discussed, various factors like asset prices and inflation expectations need to be monitored and analysed to assess their implications for long-term inflation and the real economy, including the risks around the central forecasts.

A higher inflation target has been suggested as a way to give monetary policy more scope to react in severe recessions (Blanchard *et al.*, 2010). As there is limited capacity for nominal interest rates to fall below zero, low inflation reduces the ability of the central bank to reduce real interest rates. So a higher inflation target can help raise inflation and give central banks more scope for stimulation using conventional monetary policy.

However, there are a number of reasons why raising the inflation target would seem less desirable, at least for Sweden. First, raising the target might unanchor inflation expectations. Second, there is some evidence for advanced economies that inflation rates higher than that of the existing Riksbank target would have detrimental effects on GDP growth (Espinoza *et al.*, 2010).

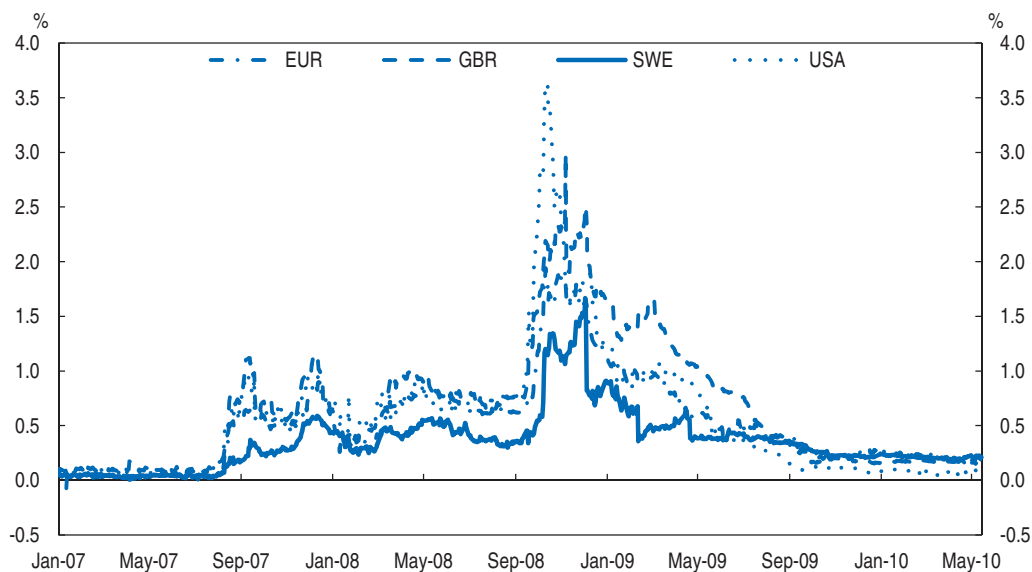
Alternatively, one could target a price level rather than inflation (Cournède and Moccero, forthcoming). If the policy of price level targeting is credible, periods of below-target prices will be expected to be offset by future spells of higher inflation, as the central bank seeks to get back to its price target. This will reduce real interest rates, thereby lessening the need for nominal interest rate decreases and reducing the likelihood that nominal interest rates will need to fall to near-zero levels. However, again it may be difficult for the Riksbank to effectively communicate the new target, especially if it is perceived to be breaking a commitment to the previous target. This is critical as the advantages of price level targeting are likely to be undermined if the central bank is not fully credible. Another disadvantage is that there has been little experience in price level targeting (Sweden did have a price level target in the 1930s, but it is difficult to assess what price level targeting would be like during less exceptional times.).

The Swedish financial system during the crisis and beyond


The global financial crisis hurt the Swedish financial system

As noted above, during the financial crisis, spreads widened. At the same time, the international demand for corporate bonds slumped, forcing large Swedish companies to seek financing from banks, which were facing difficulties in their own right with their reliance on non-deposit funding (Riksbank, 2008). However, stress has generally been more limited in Sweden than in some other economies. For example, interbank spreads in Sweden rose less sharply than in the United States or the United Kingdom (Figure 2.12). Moreover, since the peak of the crisis late in 2008, financial stress has abated, even if risk premia remain elevated by historical standards and there have been some signs of a pick-up in stress this year (discussed earlier). The initiatives taken by the Riksbank and other authorities (Box 2.1) have helped, as has Sweden's sound fiscal position.

Figure 2.12. **Three-month Libor-OIS rate spreads**



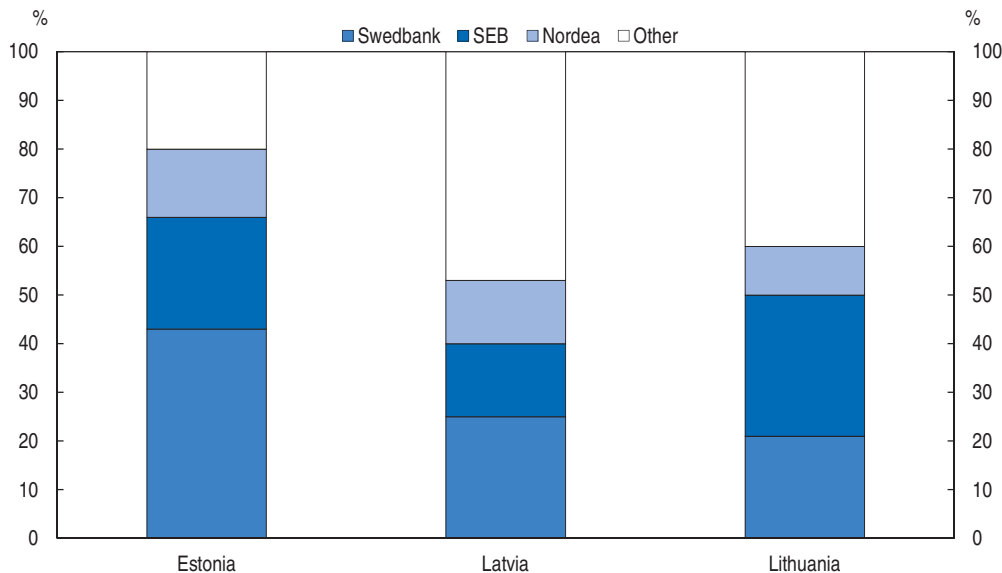
Source: Reuters.

StatLink  <http://dx.doi.org/10.1787/888932368099>

Financial stress and other factors caused net loan losses of the major Swedish banks to rise from about SEK 1 billion in 2007 to SEK 56 billion in 2009, in Q1 2010 constant prices (Riksbank, 2010e).⁵ A large portion of these losses stemmed from banking activity in the Baltic States, which experienced a very deep recession and where Swedish banks have a large market share (Figure 2.13).⁶ Even so, only around 5% of total lending by the major Swedish banking groups is to the Baltic economies (Riksbank, 2010e), so that the shock has been absorbed without adverse systemic consequences.

Figure 2.13. Lending in the Baltic states

As a share of total bank lending in each of these countries as of Q3 2010



Note: Swedbank, SEB and Nordea are Swedish banks.

Source: Riksbank Financial Stability Report 2010:2.

StatLink  <http://dx.doi.org/10.1787/888932368118>

More generally, the situation for Swedish banks looks promising, with all four major banks having improved their capital ratios. Moreover, their capital positions compare favourably with international peers, with all four having a better risk-adjusted capital ratio than some of the major international banks (Riksbank, 2010f). Stress tests conducted by the Riksbank, the FSA and European authorities suggest that the major Swedish banks would remain well capitalised even if conditions were to deteriorate (Riksbank, 2010f, FSA, 2010b, and FSA, 2010c) and the Riksbank has reported that Swedish banks' total consolidated claims on Greece, Ireland, Italy, Portugal and Spain total only 2% of GDP (or 1% of bank assets). However, there are risks. For instance, problems in these economies could lead to heightened pressures in other parts of Europe which could in turn affect Sweden. In general, foreign developments may quickly affect the Swedish financial system as over 40% of the major banks' total exposure is to foreign banks (Riksbank, 2010f). Also Riksbank liquidity stress tests suggest that the maturity of bank funding is a source of potential concern (Riksbank, 2010f).

The programmes responding to the crisis generally helped

Turning to the effectiveness of the programmes put in place to respond to the crisis (Box 2.1), the bank guarantee helped stabilise the financial system. Indeed, one bank of systemic importance was completely reliant on the guarantee for its medium-term

funding for several months. In addition, the programme provided a safety net to banks that did not participate. The government charged for these guarantees, which it would likely have felt obligated to give anyway to ensure financial stability, so the government's financial position was not made any worse (NDO, 2009). On the positive side, while the guarantee is still available, no institutions are currently in the programme, reducing the potential problems associated with distorting competition and creating incentives for excessive risk taking (Levy and Schich, 2010).

While the scale of the capital injection programme, which allows the NDO to advance capital to financial institutions subject to the government's approval, was relatively small, it ensured that banks had access to funds if they were required.⁷ This made lenders more inclined to provide credit and thereby indirectly contributed to a normalisation of financial market activity. Greater clarity on the government's intentions for this programme might have been desirable to facilitate negotiations between the NDO and the banks had circumstances warranted them.

Government support to Svensk Exportkredit (the export credit corporation) appears to have boosted funding, even if Exportkredit may have been able to do so on its cash reserves (NDO, 2010). There is a need to reassess Exportkredit's wide range of undertakings, such as lending to municipalities and corporate financing, especially given its low profitability and concerns raised by the National Audit Office about its administration.

The increase in export credit guarantees by Exportkreditnämnden improved Swedish exporters' ability to fund business despite the financial turmoil. However, it also provided indirect support for banks, without the same restrictions on executive compensation as other bank support measures (NDO, 2010).

The increase in lending by ALMI (the government-owned business development and financing agency) had a positive impact. In the first three quarters of 2009, SEK 2.6 billion of loans were granted, twice as much as during the same period a year earlier. Even if the total amount of loans was small, this increase helped small firms, which were more likely to have experienced funding problems during a financial crisis (NDO, 2010).

Overall, the government programmes have helped support credit during the crisis, showing the government has been able to use the tools at its disposal to lessen the effects of financial turmoil. Given the unusual circumstances and the need for a fast response, it is not surprising that some aspects of the programmes turned out not to be perfectly designed. To the extent that the additional government support was only meant to mitigate the effects of the crisis, the government needs to carefully evaluate the programmes, with a view to phasing out the additional support to firms as the economic environment normalises. This will help highlight that the crisis is over and return private markets to a more normal *modus operandi*. There has been good progress in this regard. No institution is currently in the guarantee scheme, the capital injection programme has been used only once and these programmes are scheduled to end. Moreover, the guarantees available from Exportkredit have been reduced and there are government plans to evaluate aspects of Exportkredit's and Exportkreditnämnden's activities.

Financial market risks remain

While there have been some positive developments, leading the Riksbank to revise down its expected loan losses for the major banks in the late 2009 and 2010 Financial Stability Reports, risks remain. Financial markets are probably not functioning normally

both due to government support measures and uncertainty about the fiscal prospects of some countries. Authorities should continue to monitor developments closely and stand ready to intervene if financial stress were to worsen substantially. It will be particularly important to monitor market funding as the major Swedish banks are particularly dependent on markets compared with a number of European banks (Riksbank, 2010f).⁸

Carefully designed regulations may help lessen the probability and extent of future crises

The global financial crisis revealed major weaknesses in financial regulation. A general consensus has emerged that minimum capital ratios ought to be substantially lifted and that changes to liquidity rules are needed. Following the Basel and EU deliberations, the FSA has proposed some liquidity and capital regulations which are scheduled to come into effect at the end of 2010. They increase common equity requirements of institutions and require more information and planning regarding liquidity risk. Further changes are inevitable following the recently announced Basel agreement, which include the phasing in of new liquidity and capital requirements gradually through the beginning of 2019, though further announcements on the detail are expected and Basel III also allows the Swedish authorities to go beyond minimal Basel requirements. Swedish authorities have been actively involved in discussions on this topic with, for example, Ingves (2009) suggesting that improvements could be achieved by introducing a capital surcharge or general charge for systemically important financial institutions, or requiring such institutions to create a debt instrument which automatically becomes capital when capital adequacy levels fall sufficiently. In principle, given the good capital position of the major Swedish banks, it would seem desirable to launch the reforms quickly and, as mentioned, the FSA is in the process of introducing new rules. However, the design and the application of the policy will matter. A possible concern is that the regulations may reduce competition due to higher costs, or disadvantage Swedish banks compared to international competitors. This may be particularly relevant as, though it is difficult to assess, there is some evidence that Swedish banks appear relatively non-competitive, based on measures using profits and non-interest income, though using other metrics Swedish banks look better (Bolt and Humphrey, 2008).

Weaknesses in the capacity and incentives to control risk of financial institutions also need to be remedied and greater emphasis on long-term profitability and transparency in remuneration is warranted. In Sweden, the FSA has uncovered weakness in internal governance and control for some small financial institutions, such as Forex Bank, HQ Bank and Carnegie Investment Bank (FSA, 2010c and 2010d). Moreover, there is also evidence that variable compensation in the Swedish financial sector has not been linked to long-term performance, with a 2009 survey indicating that 99% of all variable compensation was based on performance in one year or less, and was paid within one year (FSA, 2010d). Following EU recommendations, the FSA now requires that over half of variable compensation for employees who can materially influence risk be deferred by three years and it has provided other guidance on remuneration. However, further reforms could potentially better align incentives, such as greater ability to reclaim compensation if based on manifestly misstated results.

Consumer protection concerns are also being addressed. For example, since consumers in Sweden bear significant risk from housing loans, the FSA announced an 85% limit on loan-to-value ratios for new housing loans from October 2010 (FSA, 2010d). This is likely to enhance macroeconomic stability as well, though the change may have costs in

terms of higher interest rates (if the restriction limits the quantity provided of, but not the demand for, credit) or reduced access to housing. More generally, the FSA has been pushing financial companies to provide relevant information, good advice and comprehensible contracts to consumers (see also OECD, 2009a).

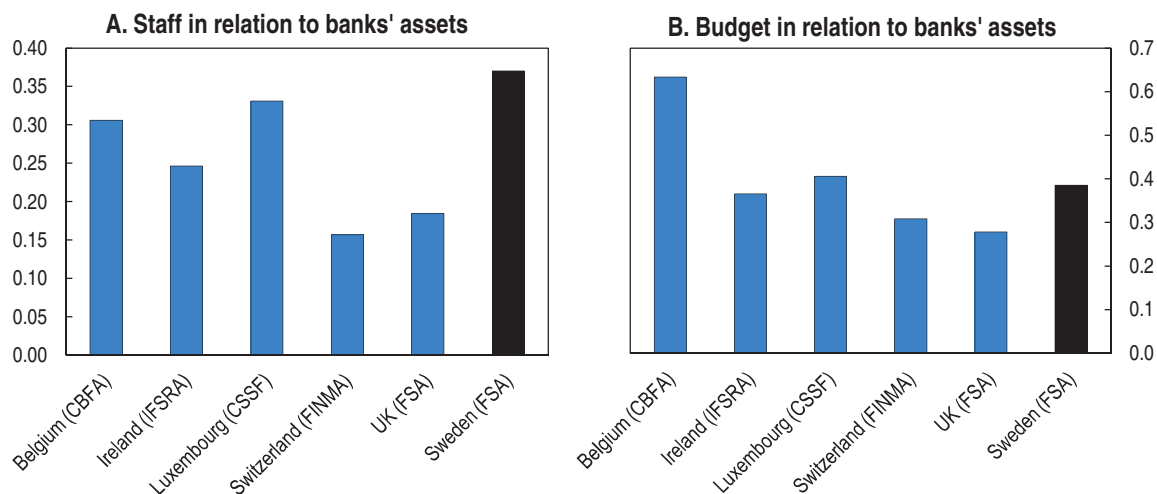
The government's plan to try to reduce risk through a risk-based fee for the stabilisation fund (Box 2.1) is a welcome development. However, the government will not set out until 2011 the details of a more sophisticated risk-based fee. Such a fee should offset the negative externality of the risks. In order to provide a market-based indicator of the appropriate fee, the government could sell "rescue bonds" for each relevant institution, which would pay out a coupon only in the event of a bailout or other government assistance (Kocherlakota, 2010). However, in practice markets for such bonds may prove to be thin and illiquid, meaning that they would send a less helpful price signal.

The introduction of a stabilisation fund could limit funding problems during financial crises but it might be insufficient to finance measures in a future crisis. An unlimited credit line is therefore available at the National Debt Office. Furthermore, there is a preparedness to adjust the levy if needed. In any event, stabilisation funds need to come with satisfactory failure resolution arrangements, as discussed further below (Schich and Kim, forthcoming).

The FSA may need more resources


Monitoring and enforcement of regulations will also be important for their effectiveness. The FSA has received a significant increase in funding over recent years and supervisory resources in Sweden are at least comparable to some other European institutions which also supervise large and/or interconnected financial sectors (Figure 2.14). However, exact comparison is difficult and there may be some debate about whether recent developments suggest that financial supervisors may need greater levels of funding. Moreover, survey evidence suggests high staff turnover and workload may be reducing efficiency (see FSA, 2010e), and the introduction of new regulations may further increase workloads.

Figure 2.14. Resources for financial supervisors



Note: Panel A reports the ratio of the staff of the surveillance authorities divided by the banks' assets (in EUR billion). Panel B reports the ratio of the budget of the surveillance authorities divided by the assets of banks expressed in basis points so a ratio of 0.01 would be reported as 100 in basis points. Older World Bank data also suggest the FSA is better resourced than the Danish supervisor and arguably comparably resourced to the Finnish and Norwegian supervisors.

Source: From OECD (2010) and Swedish data.

StatLink  <http://dx.doi.org/10.1787/888932368137>

The financial supervision framework needs revisiting

In Sweden, the FSA has responsibility for promoting stability and efficiency in the financial system, for supervising individual institutions and for ensuring effective consumer protection. However, the FSA has only restricted supervision over some non-bank financial institutions (such as deposit companies that take deposits of up to SEK 50 000). This anomaly should be addressed, as it could lead to a more general lack of trust and in the long term may distort the structure of financial markets.⁹

The Riksbank has responsibility for promoting a safe and efficient payments system, which is interpreted as encompassing safeguarding the financial system. It produces financial stability reports, which can be useful in identifying risks to the system (see Box 2.3). However having multiple authorities involved can be problematic. During the current turmoil, a Riksbank Executive Board member suggested that the impact of the Riksbank's analysis of financial stability had been limited owing to the division of responsibilities between authorities (Ekholm, 2009). The Riksbank Governor (Ingves, 2010) has indicated that while the Riksbank did try to reduce the extent of Swedish bank risks in

Box 2.3. How useful are Financial Stability Reports?*

Financial Stability Reports (FSRs) and the processes and information gathering associated with them can potentially be useful in identifying risks and evaluating their likely effects. This is helpful for policy-makers who supervise and regulate the financial system. In addition, by making these reports public, they can help financial sector participants make better decisions and help interested parties, including the general public, improve their assessment of the quality of the authorities' work.

The Riksbank's FSR identified a number of factors that became important during the subsequent financial turmoil. In 2006, it argued that the large exposures of a number of Swedish banks to the Baltic states posed a risk. In addition, in 2006, it concluded that: a) a sudden change in expectations and desire for more secure assets could lead to impaired liquidity in financial markets; b) hedge funds could allow disruptions to spread quickly between different financial markets; and c) unusually low risk premiums could rapidly correct. Once the crisis developed, a number of other risk factors were identified, including the reliance of Swedish banks on international wholesale funding.

To assess how various risks would influence the financial sector, the Riksbank also conducted a number of stress tests, including examining the effect of a substantial decline in the creditworthiness in Baltic countries and deteriorations in credit quality similar to those in the early 2000s and early 1990s downturns. The Riksbank also conducted contagion and liquidity stress tests and collected information on Swedish bank counterparty exposures for the former. The FSRs provided useful information for assessing how these risks would affect the largest banks.

However, FSRs by themselves will not necessarily ensure that financial stability is preserved. First, a FSR may make poor assessments and predictions. This would risk undermining the credibility of the authoring institution more generally and hence may make it more difficult for the central bank to conduct monetary policy. Second, Sweden's experience suggests that a problem in the financial crisis was not the FSRs themselves but putting the information in the Reports to better use, with recent experience suggesting that the Riksbank was hindered in this regard by its lack of instruments to influence bank behaviour (see main text).

* This box is based in part on Wilkinson et al. (2010).

the Baltics, through discussions with the banks, the Baltic authorities and the Swedish FSA, it failed. Moreover, only the FSA has the tools to influence financial institution behaviour directly by, say, prohibiting companies from undertaking certain actions.

A number of tools could be provided to the Riksbank to increase its influence over banks, if deemed appropriate: i) the ability to start cases at the FSA or to draw systematic risks to the attention of the FSA (which the FSA would have to act on or publicly explain why it did not do so); ii) the ability to control the cost or extent of risky behaviour at an aggregate level, such as control over liquidity ratios, capital requirements for mortgages or an adjustable mortgage interest levy; and/or iii) making the Riksbank, rather than the FSA, responsible for supervising banks (Box 2.4), which would likely involve transferring resources to the Riksbank. In light of the Riksbank and FSA's good co-operation, the first option is relatively attractive so long as it can work effectively. The second option may seem particularly appropriate given the Riksbank's expertise in macroeconomic analysis, though it may be a crude tool for addressing financial sector problems and could involve complications if new tools have to be created or existing tools have to be reallocated between institutions. A similar concern may exist for the third option (see also Box 2.4).

Regardless of whether any of these options are used, it would be helpful to clarify the responsibilities of the Riksbank and the FSA with respect to financial stability. Reflecting these concerns, the Riksbank in early 2010 called for a review of its Act to clarify its responsibilities, the tools it needs as well an analysis of the division of responsibilities and co-ordination between the Riksbank and the FSA (Riksbank, 2010g). The government has announced there will be an inquiry into the regulatory framework. Such an examination should carefully examine the operation of the financial system, elaborate policy objectives, match possible policy instruments to these objectives and consider the most appropriate institutions to implement these instruments (OECD, 2009b, and OECD, 2009c).

Box 2.4. **Should the Riksbank supervise banks?**

There are a number of pros and cons of the central bank being the bank supervisor (Goodhart, 2002, and Blinder, 2006). There may be economies of scope (benefits from combining functions) but also conflicts of interest. The diversity of financial sector supervision arrangements across countries in part probably reflects this and the fact that it is not clear that one set-up works obviously better than any other. For example, Australia, Sweden and the United Kingdom have a single financial supervisory agency, the United States has a number of agencies involved in financial system supervision, including the Federal Reserve, and New Zealand has the central bank responsible for bank supervision.

On the one hand, there may be complementarities between the central bank's macroeconomic and prudential responsibilities. Having supervisory authority would give the central bank unique access to timely information on the banking system that might be helpful to assess the credit channel transmission mechanism of monetary policy and such information may also enhance the central bank's ability to forecast the economy. In principle the Riksbank currently has full access to institution-specific data though in practice not being the supervisor may limit its knowledge of what information may be useful and hence may mean that it does not request such information or even possibly know of its existence. Moreover the Riksbank's existing expertise is likely to make it particularly well placed to assess stability issues from a macroeconomic perspective. In addition having financial supervision within the central bank may help with relationship building between the relevant individuals who would be involved in future crisis management.

Box 2.4. Should the Riksbank supervise banks? (cont.)

On the other hand, there is the scope for significant conflicts of interest where the central bank may be tempted to let sick banks continue in order to support the general economy and achieve its inflation stability objectives even though their survival may be detrimental to financial stability. This may lead to worse overall economic outcomes in the longer term. However, a possible counterargument is that the central bank is in a unique position to assess the pros and cons of letting a bank fail and can make bank supervision decisions which internalise the consequences of its actions on the macroeconomy, thereby achieving better outcomes.

Another potential argument against the central bank being the bank supervisor is that it could be difficult for the central bank to achieve systemic stability, efficiency of the banking system and, where relevant, customer protection. However, a financial supervisory authority is likely to face similar challenges with these objectives.

There could also be concerns that a central bank combining monetary policy and supervision responsibilities could be too powerful for an unelected institution, especially to the extent that it is perceived as intervening in individual institutions. However, the Riksbank is under the authority of the Riksdag, the Swedish parliament. The Riksdag has a number of ways of making the Riksbank accountable. The Riksdag currently appoints members of the General Council which itself appoints members of the Executive Board which sets monetary policy. The Riksbank is obliged by law to submit written reports on monetary policy to the Riksdag at least twice a year and the Governor appears before the Riksdag Committee on Finance to answer questions shortly after the reports are submitted. In addition the Riksdag Committee on Finance has appointed external reviewers to evaluate the Riksbank's work, most recently in 2010. They can scrutinise the work of the Riksbank and encourage open discussion about improving the work of the Riksbank. The Riksdag could impose additional requirements if it deems it necessary. While it is a political question whether an unelected central bank should be able to intervene in specific financial institutions, the Riksbank's relative independence may mean that it feels less restrained in dealing with financial sector problems.

Overall, a case could be made for the Riksbank to become the supervisor of banks. However, there may be limited benefits from also supervising non-bank financial institutions as the synergies from combining macroeconomic and prudential regulation of systemically unimportant institutions may be small.* Moreover, the Riksbank may lose the benefit of more open discussions with financial institutions if it became their supervisor. However without the ability to influence bank behaviour more directly, the value of this may be limited.

Of course making the Riksbank the bank supervisor would not ensure financial stability by itself – it would need to be effectively managed and have the necessary tools to do its work such as the ability to sanction banks. In particular interest rates alone will be poor policy instruments to try to control both inflation and supervise banks. Also a major change of supervisory structure could lead to a loss of expertise if not handled carefully. Moreover financial stability is also determined by conditions outside of the supervisor's control. Nevertheless providing the Riksbank with another tool, in addition to interest rates, would be welcome, assuming it keeps its existing inflation target and financial stability objectives, and making it an appropriately equipped bank supervisor would be one way of doing this.

* A similar argument could be made to justify the Riksbank not being the supervisor of small banks. However there are advantages if all banks are covered by the same supervisor. In general if there is any division of supervisory responsibilities, there is a risk that what is systemically important could change and this would need to be monitored.

Cross-border banking issues gained prominence during the recent financial turmoil, especially in Sweden (BCBS, 2010, Ekholm, 2010, and IMF, 2010). The desire for greater cross-country financial integration has led to tensions in maintaining financial stability within a structure of still largely national legal and institutional frameworks. These problems can be lessened by further harmonisation of supervision and crisis resolution frameworks and by ensuring there is sufficient financial and technical capacity for authorities to identify problems and provide necessary support. This will require more information-sharing and co-operation across borders during both normal and crisis times, and ultimately probably a set of binding burden-sharing agreements, which are likely to be difficult to conclude. In general, Sweden has actively tried to improve cross-country relations and has been at the forefront in this regard in the European Union, in particular with the establishment of the Nordic-Baltic Cross-Border Stability Group in 2010 based on an agreement amongst Nordic and Baltic authorities. The latter included a preliminary framework for co-operation and burden sharing between agencies in a crisis. Moreover, given the structure of the Nordic financial system, it makes sense that Nordic authorities continue to develop joint strategies for dealing with crisis situations. With existing arrangements, there may be scope for greater harmonisation of deposit insurance and greater explicitness about the rules for early supervisory intervention, though Sweden is addressing the former by introducing the amended EU deposit insurance directive. In addition, given Swedish banks' foreign exposures the Riksbank may need to further increase its foreign exchange reserves or organise contingent lines for foreign currency with the Federal Reserve.¹⁰

The Government Support to Credit Institutions Act, which gives the government a wide range of possibilities to support banks in distress and take over a troubled bank under certain conditions, was an important step in dealing with problematic financial institutions. However, more needs to be done. Specifically, the arrangements for the support, administration, reconstruction and winding up of credit institutions need to be reviewed, analysing when and how they should occur and whether the tools available to financial supervision authorities are sufficient to avoid financial turmoil (Riksbank, 2010g). Currently, the FSA cannot directly initiate an insolvency proceeding, nor co-ordinate a rescue plan before insolvency is declared. Though some tools are available to the authorities, the limited powers of the FSA may make it difficult to respond quickly and effectively to problems. For example, the inability to initiate insolvency is problematic as deposit insurance funds can only be disbursed after a bank is in bankruptcy (though bankruptcy being the trigger for making use of deposit insurance is currently reviewed by the government). Some procedural rights and current procedures in bank resolution cases may need to be curtailed or changed to ensure speedy resolution in the public interest and this may involve reviewing European law.¹¹ The previously discussed inquiry into the regulatory framework is to examine how powers should be distributed amongst the authorities so that different kinds of crises can be addressed effectively while ensuring the interests of taxpayers are safeguarded.

These issues don't involve only the FSA. The NDO can provide various types of emergency support during financial turmoil. It would be useful to clarify which of the NDO and the Riksbank are responsible for providing liquidity assistance to financial institutions and specifically when and to whom assistance can be provided. For example, it may be

against European treaties for the Riksbank to support an insolvent but systemically important bank, while the NDO determines whether there should be liquidity assistance to the bank (Riksbank, 2010g).

Lastly, in Sweden, much of the accounting supervision of listed companies has been done by stock exchanges mainly with the help of consultants. However, consultants do not have access to the European Enforcers Co-ordinating Sessions meetings or the decision database of the Committee of the European Securities Regulators, for confidentiality reasons. In addition, using consultants means that the stock exchanges themselves risk not having sufficient direct knowledge of the issues involved in regulation (FSA, 2010d).

Conclusion

The policy priority is to continue to support a sustainable recovery from the crisis. On the monetary side, this will involve raising interest rates gradually, conditional on economic and financial developments. On the financial stability side, the framework and regulation of the financial system can be further improved. Specific recommendations are summarised in Box 2.5.

Box 2.5. Summary of recommendations regarding monetary policy and the financial system

- The Riksbank ought to continue to raise interest rates gradually, removing stimulus as the expansion unfolds and financial stress lessens.
- The Riksbank could usefully clarify its repo band forecasts and the role of risks, including those related to asset prices and credit developments. The Riksbank's inflation target could be redefined in terms of a measure of inflation not directly affected by interest rates.
- The increased government support, via the capital injection and the guarantee programmes should be unwound as conditions normalise. Aspects of the government support programmes need to be reviewed to examine whether they are inappropriate or poorly designed.
- As new financial regulations are introduced, attention will need to be paid to their effect on efficiency, stability and consumer protection.
- There is scope to improve FSA funding and correct any anomalies, such as not having all deposit-taking institutions fully regulated by the FSA.
- The responsibilities of and relationship between the Riksbank, the FSA and the NDO need to be reviewed and clarified. Gaps in the toolkit to supervise and influence financial institutions need to be addressed. An evaluation of the resolution framework for banks is needed. If the FSA remains the supervisor, its toolkit may need to be strengthened. If the Riksbank retains financial stability responsibilities, it could be given more effective instruments to influence banks' behaviour.
- Cross-border financial supervision co-ordination and co-operation need to be further nurtured. Memorandums of Understanding between cross-border institutions generally could be more specific.

Notes

1. Within the Riksbank Executive Board, there were mixed views about the need to tighten, with three members expressing reservations about the September 2008 hike.
2. An article at the end of the July 2010 *Monetary Policy Report* suggests that CPI inflation will reach the 2% target by 2016, well beyond the forecast horizon of the most prominent graphs in the report. Similar to the recent *Monetary Policy Reports*, earlier reports have cases where the forecasts of inflation not directly affected by interest rate movements also seem more consistent with an overriding concern with 2% inflation than the CPI inflation forecasts. For example, in the October 2007 *Monetary Policy Report* the CPI inflation forecasts appear to stabilise at 2¼ per cent in 2010 while the reported UNDI1X (CPI excluding household mortgage interest expenditure adjusted for direct effects of changes in indirect taxes and subsidies) inflation is at around 2%.
3. The US CPI uses imputed rents for housing costs and so is not directly affected by interest rate changes. The European Central Bank and the Bank of England also have a definition of price stability or an inflation target in terms of an HICP/CPI which excludes mortgage interest charges. However the latter does have the potential disadvantage that it excludes a significant share of the cost of living (Cournède, 2005). Eurostat is working on including housing in the HICP.
4. While low real interest rates, strong income growth and the low supply of housing may explain these high house prices, there are risks. Recent analysis (Walentin and Sellin, 2010) suggests that housing demand shocks, specifically shocks to the relative preference for housing which could reflect *inter alia* the availability of mortgage credit, play an important role in the recent run-up in house prices.
5. The major banks are Handelsbanken, Nordea, SEB and Swedbank and following Riksbank practice the term major banks refers to their banking groups.
6. Estonian GDP, for example, contracted around 14% in 2009.
7. The programme was used to finance the purchase of a new issue of Nordea bank shares of SEK 5.6 billion. This is relatively modest in comparison to Nordea's assets, which amounted to around SEK 5 000 billion in March 2010 (Riksbank, 2010e). The small amount of financing through this programme suggests the government has safeguarded tax payers' money through the design of this programme, though banks may have used other programmes to get support.
8. Swedish banks receive a significant amount of funding from the covered bonds market. Covered bonds are likely to be less risky though the market did have problems during the recent financial turmoil. Another risk is that a prolonged period of low interest rates could lead to problems for life insurance companies (FSA, 2010d).
9. The FSA has only restricted supervision powers over providers of SMS (micro) loans although the recent reform of the Consumer Credit Act is welcome as it should provide greater protection to SMS borrowers. Perhaps reflecting this, unpaid SMS loans have dropped significantly recently.
10. The Riksbank has a swap agreement with the ECB.
11. Previous experience with a credit market institution, Custodia, suggests that lengthy judicial reviews after the revocation of its FSA licence contributed to higher costs (IMF, 2010). "Living wills" which lay a framework for the breaking up of an institution may also help facilitate winding-up and re-organisation.

Bibliography

- Basel Committee on Banking Supervision (BCBS) (2010), *Report and Recommendations of the Cross-border Bank Resolution Group*, Basel, March.
- Beechey, M. and H. Elmér (2009), "The Lower Limit of the Riksbank's Repo Rate", *Riksbank Economic Commentaries*, No. 11.
- Blanchard, O., G. Dell'Ariccia and P. Mauro (2010), "Rethinking Macroeconomic Policy", *IMF Staff Position Notes*, No. 10/03.
- Blinder, A. (2006), "Monetary Policy Today: Sixteen Questions and about Twelve Answers", *CEPS Working Paper*, No. 129.
- Bolt, W. and D. Humphrey (2008), "Bank Competition Efficiency in Europe: A Frontier Approach", *De Nederlandsche Bank Working Papers*, No. 194.

- Cournède, B. (2005), "House Prices and Inflation in the Euro Area", *OECD Economics Department Working Papers*, No. 450.
- Cournède, B. and D. Moccero (forthcoming), "Is There a Case for Price Level Targeting?", in Beblavý, M., D. Cobham and L. Ódor (eds.), *The Euro Area and the Financial Crisis*, Cambridge University Press.
- Ekholm, K. (2009), "Some Lessons from the Financial Crisis for Monetary Policy", Riksbank, Speech, 4 December.
- Ekholm, K. (2010), "Dealing with Cross-border Banking Without Rolling Back Financial Integration", Riksbank, Speech, 11 June.
- Ekici, B., G. Guibourg and P. Asberg-Sommar (2009), "No Serious Credit Crunch", *Riksbank Economic Commentary*, No. 8.
- Espinoza, R., H. Leon and A. Prasad (2010), "Estimating the Inflation-Growth Nexus – A Smooth Transition Model", *IMF Working Papers*, WP/10/76.
- European Central Bank (ECB) (2010), "ECB decides on measures to address severe tensions in financial markets", May, www.ecb.int/press/pr/date/2010/html/pr100510.en.html.
- Financial Supervisory Authority (FSA) (2010a), *Den svenska bolånemarknaden och bankernas kreditgivning*, Stockholm.
- Financial Supervisory Authority (FSA) (2010b), *CEBS Stress Test on the Swedish Banks*, Stockholm.
- Financial Supervisory Authority (FSA) (2010c), *Risker i det finansiella systemet*, Stockholm.
- Financial Supervisory Authority (FSA) (2010d), *Tillsynsrapport 2010: Erfarenheter av tillsyn och regelutveckling*, Stockholm.
- Financial Supervisory Authority (FSA) (2010e), *Medarbetarundersökning 2010*, prepared by TNS SIFO.
- Giavazzi, F. and F. Mishkin (2006), *An Evaluation of Swedish Monetary Policy between 1995 and 2005, Reports from the Riksdag 2006/07:RFR 1*, Committee on Finance, Stockholm.
- Girouard N., M. Kennedy, P. van den Noord and C. André (2006), "Recent House Price Developments: The Role of Fundamentals", *OECD Economics Department Working Papers*, No. 475.
- Goodhart, C. (2002), "The Organizational Structure of Banking Supervision", *Economic Notes*, Vol. 31, No. 1.
- Hansen, N.-J. and P. Welz (forthcoming), "Interest Rate Pass-Through During the Global Financial Crisis: The Case of Sweden", *OECD Economics Department Working Papers*.
- Ingves, S. (2007), "Housing and Monetary Policy – A View from an Inflation Targeting Central Bank", Riksbank, Speech, 1 September.
- Ingves, S. (2009), "Financial Stability – Where are We Heading?", Riksbank, Speech, 19 November.
- Ingves, S. (2010), "The Crisis in the Baltic – The Riksbank's Measures, Assessments and Lessons Learned", Riksbank, Speech, 2 February.
- International Monetary Fund (IMF) (2010), *Staff Report for the 2010 Article IV Consultation*, Washington DC.
- Kocherlakota, N. (2010), "Taxing Risk and the Optimal Regulation of Financial Institutions", *Federal Reserve Bank of Minneapolis Economic Policy Papers*, No. 10-3.
- Levy, A. and S. Schich (2010), "The Design of Government Guarantees for Bank Bonds: Lessons from the Recent Financial Crisis", *Financial Market Trends*, Issue 1, OECD.
- Minegishi, M. and B. Cournède (2010), "Monetary Policy Responses to the Crisis and Exit Strategies", *OECD Economics Department Working Papers*, No. 753.
- National Debt Office (NDO) (2009), "The Swedish Experiences of Guarantees to Banks During the Financial Crisis", Prepared for the meeting of the OECD Working Party on Debt Management, October.
- National Debt Office (2010), *Utvärdering av regeringens åtgärder till stöd för kreditförsörjningen*, Stockholm.
- OECD (2008), *OECD Economic Outlook No. 83*, Paris.
- OECD (2009a), *Financial Literacy and Consumer Protection: Overlooked Aspects of the Crisis – OECD Recommendation on Good Practices on Financial Education and Awareness Relating to Credit*, Paris.
- OECD (2009b), *Policy Framework for Effective and Efficient Financial Regulation – OECD Recommendations and Principles*, Paris.

- OECD (2009c), "Policy Framework for Effective and Efficient Financial Regulation General Guidance and High-Level Checklist", *Financial Market Trends*, Issue 2, OECD.
- OECD (2010), *OECD Economic Survey: Luxembourg*, Paris.
- Riksbank (2007), *The Executive Board's Consultation Response to the Report "An Evaluation of Swedish Monetary Policy between 1995 and 2005"*, Stockholm.
- Riksbank (2008), *Financial Stability Report 2008:2*, Stockholm.
- Riksbank (2009), *Financial Stability Report 2009:2*, Stockholm.
- Riksbank (2010a), *Swedish Market Participants' Views of Risks and the Functioning of the Swedish Fixed-Income and Foreign Exchange Markets, Risk Survey Spring 2010*, Stockholm.
- Riksbank (2010b), *Swedish Market Participants' Views of Risks and the Functioning of the Swedish Fixed-Income and Foreign Exchange Markets, Risk Survey Autumn 2010*, Stockholm.
- Riksbank (2010c), *Material for Assessing Monetary Policy 2009*, Stockholm.
- Riksbank (2010d), *Monetary Policy in Sweden 2010*, Stockholm.
- Riksbank (2010e), *Financial Stability Report 2010:1*, Stockholm.
- Riksbank (2010f), *Financial Stability Report 2010:2*, Stockholm.
- Riksbank (2010g), *Submission on Certain Areas that Require Investigation as a Result of the Financial Crisis, Submission to the Rikstag*, Stockholm.
- Schich, S. and B. Kim (forthcoming), "Funding Systemic Crisis Resolution", *Financial Market Trends*, Issue 2, 2010, OECD.
- Svensson, L. (2009a), "Evaluating Monetary Policy", *NBER Working Paper 15385*.
- Svensson, L. (2009b), "Transparency under Flexible Inflation Targeting: Experiences and Challenges", *CEPR Discussion Papers*, No. 7213.
- Svensson, L. (2010), "Some Problems with Swedish Monetary Policy and Possible Solutions", Riksbank, Speech, 24 November.
- Walentin, K. and P. Sellin (2010), "Housing Collateral and the Monetary Transmission Mechanism", *Riksbank Working Papers*, No. 239.
- White, W. (2009), "Should Monetary Policy 'Lean or Clean'?", *Federal Reserve Bank of Dallas Globalization and Monetary Policy Institute Working Papers*, No. 34.
- Wilkinson, J., K. Spong and J. Christensson (2010), "Financial Stability Reports: How Useful During a Financial Crisis?", *Federal Reserve Bank of Kansas*, First Quarter.

Chapter 3

Limiting long-term unemployment and non-participation

After the onset of the crisis, unemployment in Sweden increased markedly, though much less than expected and than during the early 1990s, even as participation in the labour market held up well. The challenge going forward is to ensure that high unemployment does not become entrenched or leads to withdrawals from the labour force. The government has taken measures to mitigate this risk, particularly in the areas of job-search incentives and enrolment in education. Nevertheless, additional reforms are needed to ensure a sustained job-rich expansion. Such reforms should focus on increasing the flexibility of the labour market and strengthening job-search incentives further.

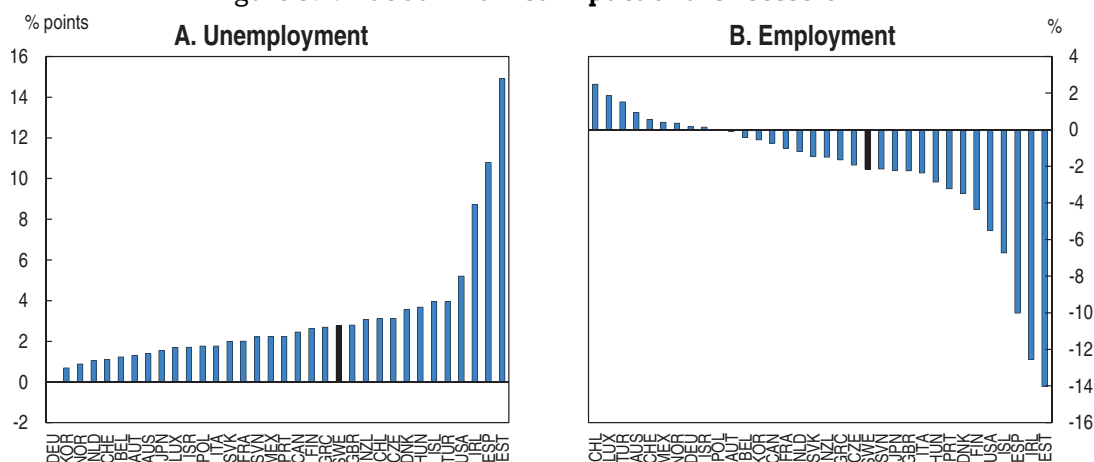
As the crisis hit in 2008, employment and participation rates in Sweden were among the highest in the OECD. These good results can be partly attributed to the “Swedish model” in which social partners are responsible for wage-setting while the government supports job-losers with relatively generous social benefits and helps them back into work through extensive active labour market policies. Furthermore, after the early 1990s, several reforms scaled back benefit entitlements and raised incentives to look for a job. However, important challenges remain. The share of the population receiving incapacity benefits is among the largest in the OECD in spite of a marked decline in recent years. The government has introduced reforms to bring outsiders back into the labour market. An important challenge is to ensure the success of these reforms despite the impact of the crisis on the labour market. Furthermore, the labour market integration of vulnerable groups, notably youth and foreign-born workers, is relatively weak (Liebig, 2009; Scarpetta et al., 2010; OECD, 2008).

This chapter discusses the labour market policy challenges Sweden faces in the wake of the crisis. It first assesses how the labour market performed during the crisis, including a comparison with developments in other OECD countries and the recession in Sweden in the early 1990s. It then turns to the labour market policy measures taken in the face of the crisis and reviews how these need to be adjusted during the recovery. Finally, the chapter discusses what additional structural measures the government can take to limit long-term unemployment and non-participation beyond the recovery.

The crisis led to an increase in unemployment


As the global recession deepened in 2008 the Swedish labour market deteriorated (Figure 3.1), but much less than during the early 1990s crisis (Box 3.1). In the early stages

Figure 3.1. Labour market impact of the recession^{1, 2}



1. Impact from GDP peak to trough plus two quarters to account for lagged labour market adjustment.
2. For Greece and Iceland the period between 2008Q3 and 2009Q4 is shown because there is no trough plus two quarters in the GDP series. The recession shown for Norway is the one that has started in 2008. Australia and Poland did not have a recession in 2008-09 but are shown for comparison purposes over the period 2008Q3 to 2009Q4.

Source: OECD Analytical Database; OECD (2010c).

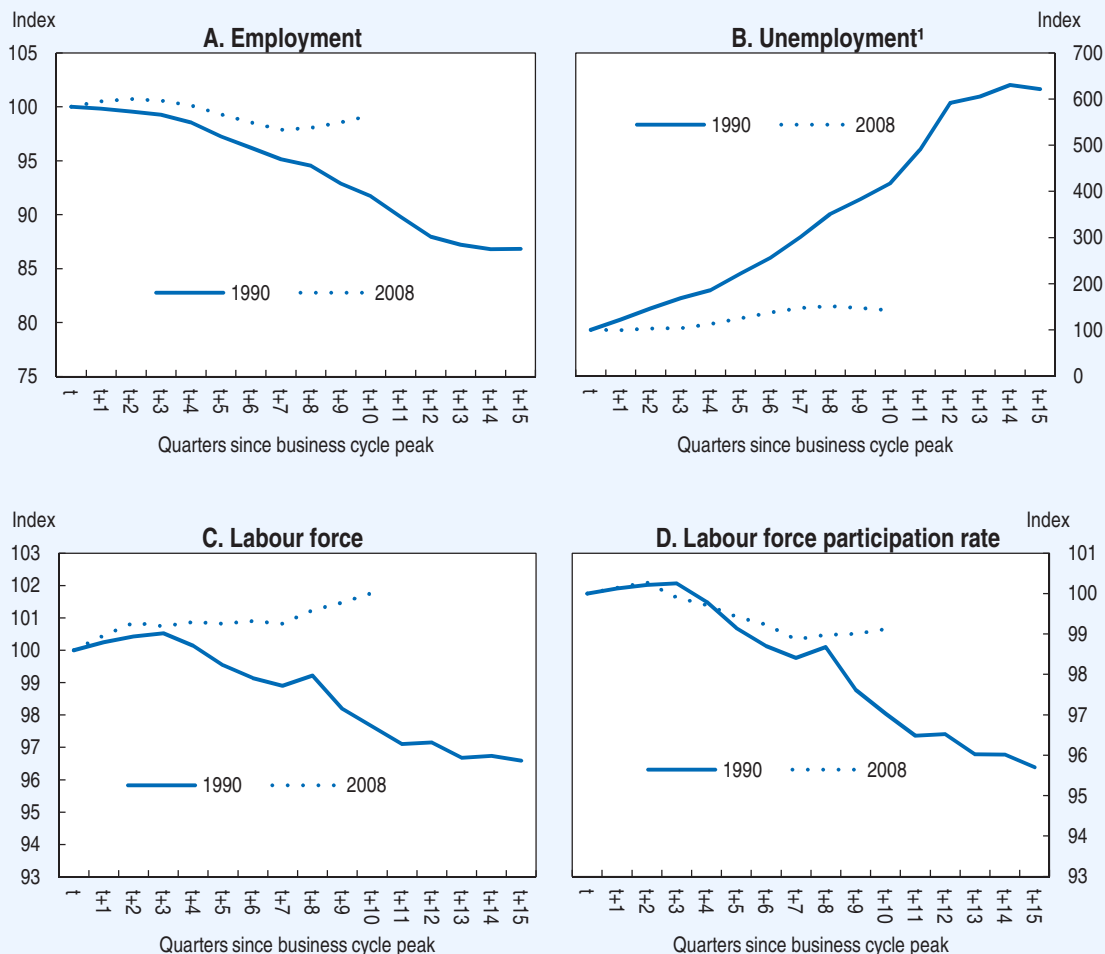
StatLink  <http://dx.doi.org/10.1787/888932368156>

of the recession, companies mainly shed workers on temporary contracts, but subsequently dismissals of workers on regular contracts also picked up. Partly due to their reliance on temporary contracts, the youth and low-skilled were the most severely affected, as were the immigrants, in line with historical patterns. With employment shrinking and the labour force on a rising trend, unemployment rose markedly. Long-term unemployment shot up even faster as the outflow from unemployment also declined. However, Sweden was among the first countries to experience a rebound in employment.

Box 3.1. Comparison of the labour market in the recessions starting in 1990 and 2008

The labour market impact of the crisis has been significantly less severe than that of the Swedish recession in the early 1990s (Figure 3.2). Employment dropped less, unemployment rose more slowly and labour force participation held up better. In addition the turnaround in employment has happened much faster.

Figure 3.2. Comparison of the labour market in the recessions starting in 1990 and 2008



1. Unemployment among the 16-74 year olds in the civilian labour force.

Source: OECD Analytical Database.

StatLink  <http://dx.doi.org/10.1787/888932368175>

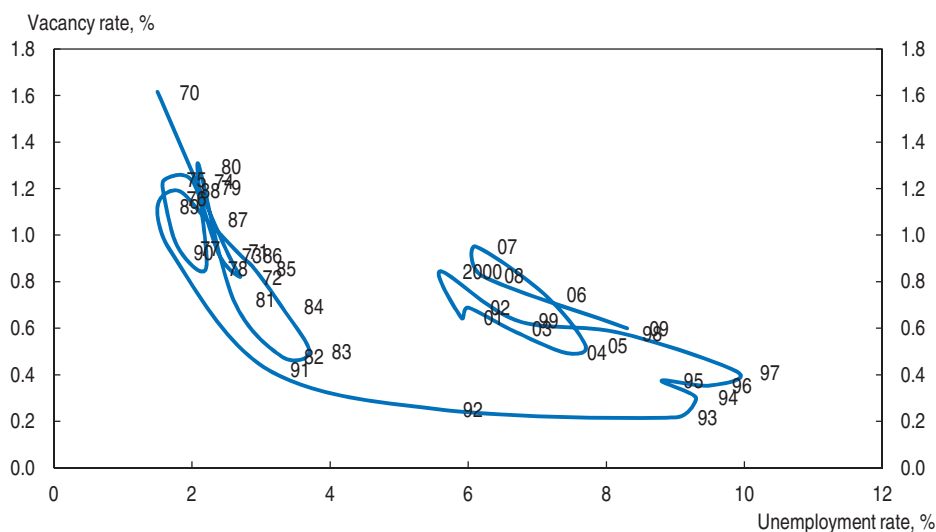
Box 3.1. Comparison of the labour market in the recessions starting in 1990 and 2008 (cont.)

At least two factors underpin these important differences. First, the sectoral composition of the latest recession was less labour intensive. While the drop in global demand mainly affected output in the Swedish manufacturing sector, the labour-intensive service sector was aided by the relatively muted drop in private consumption. This contrasts with the early 1990s, when the drop in private consumption was larger and lasted longer. Construction was also hit less than in the 1990s, as the impact on residential investment was smaller. Second, companies appear to have hoarded labour to a larger degree. This could reflect that the employers, so far correctly, considered the negative shock to be more temporary than in the 1990s.


It is still too early to conclude how the increase in cyclical unemployment will affect structural unemployment and participation. However, empirical studies suggest that the reforms implemented in Sweden since the 1990s will lessen the impact of the recession (Guichard and Rusticelli, 2010; Furceri and Mourougane, 2009). Product market reforms (Erlandsen and Lundsgaard, 2007) have enhanced the ability of the economy to create new jobs following the economic downturn, which can be expected to shorten the unemployment spell for job losers. Tax reforms have made work more attractive while reforms of the unemployment benefit system have shortened the effective duration of benefits and reduced replacement rates (OECD, 2007). This is also expected to mitigate the effect on long-term unemployment by increasing job losers' search intensity and their willingness to accept job offers.

Going forward, a main challenge will be to prevent the increase in cyclical unemployment becoming structural. The Swedish labour market crisis in the 1990s is a prominent example of a situation where weak labour demand kept up the number of long-term unemployed, leading to human capital depreciation and withdrawal from the labour force. The scars from the crisis in the 1990s are still visible today as the unemployment rate never returned to its pre-crisis level (Figure 3.3). Since the 1990s, structural reforms have lowered the sensitivity of Swedish structural unemployment to changes in aggregate unemployment (Box 3.1), but risks remain high. In particular, recent inflows into unemployment were biased towards workers with low productivity who traditionally have difficulties in gaining a footing in the labour market.

Figure 3.3. **The Beveridge curve in Sweden**



Source: OECD, Main Economic Indicators (2010).

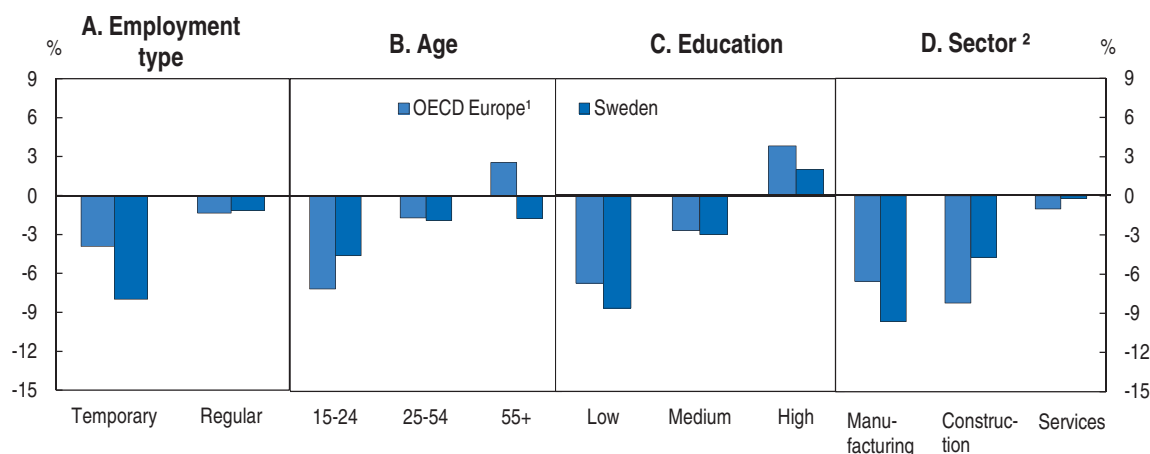
StatLink  <http://dx.doi.org/10.1787/888932368194>

However, insofar as the increase in unemployment stemmed from recent reforms to boost participation, it may be temporary, at least to some extent.

The labour market was mainly hit by the global crisis via the heavily export-dependent manufacturing sector. Most of the contraction in employment from 2007 to 2009 happened in this sector, with the declines being more muted in construction and especially services (Figure 3.4). Unlike many other countries, Sweden did not experience a housing market bust. Employment in construction and services was further helped by strong automatic stabilisers and discretionary stimulus measures, which supported domestic demand.

Figure 3.4. **The effects of the recession across groups of workers**

Percentage change in employment by workforce group, 2008Q2 to 2009Q2



1. OECD Europe is an un-weighted average of all European OECD countries (excluding Slovakia). Turkey is also excluded for the composition by sector.

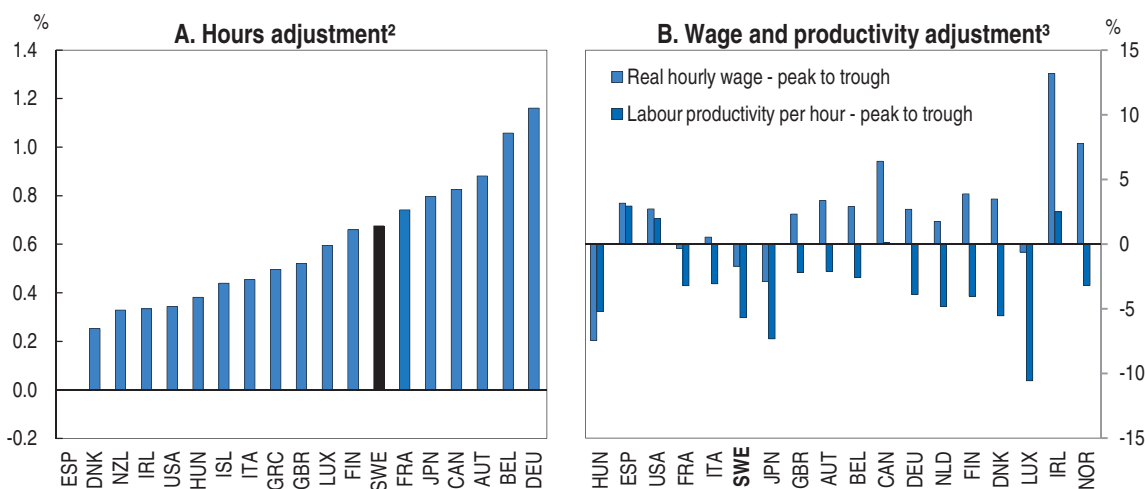
2. Sector definitions follow the NACE rev. 2 definition.

Source: European Union Labour Force Survey (EULFS).

StatLink  <http://dx.doi.org/10.1787/888932368213>

Downward adjustment of average hours lessened the impact of the crisis on employment, but not as much as in most OECD countries with short-time working schemes (Figure 3.5, Panel A; OECD, 2010d). In Sweden, a crisis agreement was reached in early 2009 between the social partners in the manufacturing sector (without any public financing), which helped limit job losses. This allowed wages at the local level to decrease up to 20% and working hours to fall substantially. In total, around 3% of all employees were affected by such local agreements in 2009 (Riksbank, 2010a), and according to labour unions and employers this reduced the rise in unemployment (IF-Metall, 2009).

Wage moderation also mitigated job losses. During the crisis, real hourly wages displayed flexibility (Figure 3.5, Panel B), as local wage negotiations served to contain wage inflation, especially in manufacturing. This moderation was all the more important as the earlier centrally-agreed wage increases for 2007-09 were relatively high (Riksbank, 2010a). Going forward, new wage agreements for 2010-12 covering 87% of all wage earners will help keep wage inflation low and should therefore facilitate job creation. According to preliminary statistics from the National Mediation Office the centrally-agreed wage increases are 1.9% for 2010 and 1.7% for 2011, as against 2.9% for 2009. Recent wage agreements also incorporate lower wages for youths in the manufacturing sector as a response to the currently high rates of youth unemployment.

Figure 3.5. **Labour market adjustments during the recession**¹

1. For Greece the period between 2008Q3 and 2009Q4 is shown because there is no trough in the GDP series. Australia and Poland did not have a recession in 2008-09 but are shown for comparison purposes over the period 2008Q3 to 2009Q2. The recession shown for Norway is the one that has started in 2008.
2. Share of the contribution of average hours to the total net change in labour input from real GDP peak to trough. A negative contribution arises when average hours rose during the recession.
3. Changes in real hourly wages and productivity per hour from the real GDP peak to trough.

Source: OECD Analytical Database; OECD (2010c); various national sources for data on hours.

StatLink  <http://dx.doi.org/10.1787/888932368232>

The crisis hit as Sweden was implementing reforms to boost employment and labour supply, including a reform of unemployment insurance and the introduction of an in-work tax credit. In the pre-crisis years these reforms, and a buoyant economy, increased employment and labour force participation. In the long run the reforms are expected to reduce structural unemployment by an estimated 0.5-2.0 percentage points (Konjunkturinstitutet, 2007; Forslund, 2008).

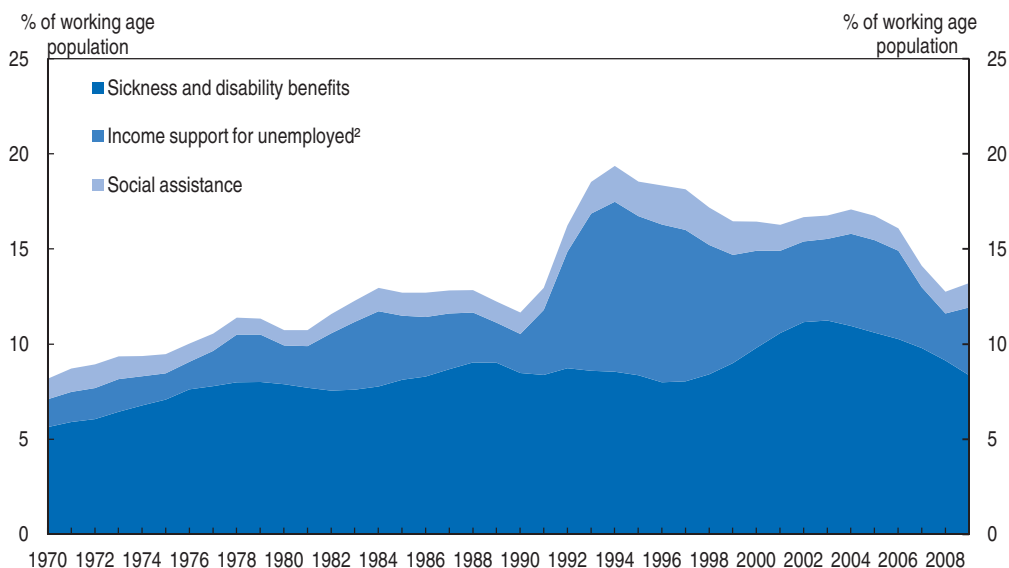
A longstanding problem for the Swedish labour market had been the large number of persons on incapacity benefits. The government had also undertaken reforms to promote this group's labour force participation (OECD, 2007, 2008). In 2008, new rules were put into force, tightening access to incapacity benefits and abolishing the temporary disability pension (OECD, 2009b). These reforms have contributed to both a lower inflow into and a higher outflow from incapacity benefits, causing the share of recipients in the working-age population to drop (Figure 3.6). The annual rate of outflows from disability pension has increased from 1% on average before the reforms to 1.9% in 2007 and 2.3% in 2008 (OECD, 2009b). However, empirical estimates suggest that, so far, most of those who have left the disability pension regime have moved into unemployment (Hägglund and Thoursie, 2010).

As the labour market started to deteriorate in 2008, the continued implementation of these reforms, along with an increase in the working-age population, more than offset the labour force withdrawal that usually occurs during a recession. This increase in the labour force pushed unemployment up further, in addition to the direct effect of the crisis.


Crisis measures mitigated the rise in unemployment

The rise in unemployment was cushioned by the general macroeconomic stimulus measures described in Chapters 1 and 2, but also by a series of labour market initiatives (Box 3.2 and Figure 3.7). The latter aimed to help the unemployed get into employment by

Figure 3.6. **Share of the working-age population receiving various types of income support¹**



1. The number of recipients (calculated as full-year equivalents) as a percentage of the working-age population.
 2. Includes recipients of unemployment benefits and support for unemployed in active labour market programmes.
 Source: Swedish Ministry of Finance; OECD.

StatLink  <http://dx.doi.org/10.1787/888932368251>

improving job-search incentives, stimulating labour demand and stepping up active labour market policies (ALMPs). The rise in unemployment was also limited by an extended access to the education system.

The tax on labour income was cut

An important labour market measure taken during the crisis was the permanent expansion of the in-work tax credit (*jobbskatteavdraget*). It was extended in 2009 and again in 2010 at a total cost of 0.8% of GDP. The threshold for the state income tax, which accrues to the central government and implies a strong progression from above average earnings, was also increased. These measures cut the marginal tax rate for most income levels below 107% of average full-time earnings (Figure 3.8). The average tax rate was reduced for all wage-earners, making it more attractive both to intensify job-search for the unemployed and to join the labour force for inactive people. In total these reforms are projected to increase employment by 0.6-0.8% according to estimates of the Swedish Ministry of Finance and the National Institute of Economic Studies (Swedish Fiscal Policy Council, 2010).

Taxation continues to impede the supply of hours for workers with earnings above 107% of the full-time average as they face very high marginal taxes compared with other OECD countries (OECD, 2010b). The government's intention to raise the lower threshold of the state income tax (as stated in the *Budget Bill for 2011*) would lower marginal taxes for workers with above-average earnings. However, the government could go even further and phase out the state income tax while raising taxes with less distortive effects on labour supply such as consumption and property taxes, as recommended in a previous OECD *Economic Survey* (OECD, 2008, and see Chapter 1).

Box 3.2. Labour market measures taken in the budgets for 2009 and 2010

	Description	Estimated <i>ex ante</i> cost (% of GDP)		Duration
		2009	2010	
Labour demand				
Job subsidies, recruitment incentives or public sector job creation	Doubling of the subsidy for the employment incentive scheme (<i>Nystartsjobb</i>).	0.03%	0.04%	Permanent
	The eligibility to the employment incentive scheme (<i>Nystartsjobb</i>) is broadened from July 2010 to June 2012 such that workers above age 55 qualify after a shorter duration of unemployment.		0.002%	Temporary
Reductions in non-wage labour costs for new hires	Increase in the grants to local governments to moderate the fall in local government employment.		0.52%	Temporary ¹
	Reduction in employer social security contributions. ²	0.27%	0.25%	Permanent
	Deferral of two months of employer social security contributions and taxes for up to 12 months. This will be in place until January 2011.	0.01%	0.01%	Temporary
Other	A tax credit for repair and maintenance work was introduced in 2009 to stimulate labour demand in the construction sector.	0.35% ³	0.36%	Permanent
	Additional government investment in infrastructure to support employment in the construction sector.	0.12%	0.20%	Temporary
Measures to help the unemployed find work				
Job search assistance and matching	Expanded job-search coaching (to a total of 27 500 places in 2009 and 38 000 in 2010).			
Work experience programmes	Increase in number of places in work experience programmes (21 600 new places in 2009 and 30 000 in 2010). New activation scheme (<i>Lyff</i>) introduced in 2010 in public sector and non-profit organisations (40 000 new places in 2010).	0.11%	0.12%	Temporary
Training programmes	Increase in the number of labour market training places (1 000 extra places in 2010).			
Job-finding and business start-up incentives	Reduction in social security contributions for self-employed and partners in partnerships. Increased coverage of sickness insurance for entrepreneurs.		0.05%	Permanent
Income support for job losers and low-income earners				
Generosity or coverage of unemployment benefits	Reduction in length of membership of an unemployment insurance fund required to draw on unemployment insurance leading to an easing of the access to it.	0.02%	0.02%	Temporary
Fiscal measures raising the net incomes of low earners	Introduction of a third step in the in-work tax credit in 2009. ^{2, 4} A fourth step in the tax credit was introduced in 2010.	0.48%	0.77%	Permanent
Other training measures				
Training for existing workers	In 2009, 1 000 additional places at vocational colleges and 3 600 more in adult vocational training/adult education. In both 2010 and 2011, 10 000 extra places at universities and colleges, 3 000 more at vocational colleges and 10 000 more in adult vocational training/adult education. Financial support for students has been increased.	0.02%	0.09%	Temporary ⁵
Apprenticeship schemes	In 2009-10, 1 000 additional places at a pilot project for apprenticeships in upper secondary school.			

1. In addition to the temporary grant the local governments' resources are permanently increased by 0.2% of GDP, compared to the level in 2009, from 2011 onwards.

2. Planned prior to the downturn.

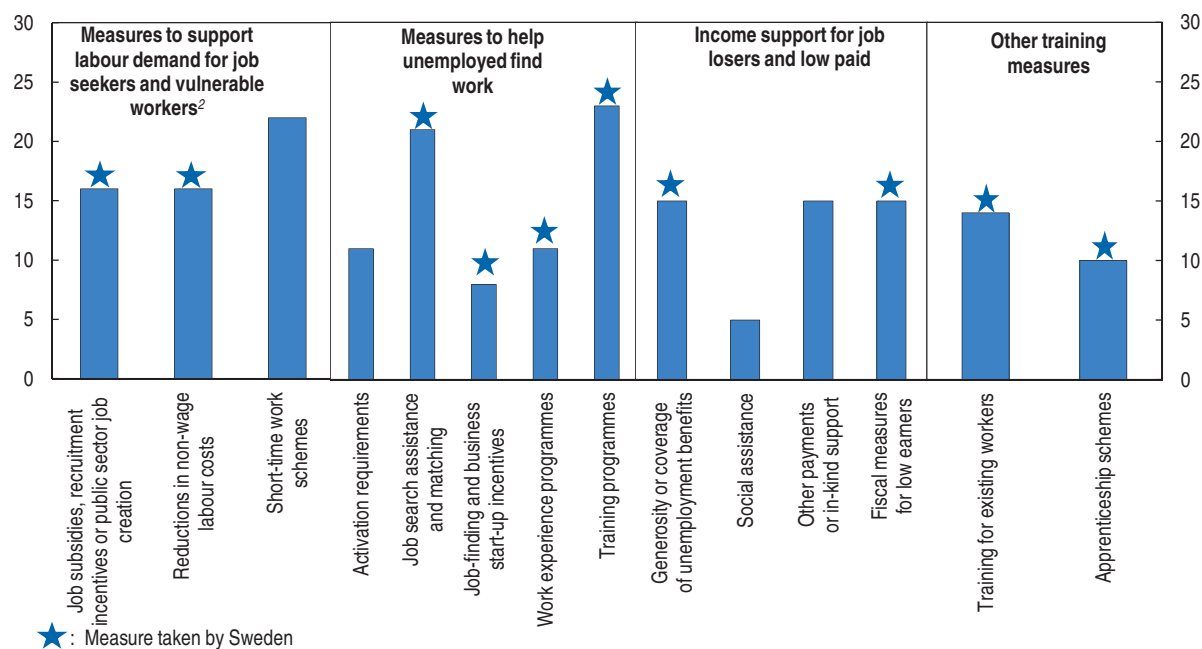
3. Ex post cost.

4. The cost includes an increase of the threshold for the state tax.

5. The increase in financial support for students is permanent.

Source: Response to OECD/EC questionnaire; OECD (2009a); Swedish Government (2008a, 2009b, 2009c, 2009d, 2010a, 2010b); OECD Economic Outlook 87 Database.

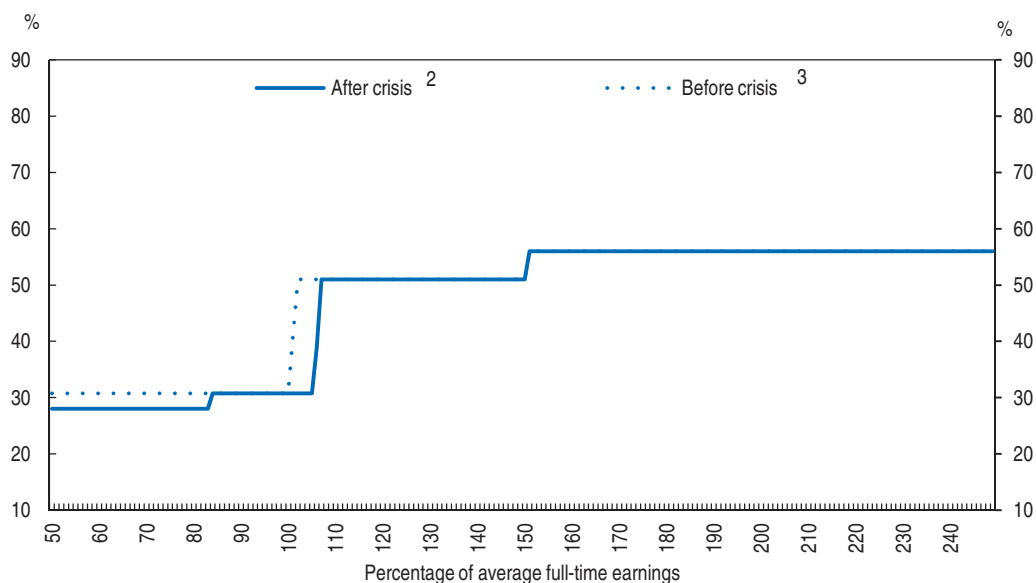
Figure 3.7. **Discretionary labour market policy measures in response to the crisis**
Number of OECD countries¹ that have taken different types of measures²



1. OECD countries except Iceland, Israel, Chile and Slovak Republic.
 2. Does not include measures to increase aggregate labour demand such as fiscal stimulus packages.
- Source: Response to OECD/EC questionnaire; OECD (2009a).

StatLink <http://dx.doi.org/10.1787/888932368270>

Figure 3.8. **Marginal personal income tax rate in Sweden¹**



1. The marginal personal income tax rate is the part of an increase of gross wage earnings that is paid in personal income tax and social security contributions by the employee.
2. "Before crisis" shows the marginal personal income tax rate in 2008.
3. "After crisis" shows the marginal personal income tax rate in 2010.

Source: OECD, *Taxing Wages 2008/2009* and calculations on the associated tax equations; Swedish Government (2008b, 2009a).

StatLink <http://dx.doi.org/10.1787/888932368289>

The Swedish in-work tax credit is not phased out as income rises, in contrast to most other OECD countries. It is fully phased in at 95% of full-time average earnings and not withdrawn for earnings above this threshold. As a result, it is expensive, with an *ex-ante* cost of 2.4% of GDP in 2010. The main reason for not phasing it out is to avoid very high marginal tax rates. Estimates show that phasing out the in-work tax credit would lower total hours significantly (Swedish Fiscal Policy Council, 2010; Bassanini *et al.*, 1999). However, lower marginal tax rates above average income levels would allow to taper the in-work tax credit and to expand it for low-income earners, thereby boosting their job incentives.

Enrolment in education was boosted

Measures were also taken to enrol unemployed workers in education. The number of positions in the education system was temporarily and modestly expanded and the financial support available for students was increased. The share of the labour force enrolled in education has risen in the two years to 2010.¹ However, this is unlikely to be attributable only to government policies, as the number of students usually increases in an economic crisis, especially in countries like Sweden where education is easily accessible (Furceri and Zdzienicka, 2010; Fredriksson, 1997).

The strategy to boost the educational attainment of the unemployed, in response to the crisis, was warranted. Workers with low education attainment were severely hit by the drop in employment (Figure 3.4), and the recession was an opportunity to provide them with the necessary education to (re)gain footing in the labour market. In particular, education can help job-losers who are required to change occupation or sectors due to structural changes following the recession (OECD, 2009a). The higher intake into the education system therefore has the potential to bring down structural unemployment and lift participation rates in the long run. In this regard, the expansion of vocational training and apprenticeship schemes is a step in the right direction.

However, implementing such a “skills first, work later” strategy is difficult and international evidence on its effectiveness is mixed (Scarpetta *et al.*, 2010). For Sweden, a number of risks stand out:

- A challenge will be to maintain the quality of education as the stock of students is expanded. Hence, careful evaluation of the impact on the performance of the education system is needed, as is indeed proposed in the *Budget Bill for 2011*. To the extent that the government uses private providers, it is important to design contracts in a manner that rewards good outcomes and minimises the disincentive to enrol weak clients and manipulate outcome indicators (OECD, 2005).
- As students may prefer to finish their programmes before entering the labour market, it could be more difficult for companies to hire workers with the necessary skills during the early stages of the recovery. This risk is amplified by the government’s decision to scale up the financial support for students, which makes it more attractive for them to prolong studies rather than enter the labour force. A system of tuition fees with an expansion of government loans for students to finance tuition fees, as recommended in a previous *OECD Economic Survey* (OECD, 2008), would increase student incentives to enter the labour market when job opportunities reappear. Alternatively, the financial incentives underpinning the existing study support scheme could be improved.
- To ensure the success of vocational education measures it is important that programmes match labour market needs. The administration of vocational education is shared

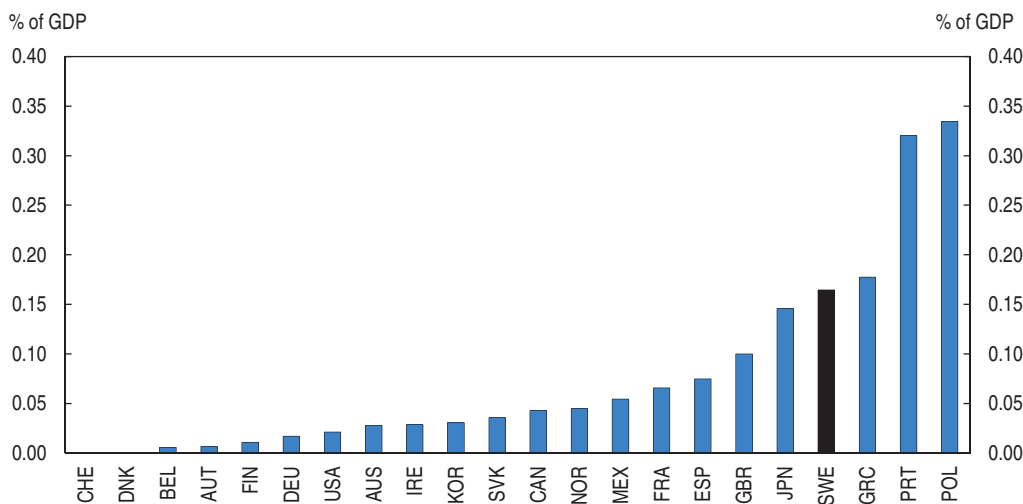
between the national agency for Higher Vocational Education (*Myndigheten för Yrkehögskolan*) and local governments. The latter are well placed to know the needs of the labour market locally but do not internalise the need for specific skills in other regions. The introduction of tuition fees at the post-secondary level would be one way to give a stronger market signal for vocational education providers to offer programmes in high demand and for students to choose the programmes that will improve their employability the most. Moreover, the publicly available information on the performance of various programmes needs to be extended. The national agency for Higher Vocational Education could be tasked to define and publish performance indicators.

- Experience from other OECD countries shows the importance of providing alternation between studies and on-the-job training to make sure that vocational education leads to employment for students (Scarpetta *et al.*, 2010). On-the-job training is an important element of vocational education organised at the national level, and the government has recently extended the use of apprentice programmes in upper secondary school. However, local governments have no obligation to provide on-the-job experience in their programmes.

Active labour market policy relies heavily on subsidised employment

Sweden was among the countries that ramped up ALMP expenditures the most during the crisis (Figure 3.9). This came on top of a level that was among the highest in the OECD before the crisis (1.1% of GDP in 2007). ALMP expenditures in Sweden are heavily tilted towards subsidised employment measures (with a share of 59%,² compared to an OECD average of 31% and to an average of 40% in Denmark, Finland and Norway). On the other hand the share of expenditures used on training is only 7%, which is significantly lower than the average in the OECD (25%) and in the other Nordics (30%). The distribution of expenditures shapes the composition of participants in ALMP programmes: 90% are enrolled in subsidised employment, while only 8% are enrolled in training measures (Table 3.1).

Figure 3.9. **Additional spending on active labour market programmes in 2008-10**¹



1. Average annual planned additional expenditure for 2008-10.

Source: OECD (2009a); OECD Labour Market Programmes Database.

StatLink  <http://dx.doi.org/10.1787/888932368308>

Table 3.1. **Composition of participants in active labour market programmes**^{1, 2}
As of 2008, %

	Training ²	Employment incentives ³	Supported employment and rehabilitation	Direct job creation	Start-up incentives	Job rotation and job sharing
SVK	1.5	10.9	2.1	62.5	23.0	0.0
LUX	5.4	83.3	0.3	11.0	0.0	0.0
AUS	6.6	0.0	73.0	20.4	0.0	0.0
SWE	7.6	61.7	28.5	0.0	2.2	0.0
ESP	8.6	71.8	2.1	0.0	14.2	3.4
CZE	9.7	15.1	59.1	8.6	7.5	0.0
POL	12.2	17.2	68.2	1.5	0.9	0.0
BEL	21.1	41.8	7.3	29.4	0.3	0.0
GBR	23.3	50.0	16.7	10.0	0.0	0.0
HUN	24.1	51.9	0.0	19.8	4.3	0.0
CHE	28.4	25.8	45.4	0.0	0.5	0.0
PRT	30.1	50.0	3.7	12.5	3.7	0.0
GRC	33.3	52.9	0.0	2.3	11.5	0.0
DNK	40.9	15.2	43.9	0.0	0.0	0.0
NLD	43.9	0.0	46.3	9.9	0.0	0.0
IRL	48.3	6.2	4.7	34.3	6.5	0.0
FIN	49.9	15.1	8.9	12.8	4.7	8.6
NZL	50.2	0.0	49.8	0.0	0.0	0.0
DEU	52.2	12.1	3.0	21.2	11.6	0.0
NOR	53.3	8.9	25.2	12.1	0.5	0.0
FRA	54.3	0.0	12.4	21.4	11.9	0.0
ITA	54.8	41.9	0.0	1.5	0.3	1.4
AUT	58.1	35.5	1.2	3.8	1.4	0.0
CAN	86.2	6.1	0.0	2.2	5.5	0.0

1. Training includes: institutional training; workplace training; integrated training; special support for apprenticeships.

2. Employment incentives include work experience placements in Sweden.

Source: OECD Labour Market Programmes Database.

In spite of the up-scaling of resources, the Public Employment Service (PES) experienced problems in ensuring the intended level of activation among the unemployed. Workers were referred to the mandatory Job- and Development Guarantee (Annex 3.A1) after an unemployment spell of 60 weeks (only 12 weeks for youth), and by August 2010 the share of the labour force enrolled in the scheme was 2.4% (including the Job Guarantee for the Youth). However, enrolment in the scheme did not ensure intervention. A study finds that within the first 120 weeks after enrolment 89% of the participants are not “sufficiently” engaged in activation and job-search activities, meaning that these take up less than 75% of their usual working hours, and 65% of the participants are engaged less than 10 hours per week or not at all (Martinson and Sibbmark, 2010).

The lack of activation was partly caused by problems in securing the planned number of work experience placements (Riksrevisionen, 2009c), but also by the government’s decision to keep the volume of labour market training programmes at a low level. These programmes had been scaled down markedly since the 1990s and, by 2008, Sweden was among the OECD countries with the lowest use of labour market training, although this should be seen in light of the decision to scale up volumes in the education system. Such a strategy was partly warranted as the Swedish experience with large volumes of institutional labour market training programmes in the 1990s yielded poor results in providing participants with regular employment (Calmfors *et al.*, 2001). However, in

countries like Sweden where the obligation to accept a job once enrolled in ALMPs is strong, ALMPs may act as a threat and may lead the unemployed to lower their reservation wage to find a job before enrolment (Rosholm and Svarer, 2004). Moreover, the low volumes of labour market training could create problems in identifying the unemployed who would benefit the most from these programmes as some unemployed may enrol in general education although they would need some more specific training.

The government also scaled up the employment incentive scheme (*Nystartsjobb*) (Annex 3.A1). In 2009 the subsidy to employers was doubled, and in 2010 the group of eligible workers was temporarily expanded. By August 2010, 0.6% of the labour force was enrolled in this scheme. As this scheme has substantial displacement effects, it is important that it targets those workers who are hardest to place (Lundin and Liljeberg, 2008). However, the probability of enrolment into the scheme is relatively high for the unemployed who just meet the minimum requirements for unemployment duration, but declines for unemployed with longer durations (Hansen, forthcoming). Moreover, few workers with a prior history of sickness are enrolled (Hägglund and Thoursie, 2010). Hence, the government could consider narrowing the scope of the scheme to try to better target the unemployed most in need of help.

The government has implemented a new subsidised employment measure for the long-term unemployed. From 2009, the unemployed with a spell of unemployment above 130 weeks are referred to mandatory work experience placement, mainly in the public sector or in non-profit organisations, where no wages or contributions are paid by the employer (Annex 3.A1). In the past such activities have proved rather unsuccessful in providing workers with regular employment (OECD, 2010c), and instead risk increasing the number of workers in labour market programmes permanently (OECD, 2009c). However, the schemes can be useful in keeping the unemployed attached to the labour market during a period of high unemployment. Given the continued inflow into the labour force of workers from the incapacity schemes, it seems reasonable to keep the work experience placement scheme in place in the early stage of the economic recovery. But as labour market conditions improve, subsidised employment measures ought to be downsized and workers moved to training programmes and job-search. The government is taking steps in this direction, with work experience programmes set to be scaled down as the labour market recovers.

To better target ALMP resources, statistical tools could be helpful. While some unemployed need training to find employment, job-search requirements backed with credible sanctions are sufficient for others. Therefore, the government should step up its efforts to identify the unemployed with a high risk of becoming long-term unemployed, and refer them to mandatory intervention as quickly as possible. In this regard, greater use of the statistical profiling tool could help the PES identify the short-term unemployed with the highest potential gain from early intervention, provided this tool is carefully designed (Frölich *et al.*, 2004; Bennmarker *et al.*, 2007; Tergeist and Grubb, 2006). Steps have been taken in this direction: a pilot programme has been completed, and the PES is currently working towards national implementation.

Additional reforms are needed to avoid lasting labour market scars

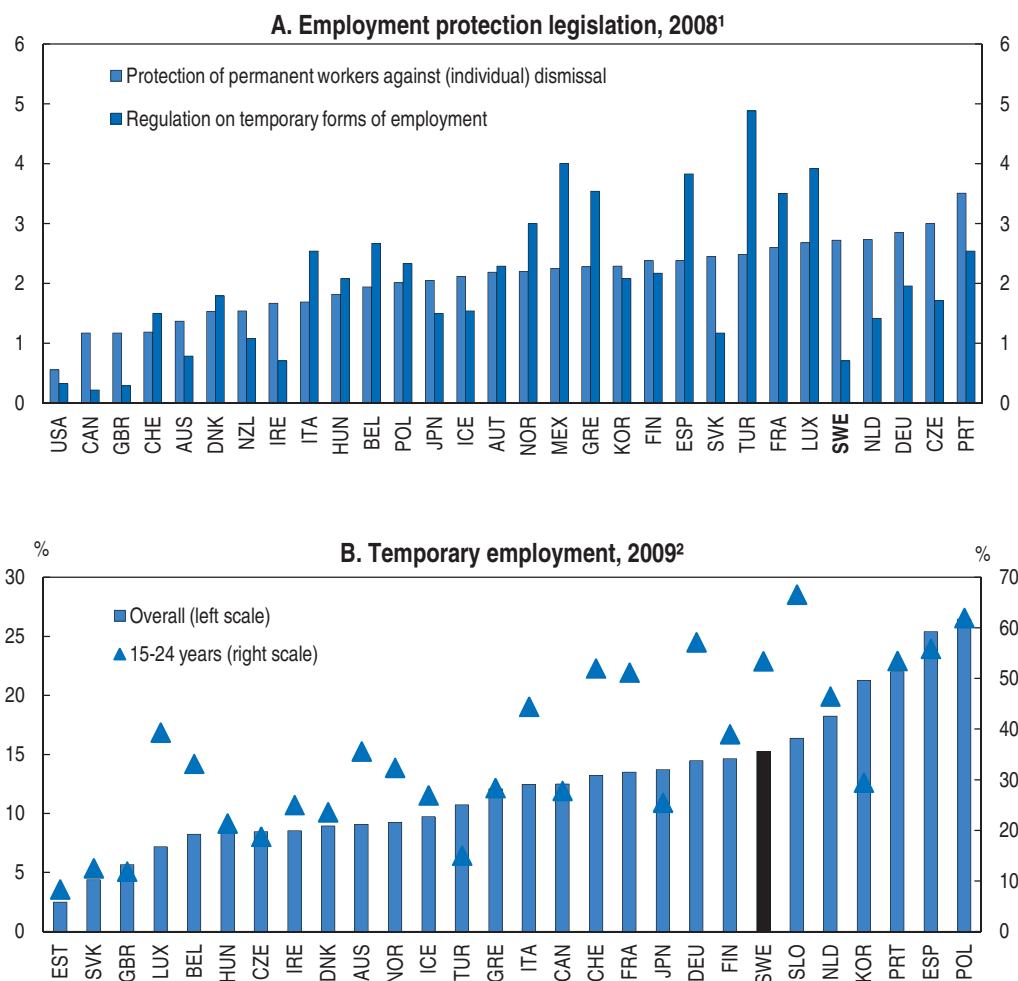
Additional reforms are required to avoid a long-lasting increase in unemployment and to extend labour market participation even further. They include reducing the duality in employment protection legislation (EPL), improving job-search incentive further and

increasing the flexibility of labour costs at the bottom of the wage distribution. Going forward, as the population ages, such measures may also be important for the viability of the Swedish welfare model (Andersen *et al.*, 2007).

Reduce the duality in employment protection legislation

The Swedish labour market model relies to a large extent on social partners' involvement through collective agreements. This allows accommodation to macroeconomic shocks and sectoral idiosyncrasies and changes, while providing workers with adequate security. Against this backdrop, Sweden is the OECD country with the starkest asymmetry in EPL between regular and temporary contracts (Figure 3.10, Panel A), reflecting high protection for workers with regular contracts and low protection for those on temporary contracts. This is a result of several reforms to lower EPL on temporary contracts since the 1990s, which were not matched by measures regarding regular

Figure 3.10. Labour market duality



1. OECD indicator for strictness of employment protection legislation. Index scale is 0 to 6, from least to most restrictive.

2. The incidence of temporary employment as a share of total dependent employment.

Source: OECD, Employment Protection Database; OECD, Labour Force Database.

StatLink  <http://dx.doi.org/10.1787/888932368327>

employment. The latest one, in 2007, increased the maximum duration for most kinds of fixed-term contracts to two years (OECD, 2007).

The bifurcation in legislation has contributed to a significant rise in the share of temporary workers. From a level around the OECD average of 10% (Booth *et al.*, 2002) in 1990, it has increased to over 15% in 2009, well exceeding the OECD average of just above 11% (Figure 3.10, Panel B). This is in line with the experience of other OECD countries that pursued a similar deregulation of temporary employment while leaving the regulation of regular contracts unchanged (OECD, 2004). The increase in temporary contracts is welcome to the extent it enhances the flexibility of the labour market and of the economy as a whole. However, the failure to ease regulations on regular contract and thereby to lower the duality in legislation tends to have a number of adverse effects:

- Strict EPL for regular contracts protects existing jobs. During the recovery this could also hamper the reallocation of labour towards more productive activities. In this regard it is striking that labour reallocation is low in Sweden, like in other countries with strict EPL for regular contracts (OECD, 2009a). Most empirical studies find a negative effect of EPL on job reallocation,³ which may help explain why countries with strict EPL experience a larger increase in structural unemployment following a severe recession (Furceri and Mourougane, 2009).
- EPL may lead to higher sickness absence, as witnessed in Sweden (see Skedinger (2010) for a survey). Higher employment protection reduces the risk of being fired and, therefore, the cost of absenteeism for workers (Arai and Thoursie, 2005). In addition, lower EPL is found to make employers less reluctant to hire workers with a history of sickness absence as the cost of dismissing them at a later stage is lower (Lindbeck *et al.*, 2006).
- Workers on temporary contracts are largely on the margin of the labour market, notably the youth and low-skilled (OECD, 2002). This group has much to gain from on-the-job training, but evidence from Sweden shows that employers provide less training to temporary workers (Walette, 2005). This undermines the ability of weaker groups to increase their productivity and thereby economy-wide productivity.

While workers on regular contracts in Sweden have no legal entitlement to severance payments, a number of factors make EPL for regular contracts strict (Table 3.2):

- Procedures are heavy. If a worker is dismissed on personal grounds, or because of redundancy, the worker's trade union must be notified and has the right to launch relocation negotiations. These can last up to six months and the notice cannot be served before the negotiations are concluded.
- The formal definition of a fair dismissal is strict and compensation for unfair dismissals is generous. In case of redundancy, dismissals are deemed fair only if the selection of workers is done in accordance with the "first-in-last-out" principle. If a worker is dismissed because of individual work capacity, the dismissal is deemed fair only if the employer has previously attempted to mitigate the problem by making adjustments to the workplace, or to rehabilitate or transfer the employee to other suitable work. While these rules can be circumvented through negotiations with the labour unions and firms with up to 10 employees face less restrictive rules (Bulow and Thorsie, 2010), the time used on these negotiations still implies higher dismissal costs. The high level of compensation for an unfair dismissal supplies the unions with leverage to achieve generous severance payments, which could explain why the share of dismissal cases tried in court is among the lowest in the OECD (Venn, 2009). Dismissal procedures and payments are agreed between employers

Table 3.2. **Components of the EPL indicator for Sweden**
As of 2008

Regulation of...		Score on a scale from 0 (least restrictive) to 6 (most restrictive)		Sweden's rank among OECD countries (1 = most strict)
		OECD average	Sweden	
Regular contracts	Notification procedures	3.0	4	3
	Delay involved before notice can start	1.2	2	5
	Length of notice period at 9 months of tenure	2.9	3	8
	Length of notice period at 4 years of tenure	2.7	5	1
	Length of notice period at 20 years of tenure	1.7	3	4
	Severance pay at 9 months of tenure	0.7	0	8
	Severance pay at 4 years of tenure	1.7	0	18
	Severance pay at 20 years of tenure	1.6	0	22
	Definition of justified or unfair dismissal	1.7	4	4
	Length of trial period	4.1	4	10
	Compensation following unfair dismissal	2.1	6	1
	Possibility of reinstatement following unfair dismissal	2.6	2	15
	Maximum time to make a claim of unfair dismissal	2.4	2	10
	Fixed-term contracts	Valid cases for use of fixed-term contracts	1.5	0
Maximum number of successive fixed-term contracts		2.2	0	21
Maximum cumulated duration of successive fixed-term contracts		1.3	3	2
Temporary work agencies	Types of work for which temporary work agency employment is legal	1.4	0	18
	Restrictions on number of renewals of temporary work agency contracts	2.8	2	15
	Maximum cumulated duration of successive temporary work agency contracts	1.9	2	11
	Authorisation and reporting requirements for temporary work agencies	3.3	0	23
	Regulations requiring equal treatment of regular and agency workers	4.0	0	24
Collective dismissals	Definition of collective dismissal	4.2	6	1
	Additional notification requirements for collective dismissals	3.5	3	13
	Additional delays involved before notice can start for collective dismissals	1.8	6	1
	Other special costs to employers of collective dismissals	1.7	0	17

Source: OECD, *Employment Protection Database*.

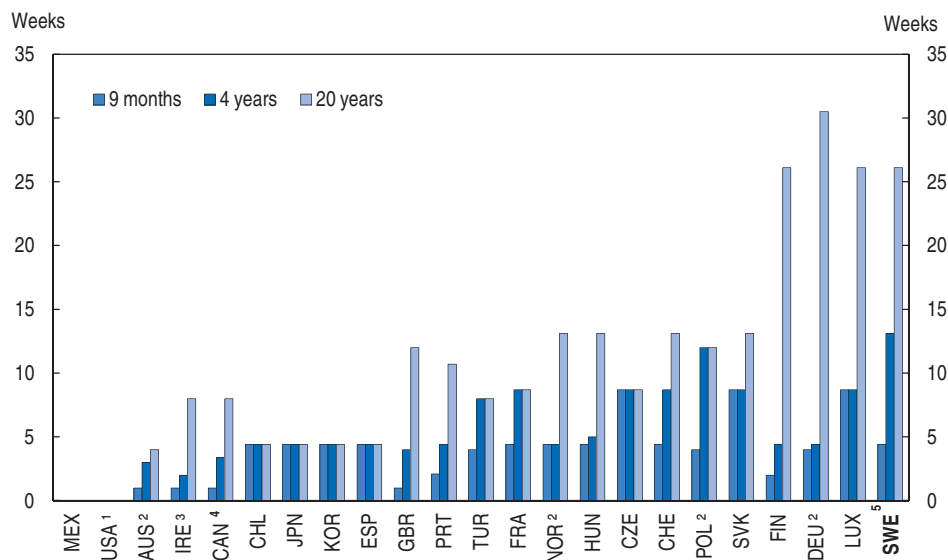
and unions on a case-by-case basis, which gives rise to uncertainty about the dismissal costs for employers and inequality of treatment between workers.

- Notice periods are long compared to other OECD countries (Figure 3.11).

Reforms of EPL in Sweden ought to ease the protection on regular contracts. Some dismissal costs are appropriate, to ensure that employers internalise at least part of the social cost of labour turnover and to protect workers from arbitrary actions. In particular, the procedures could be eased by abolishing the right of the unions to launch negotiations during the pre-notice period while the strict definition of a fair dismissal needs to be relaxed, as previously recommended (OECD, 2007). Moreover, to ensure that the mobility of workers with long tenure is not impeded, the maximum notice period could be reduced. In addition, to avoid a long period with low-productivity work after a dismissal, legislation could be considered that would facilitate severance payments in lieu of the notice period. This, however, would need to be complemented with adjustments in the timing of unemployment benefits in order not to affect public finances adversely.

If a broad-based reform of EPL does not prove feasible, a second-best solution would be to help the transition into regular employment by prolonging the trial period for regular contracts, as discussed in a previous *OECD Economic Survey* (OECD, 2007). However, this would not fully address the issues raised above.

Figure 3.11. **Notice periods in OECD countries**
After 9 months, 4 years and 20 years in the job



1. No legal regulation.
2. Special rules apply for workers above age 45 and 50 in Australia and Norway, respectively. In Germany special rules apply for workers below age 25. In Poland special rules apply for school leavers in first job and workers on trial periods.
3. Only workers covered by the Minimum Notice and Terms of Employment Act excluding *inter alia*, defence forces, police and certain merchant shipping employment agreements.
4. Average for Quebec, Ontario, Alberta and British Columbia.
5. Deviations are possible by collective agreements.

Source: OECD (2010f).

StatLink  <http://dx.doi.org/10.1787/888932368346>

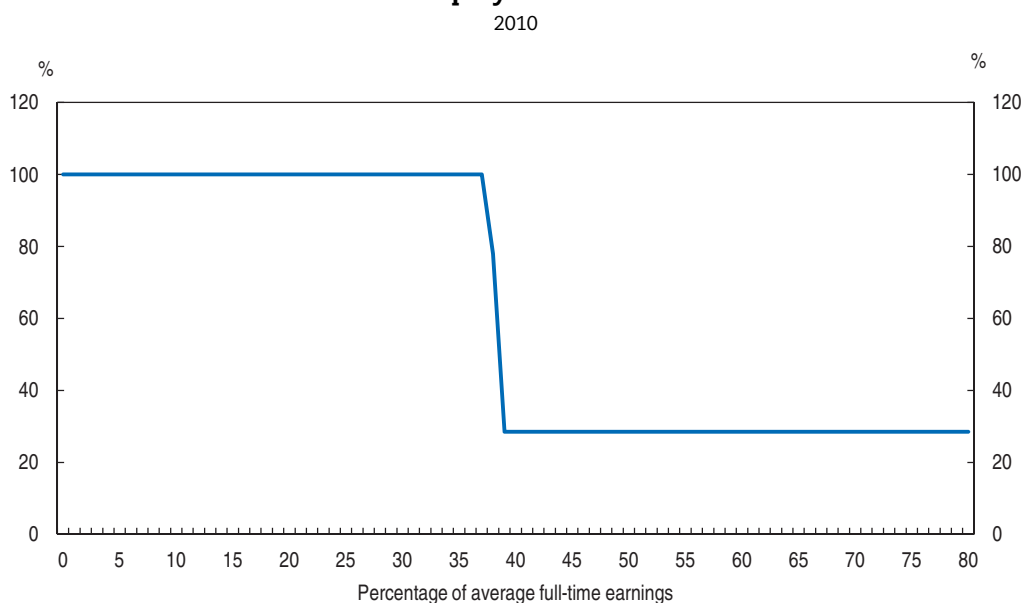
Strengthen job-search incentives further

The introduction, and subsequent expansion, of the in-work tax credit and the reform of unemployment benefits have reduced unemployment and inactivity traps in Sweden substantially (OECD, 2007). However, social transfers, such as housing benefits and social assistance, continue to hamper job-search incentives for some non-employed persons.

Housing and family benefits could be redesigned to improve incentives to participate in the labour market, while preserving social protection for those who need it. Today, housing benefits, which the *Budget Bill for 2011* stipulates will increase, are available for households with children and having low income. In addition they are available for individuals below age 29 with low income. In practice, this implies that some 60% of the recipients are either single parents or students.⁴ As housing benefits are income-tested, they add to the average and marginal effective tax rate. This detrimental effect on work incentives could be mitigated by removing these benefits while increasing the (non-income tested) family benefits for groups at risk of poverty. Such a reform would be in line with the recommendations made by the Family Commission (SOU, 2001) and in a previous *OECD Economic Survey* (OECD, 2007). It would reduce the effective tax rates for single parents and could, in turn, increase labour supply. The income effect for some single parents already employed who would lose housing benefits while not benefiting from an increase in family benefits could lead them to reduce their hours worked. However, a comparable reform simulated on a sample of single mothers in Sweden suggests that both employment and total working hours supplied by this group are likely to increase (Flood *et al.*, 2007).⁵


The fact that many unemployed rely on social assistance also undermines job-search incentives. In 2008, 4.5% of the Swedish population received social assistance (Dahlberg et al., 2009). This share has likely increased since, owing to the rise in unemployment and a decline in the share of unemployed eligible for income-related unemployment benefits and unemployment assistance.⁶ As social assistance is withdrawn one-for-one against earned income, the unemployed on social assistance face a marginal effective tax of 100% when moving into employment at up to 40% of average earnings (Figure 3.12). This is very penalising compared with other OECD countries, and blunts the incentive to take on part-time employment. It could help to explain the relatively low incidence of this type of employment in Sweden (OECD, 2010d).

Figure 3.12. **Marginal effective tax rate for a worker not eligible for unemployment benefits¹**



1. The marginal effective rate is computed using the parameters from the tax system in 2010 on the 2008 tax benefit model.

Source: OECD, *Tax Benefit Model*; Swedish Government (2007); Swedish Government (2009a).

StatLink  <http://dx.doi.org/10.1787/888932368365>

The dependence of the unemployed on social assistance has also created two parallel ALMP systems in Sweden. Social assistance is administered by local governments, and they have developed ALMP schemes in an attempt to curb their expenditures. The content of these schemes, and the enforcement of the requirement of recipients to participate, varies significantly across local governments. In general, little is known about the effect of the programmes. Consequently a dual ALMP has emerged with measures run by both the PES and local governments (Dahlberg et al., 2009).

Extending the coverage of unemployment benefits could alleviate these problems by reducing the share of unemployed depending on social assistance. Under the current rules all unemployed are eligible for unemployment assistance if they fulfil the basic requirements and a work condition.⁷ However, only members of unemployment insurance agencies (UIAs) are eligible for income-dependent unemployment benefits. There are 32 UIAs, most of them being run by labour unions. Unemployment benefits are mainly financed by the government

through grants (60% of the cost in 2009) and also through fees from members (40% of the cost). In 2007, fees were made differentiable across agencies so as to let labour market insiders bear a financial burden if wage growth caused unemployment to rise (OECD, 2007). In 2006, the government declared its intention to make unemployment insurance contributions mandatory, but subsequent reforms have lacked clear direction. In 2007, access to unemployment assistance for graduates was tightened, and the fees paid by the UIAs to the government were increased. As a consequence the UIAs increased their premiums, which contributed to a drop in the coverage from some 80% in 2006 to around 70% in 2009 (in per cent of the labour force).⁸ The government subsequently tried to increase coverage by decreasing fees in 2009, but this was offset by the higher level of unemployment, which caused the UIAs to increase premiums again. In 2010, the government launched an inquiry on the sickness and unemployment insurance systems.

While making the unemployment insurance contributions mandatory would be useful, ensuring local co-ordination between municipalities and the PES will remain a challenge (OECD, 2007). In this regard, the experience from other OECD countries in setting up “one-stop-shops” for the unemployed could be emulated (Tergeist and Grubb, 2006). In the United Kingdom, the employment service and income support were merged into *Jobcentre Plus*, a one-stop-shop for both employment services and income support for inactive and unemployed persons, with a positive impact on job-entry outcomes (Karagiannaki, 2007; Corkett *et al.*, 2005).

Tighten the enforcement of sanctions

Adverse effects on job search from income support can be offset at least to some extent by strict enforcement of availability requirements. This can encourage job search, help fill vacancies and bring down structural unemployment (Hasselpflug, 2005). However, the current administration of unemployment benefits creates problems in the sanctioning of reported violations of availability requirements. The PES monitors whether the unemployed fulfil the requirement for receiving benefits, whereas the UIAs pay out the benefits. Experience in OECD countries shows that competing UIAs that are not under strict government control can find ways to be more generous to their members than the legislation allows (Duell *et al.*, 2009). In Sweden, only 60% of the reports on violations sent to the UIAs lead to sanctions: 6% of the reports were never treated by the UIAs and 25% were not valid as they concerned individuals not receiving benefits; of the treated and valid reports 85% lead to a sanction (IAF, 2010).

A related priority is to ensure that violations of the availability requirements are duly reported by the PES. The National Audit Office has documented that the PES reports only some of the actual violations (Riksrevisionen, 2005). More recent evidence points to regional differences in reporting procedures (Okeke, 2008). The PES was reorganised in 2008 to mitigate these problems by separating the responsibility for support from that of monitoring. However, so far the effects of this reform appear uncertain as the number of reports in 2009/10, adjusted for the level of unemployment and vacancies in the economy, reached a historical minimum (IAF, 2010). To ensure that reported violations do lead to a sanction by UIAs and to increase the incentives for the PES to report violations and improve the quality of its services, the administration of unemployment benefits and the job-placement service should be better co-ordinated or merged. Merging the two institutions would require replacing the current system of numerous union-organised unemployment insurance agencies by a simpler national system.

More gradual, as opposed to tougher, sanctions could help. Experience from other OECD countries shows that a more systematic application of sanctions is likely to be more efficient than stricter sanctions. Indeed, overly strict sanctions may tend to weaken enforcement, insofar as case workers consider them too harsh to be applied (OECD, 2006a). Analysis from Switzerland shows that even mild sanctions, such as warnings, can have a significant positive effect on the exit rate out of unemployment (Lalive *et al.*, 2005). Other countries (*e.g.* France) have combined a greater use of sanctions with some reduction in the size of the sanction imposed for the first violation. Today, the initial sanction for non-compliance of the unemployed in Sweden is a cut in benefits of 25% during 40 days. A second occurrence leads to a cut of 50% for another 40 days. As a final sanction, the unemployed person loses the right to benefits altogether. The government could consider combining a tightening of reporting procedures with even more gradual sanctions, *e.g.* by increasing the use of warnings before benefits are cut. Such warnings, however, need to be backed by credible threats about subsequent cuts in benefits in case of non-compliance.

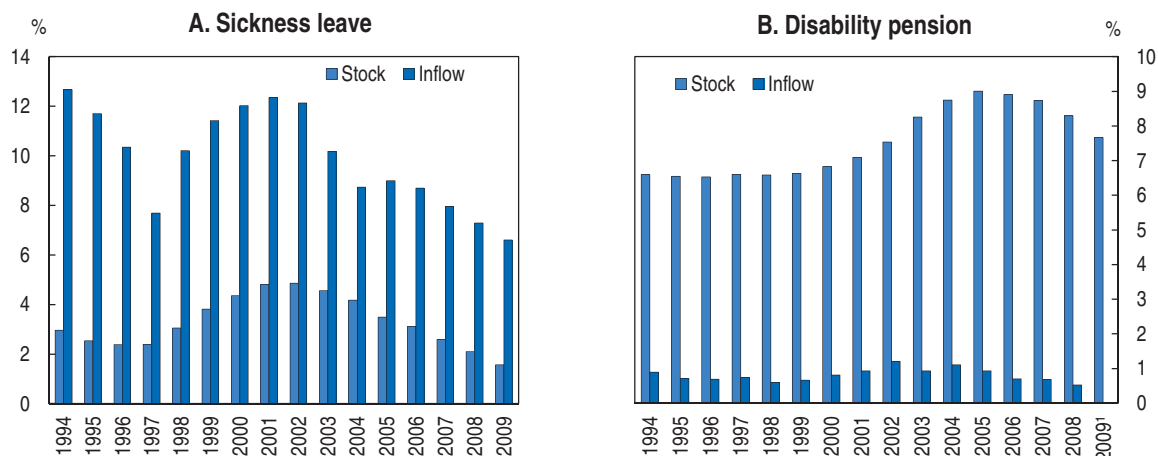
To promote efficient reporting and follow-up, as well as best practices in general, the government could also consider implementing performance indicators for the PES like in some other OECD countries. Switzerland for example has since 2000 published ratings at the regional level of the performance of local PES offices adjusted for the labour market situation in the area (Duell *et al.*, 2010). The mere publication of such indicators could act as an incentive to improve performance and ultimately the remuneration of managers in the PES could be linked to such indicators.

Tightening the regional search requirements could also improve the matching process and bring down structural unemployment. Before the onset of the recession unemployment rates were higher in Sweden's rural regions than in the urban areas. The recession widened this gap as the rural regions were hit harder owing to their reliance on manufacturing (OECD, 2010a). In 2007, the government abolished the rule that allowed unemployed to limit their job-search geographically in the first 100 days of unemployment, but the enforcement of the new rules is weak (Riksrevisionen, 2009a). Tightening the administration of the geographical search requirements would help, but obstacles such as strict rent regulation are likely to continue to impede the regional mobility of labour (OECD, 2010e). Further facilitation of mobility would therefore require reforms of the Swedish housing market, as discussed in depth in a previous *OECD Economic Survey* (OECD, 2007).

Continuing with reform of the disability benefit schemes

An important challenge is to ensure that the recent expansion of the labour force with former recipients of incapacity benefits ultimately leads to a higher level of employment (Figure 3.13). The 1997 Swedish disability reform illustrates that abolishing incapacity schemes does not automatically boost employment, as there is a risk that other labour market programmes will have to absorb the workers (Karlström *et al.*, 2008). In this regard, the financial incentives given to recipients of disability benefits to return to the labour market are welcome. However, if this measure, along with the improved gate-keeping mechanisms, proves to lead to an insufficient reduction in the stock of recipients, further decreasing the replacement ratio, which is still above the OECD average (OECD, 2009b), could be considered. Another priority is to ensure that the improved gate-keeping procedures for incapacity benefits are implemented. In addition, the government could consider improving gate-keeping further, *e.g.* by delegating the medical evaluation for longer sickness spells to special insurance teams as discussed in a previous *OECD Economic Survey* (OECD, 2005).

Figure 3.13. **Sickness leave and disability pension**
Percentage of working-age population



1. Inflows are not available for 2009.

Source: Swedish Fiscal Policy Council (2010); Swedish Social Insurance Agency; OECD Analytical Database.

StatLink  <http://dx.doi.org/10.1787/888932368384>

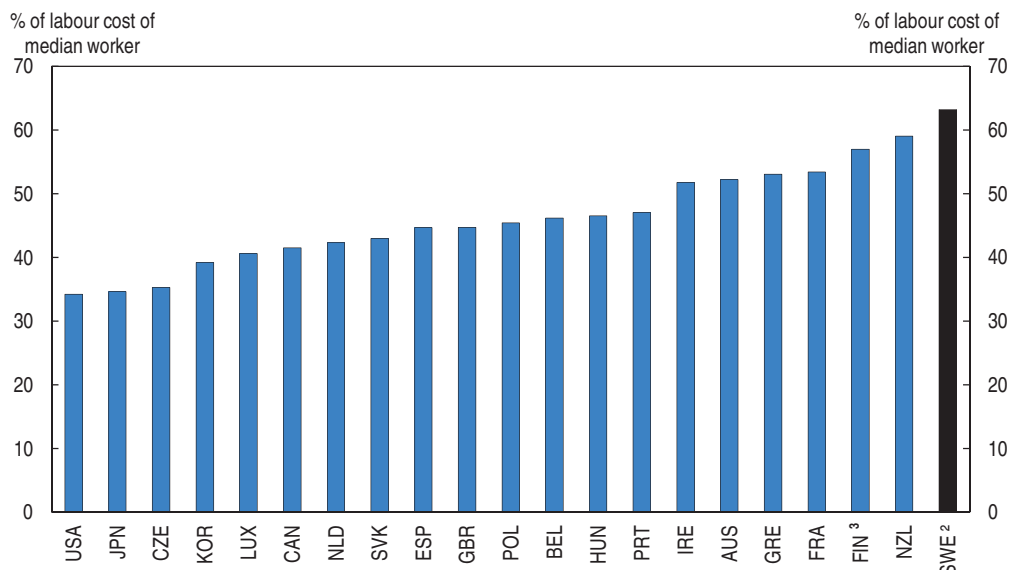
Enhance wage flexibility

The high minimum cost of labour in Sweden could prove to be a significant barrier to the integration of the former recipients of incapacity benefits in the labour market (Figure 3.14). The high level is mainly caused by the minimum wages set in collective agreements, but employer contributions also add to the cost of labour (31.4% for workers aged 26-65 and 15.5% for younger workers). As the high minimum cost of labour increases the productivity threshold from which it is profitable to hire workers, the employment of low-productivity groups could be adversely affected. Empirical evidence suggests a negative effect of minimum wages on employment of low-productivity workers in the hotel and restaurant sector, where the minimum wage is among the highest in the economy (Skedinger, 2006). A recent survey also indicates that in 2008 around 15% of all unemployed and around 26% of workers with a pre-history of incapacity benefits had a “hypothetical”⁹ wage below the relevant minimum wage, suggesting that the minimum wage can be an obstacle to their entry into the labour market (Konjunkturinstitutet, 2010).

The high level of minimum wages is influenced by the organisation of wage negotiations. No minimum wage is legislated in Sweden, but collective agreements specify minimum wages for employees in different sectors (Skedinger, 2007). These agreements also differentiate minimum wages across individual characteristics such as age, work experience and location. All workers employed in a company that is a member of the signatory employer organisation are covered by a collective agreement, whether workers are unionised or not. This implies that 80% of workers are covered by minimum wages. In addition, the employees of non-member companies can achieve coverage if the company signs an agreement with the relevant labour union, implying that another 10% of workers are covered through this mechanism (Medlingsinstitutet, 2008). Non-member companies have strong incentives to sign such an agreement as unions are entitled to take action against non-signatory firms even if the workplace has no union members.


Figure 3.14. **Minimum cost of labour**¹

2009



1. The cost of labour is the sum of the wage level and the corresponding social security contributions paid by employers. The minimum cost of labour for Sweden is in 2009, while it is in 2008 for the other countries.
2. The minimum wage in Sweden is computed as the lowest negotiated minimum wage across sectors plus the social security contributions paid for employees above the age of 26. The median wage used is the median wage for workers in the private sector.
3. The minimum labour cost for Finland is from 2004 and calculated on data provided by national authorities.

Source: OECD, *Going for Growth Database*; calculations on data from Skedinger (2007); Statistics Sweden; OECD (2006b); Hansen (forthcoming).

StatLink  <http://dx.doi.org/10.1787/888932368403>

According to theoretical and empirical studies, negotiations at the sector level leads to higher wage outcomes than negotiations at the local level (Calmfors and Drifill, 1988; OECD, 2006a). In Sweden, wage negotiations have become more decentralised since the 1990s but minimum wages continue to be set at a sectoral level (Skedinger, 2007). Several options could be considered to ensure that minimum wages do not price out low-productivity workers. Under the current system, transparent opt-out clauses could be introduced allowing for local wage agreements at levels below the minima. Alternatively, an independent commission could be set up, in the vein of the UK Low Pay Commission, which would play a role and advise on the impact of minimum wages on employment. In the latter case, the size of the fees paid by UIAs to the government could be made conditional on whether the negotiated minimum wages are in line with the independent commission's recommendations. Finally, making unemployment insurance contributions mandatory could also help align minimum wages better with productivity. This is because labour unions would have to take into account the employment prospects of a larger range of workers. Furthermore, breaking the link between the affiliation to a union and the entitlement to unemployment benefits is likely to weaken the bargaining power of labour unions.

Box 3.3. Summary of labour market recommendations

Active labour market policy

Progressively move the ALMP mix away from work experience placement schemes towards training and job search.

Improve the targeting of ALMP by increasing the use of profiling to identify individuals at risk of becoming long-term unemployed and revisiting the eligibility criteria for the employment incentive scheme (*Nystartjobb*).

Education policy

Consider moving gradually towards a system of tuition fees for tertiary education while extending the government loans available for students to finance tuition costs. Repayment of these loans could be made contingent on future income provided marginal income taxes are reduced.

Further develop information on and indicators of the performance of vocational education and make them publically available.

Assess the impact of using education programmes for unemployed workers' probability of moving into employment and on the quality of the education system.

Hours worked and job-search incentives

To lower marginal tax rates for workers with above-average earnings, reduce the state income tax and offset the fall in government revenues by, for instance, raising property taxes.

Continue to improve the job-search incentives of the unemployed by reducing the tax wedge and reforming social benefits. In particular a cut in housing benefits could be combined with a targeted increase in family benefits.

Extend the coverage of unemployment insurance by making unemployment insurance contributions mandatory.

Strengthen the implementation of sanctions when job-search requirements are not met while making sanctions more gradual. Strongly improve co-ordination between the job-placement service and the administration of unemployment benefits. Implement performance indicators for the PES.

Employment protection legislation

Reduce the protection of workers on regular contracts by easing procedures for individual and collective dismissals. Consider legislation to facilitate the use of severance payments in lieu of the notice period.

Wage flexibility

Promote the use of transparent opt-out clauses allowing for local wage agreements at levels below the minima or consider moving towards a system where an independent commission plays a role and advises on the impact of minimum wages on employment.

Sickness and disability benefits

Continue the reforms to improve the gate-keeping to sickness and disability benefits.

If the ongoing reforms of the sickness and disability benefit scheme fail to reduce substantially the number of recipients of these benefits, lower the replacement ratio further.

Notes

1. The share of full-time students in the working-age population increased by 0.7 percentage points from February 2008 to February 2010.
2. This covers employment incentive schemes, subsidised employment and rehabilitation.
3. Von Bulow and Thoursie (2010) study the specific effect of the “last-in-first-out” rule in Sweden. Using the exemption of small firms from this rule they do not find any large effect on hiring and firing rates. They suggest that this is because employers can circumvent the rule through negotiations with unions.
4. In 2009, 50% of all recipients were single households with children. 21% of all recipients were households below age 29 with no children. Of the latter group 33% are students.
5. This reform also combined a cut in income tested benefits with a lump-sum increase in income. Specifically, the reform increased the basic tax deduction, reduced social assistance benefits and introduced maximum fees on childcare.
6. The share of unemployed receiving income-dependent unemployment benefits has decreased from around 60% in 2007 to 50% in 2009. The share of unemployed receiving only unemployment assistance has decreased from 10% in 2005 to 5% in 2009.
7. The basic requirements stipulate the unemployed must be able and willing to take a job. The work condition implies that the unemployed should have either: worked at least 6 out of the past 12 months, with a minimum of 80 hours per month, or worked for at least 480 hours during a consecutive period of 6 months with at least 50 hours of work per month.
8. The number of members of UIAs fell from 3.79 million in December 2006 to 3.36 million in November 2009.
9. The “hypothetical” wage is based on past wages adjusted to account for the negative impact of unemployment on wages.

Bibliography

- Andersen, T., B. Holmström, S. Honkapohja, S. Korkman, H. Söderströmand and J. Vartiainen (2007), *The Nordic Model*, The Research Institute of the Finnish Economy, Helsinki.
- Arai, M. and P. Thoursie (2005), “Incentives and Selection in Cyclical Absenteeism”, *Labour Economics*, Vol. 12.
- Bassanini, A. and R. Duval (2006) “Employment Patterns in OECD Countries: Reassessing the Role of Policies and Institutions”, *OECD Economics Department Working Papers*, No. 486.
- Bassanini, A., J. Rasmussen and S. Scarpetta (1999), “The Economic Effects of Employment-Conditional Income Support Schemes for the Low-Paid – an Illustration From a CGE Model Applied to Four OECD Countries”, *OECD Economics Department Working Papers*, No. 224.
- Benmarker, H., K. Carling and A. Forslund (2007), “Vem blir långtidsarbetslös”, *IFAU Rapport*, No. 7.
- von Below, D. and P. Thoursie (2010), “Last In, First Out? Estimating the Effect of Seniority Rules in Sweden”, *Labour Economics*, forthcoming.
- Booth, A., J. Dolado and J. Frank (2002), “Symposium on Temporary Work: Introduction”, *The Economic Journal*, Vol. 112, No. 480.
- Calmfors, L., J. Driffill, S. Honkapohja and F. Giavazzi (1988), “Bargaining Structure, Corporatism and Macroeconomic Performance”, *Economic Policy*, Vol. 3, No. 6.
- Calmfors, L., A. Forslund and M. Hemström (2001), “Does Active Labour Market Policy Work? Lessons From the Swedish Experiences”, *Swedish Economic Policy Review*, Vol. 8.
- Corkett, J., S. Bennett, J. Stafford, M. Frogner and K. Shrapnell (2005), “Jobcentre Plus Evaluation: Summary of Evidence”, *Department for Work and Pensions Research Report*, No. 252.
- Dahlberg, M., K. Edmark, J. Hansen and E. Mörk (2009), “Fattigdom i Folkhemmet”, *IFAU Rapport*, No. 4.
- Duell, N., D. Grubb and S. Singh (2009), “Activation Policies in Finland”, *OECD Social, Employment and Migration Working Papers*, No. 98.
- Duell, N., P. Tergeist, U. Bazant and S. Cimper (2010), “Activation Policies in Switzerland”, *OECD Social Employment and Migration Working Papers*, No. 112.

- Erlandsen, E. and J. Lundsgaard (2007), "How Regulatory Reforms in Sweden Have Boosted Productivity", *OECD Economics Department Working Papers*, No. 577.
- Flood, L., R. Wahlberg and E. Pykkänen, "From Welfare to Work: Evaluating a Tax and Benefit Reform Targeted at Single Mothers in Sweden", *Labour*, Vol. 21, No. 3.
- Forslund, A. (2008), Den svenska jämviktsarbetslösheten: en översikt, *Studier i Finanspolitik*, No. 4, Finanspolitiska Rådet.
- Fredriksson, P. (1997), "Economic Incentives and the Demand for Higher Education", *Scandinavian Journal of Economics*, Vol. 99, No. 1.
- Frölich, M., M. Lechner and H. Steiger (2004), "Statistically Assisted Programme Selection – International Experiences and Potential Benefits for Switzerland", *IFAU Working Paper*, No. 1.
- Furceri, D. and A. Mourougane (2009), "How Do Institutions Affect Structural Unemployment in Times of Crisis?", *OECD Economics Department Working Papers*, No. 730.
- Furceri, D. and A. Zdzienicka (2010), "The Effect of Banking Crises on Human Capital", *mimeo*.
- Guichard, S. and E. Rusticelli (2010), "Assessing the Impact of the Financial Crisis on Structural Unemployment in OECD Countries", *OECD Economics Department Working Papers*, No. 767.
- Hansen, N. (forthcoming), "Limiting Long-Term Unemployment and Non-Participation in Sweden", *OECD Economics Department Working Papers*.
- Hasselpflug, S. (2005), "Availability Criteria in 25 Countries", *Danish Ministry of Finance Working Paper*, No. 12.
- Hägglund, P. and P. Thoursie (2010), "De senaste reformerna inom sjukförsäkringen: En diskussion om deras förväntade effekter", *Studier i Finanspolitik*, No. 5, Finanspolitiska Rådet.
- IAF (2010), "Underrättelser om ifrågasatt rätt till arbetslöshetsersättning och sanktioner i arbetslöshetsförsäkringen", www.iaf.se/Global/Tillsyn/Rapporter-pm/2010/2010-3Underr.pdf.
- IF Metall (2009), "12 000 uppsägningar har undvikits", www.ifmetall.se/ifmetall/home/home.nsf/LUUnique/65DAAD11CBB057A1C125767B00465BE.
- Karagiannaki, E. (2007), "Exploring the Effects of Integrated Benefit Systems and Active Labour Market Policies: Evidence from Jobcentre Plus in the UK", *Journal of Social Policy*, Vol. 36, No. 2.
- Karlstrom, A., M. Palme and I. Svensson (2008), "The Employment Effect of Stricter Rules for Eligibility for DI: Evidence from a Natural Experience in Sweden", *Journal of Public Economics*, Vol. 92, No. 10-11.
- Konjunkturinstitutet (2007), *Lönebildningsrapporten 2007*, Stockholm.
- Konjunkturinstitutet (2010), *Lönebildningsrapporten 2010*, Stockholm.
- Lalive, R., J. van Ours and J. Zweimüller (2005), "The Effect of Benefit Sanctions on the Duration of Unemployment", *Journal of the European Economic Association*, Vol. 3, No. 6.
- Liebig, T. (2009), "Jobs For Immigrants: Labour Market Integration in Norway", *OECD Social, Employment and Migration Working Papers*, No. 94.
- Lindbeck, A., M. Palme and M. Persson (2006), "Job Security and Work Absence: Evidence From a Natural Experiment", *Research Institute of Industrial Economics Working Paper*, No. 660.
- Lundin, D. and L. Liljeberg (2008), "Arbetsförmedlingens arbete med nystartsjobben", *IFAU Rapport*, No. 9.
- Martinson, S. and K. Sibbmark (2010), "Vad gör de i jobb- och utvecklingsgarantin?", *IFAU Rapport*, No. 15.
- Medlingsinstitutet (2008), "Avtalsrörelsen och lönebildningen 2009", *Medlingsinstitutets Årsrapport*, Stockholm.
- OECD (2002), *OECD Employment Outlook*, Paris.
- OECD (2004), *OECD Employment Outlook*, Paris.
- OECD (2005), *OECD Employment Outlook*, Paris.
- OECD (2006a), *OECD Employment Outlook*, Paris.
- OECD (2006b), *OECD Economic Surveys: Finland*, Paris.
- OECD (2006c), *Boosting Jobs and Incomes – Policy Lessons from Reassessing the OECD Jobs Strategy*, Paris.
- OECD (2007), *OECD Economic Surveys: Sweden*, Paris.
- OECD (2008), *OECD Economic Surveys: Sweden*, Paris.

- OECD (2009a), *OECD Employment Outlook: Tackling the Jobs Crisis*, Paris.
- OECD (2009b), "Sweden: Will the Recent Reforms Make it?", *Sickness, Disability and Work: Breaking the Barriers*, Paris.
- OECD (2009c), "Maintaining the Activation Stance During the Crisis", *OECD Labour and Employment Ministerial Meeting Background Document*, Paris.
- OECD (2010a), *OECD Territorial Reviews: Sweden*, Paris.
- OECD (2010b), *Taxing Wages 2008-2009*, Paris.
- OECD (2010c), "Return to Work After the Crisis", *OECD Economic Outlook*, No. 87, Paris.
- OECD (2010d), *OECD Employment Outlook*, Paris.
- OECD (2010e), "The Role of Structural Policies in Housing Markets", *ECO/WP/CPE/WP(2010)14*, Paris.
- OECD (2010f), "Detailed Description of Employment Protection in OECD and Selected Non-OECD Countries, 2008", www.oecd.org/dataoecd/24/39/42740165.pdf.
- Okeke, S. (2008), "Regionala skillnader i kontrollfunktionen", *Arbetsförmedlingen Working Paper Series*, No. 6.
- Riksbank (2010a), *Monetary Policy Report*, February, Stockholm.
- Riksrevisionen (2005), "Arbetslöshetsförsäkringen – kontroll och effektivitet", *RiR*, No. 3, Stockholm.
- Riksrevisionen (2009a), "Omställningskraven i arbetslöshetsförsäkringen", *RiR*, No. 13, Stockholm.
- Riksrevisionen (2009b), "Jobbskatteavdraget", *RiR*, No. 20, Stockholm.
- Riksrevisionen (2009c), "Jobb- och utvecklingsgarantin – en garanti för jobb?", *RiR*, No. 22, Stockholm.
- Scarpetta, S., A. Sonnet and T. Manfredi (2010), "Rising Youth Unemployment During the Crisis", *OECD Social, Employment and Migration Working Papers*, No. 106.
- Skedinger, P. (2006), "Minimum Wages and Employment in Swedish Hotels and Restaurants", *Labour Economics*, Vol. 13, No. 2.
- Skedinger, P. (2007), "The Design and Effects of Collectively Agreed Minimum Wages: Evidence from Sweden", *IFN Working Papers*, No. 700.
- Svarer, M. and M. Rosholm (2004), "Estimating the Threat Effect of Active Labour Market Programmes", *IZA Discussion Paper*, No. 1300.
- SOU (2001), "Ur fattigdomsfällan", *Statens offentliga utredningar*, No. 2001:24.
- SOU (2010), "Lärling – en bro mellan skola och arbetsliv", *Statens offentliga utredningar*, No. 2010:19.
- Swedish Fiscal Policy Council (2010), *Report of the Swedish Fiscal Policy Council*, Stockholm.
- Swedish Government (2008a), "Budget Bill for 2009", *Proposition*, No. 2008/09:1, Stockholm.
- Swedish Government (2008b), "Sänkt skatt på förvärsinkomster", *Promemoria*, June, Stockholm.
- Swedish Government (2009a), "Ett ytterligare förstärkt jobbskatteavdrag", *Proposition*, No. 2009/10:42, Stockholm.
- Swedish Government (2009b), "Budget Bill for 2010", *Proposition*, No. 2009/10:1, Stockholm.
- Swedish Government (2009c), "Measures for Jobs and Adjustment", *Proposition*, No. 2008/09:97, Stockholm.
- Swedish Government (2009d), "2009 Spring Fiscal Policy Bill", *Proposition*, No. 2008/09:100, Stockholm.
- Swedish Government (2010a), "2010 Spring Fiscal Policy Bill", *Proposition*, No. 2009/10:100, Stockholm.
- Swedish Government (2010b), "Budget Bill for 2011", *Proposition*, No. 2009/10:1, Stockholm.
- Tergeist, P. and D. Grubb (2006), "Activation Strategies and the Performance of Employment Services in Germany, the Netherlands and the United Kingdom", *OECD Social, Employment and Migration Working Papers*, No. 42.
- Venn, D. (2009), "Legislation, Collective Bargaining and Enforcement: Updating the OECD Employment Protection Indicators", *OECD Social, Employment and Migration Working Paper*, No. 89.
- Wallette, M. (2005), "Temporary Jobs and On-the-Job Training in Sweden – A Negative Nexus?", *Lund University Department of Economics Working Paper*, No. 13.

ANNEX 3.A1

Unemployment benefits and active labour market policy programmes in Sweden

Unemployment benefits

Unemployed workers with insurance are provided unemployment benefits for a maximum duration of 60 weeks (90 weeks for unemployed with dependent children). The gross replacement rate is 80% for the first 40 weeks and 70% for the following 20 weeks. After 60 weeks of unemployment, the unemployed is referred to the Job and Development Guarantee, where she or he receives activity support with a gross replacement rate of 65%. However, for many workers the replacement rate is *de facto* lower as both unemployment benefits and activity support are capped at 50% of average earnings.

Unemployed workers without insurance are provided with unemployment assistance if they fulfil the work condition. Unemployment assistance has a flat rate of 24% of average earnings, and the maximum duration is 60 weeks (90 weeks for unemployed with dependent children). After 60 weeks of unemployment, they are referred to the Job and Development Guarantee, where development support is paid at a flat gross replacement rate of 16% of average earnings.

Job and Development Guarantee and the Job Guarantee for the Youth

The *Job and Development Guarantee (Jobb- och utvecklingsgarantin)* (JDG) provides the overall framework for the long-term unemployed, and aims at bringing them back into employment through individually designed activities. The unemployed are referred to the JDG after 60 weeks in unemployment. The first phase of the guarantee lasts 30 weeks and mainly involves job search and coaching activities. Phase two lasts 60 weeks and is meant to provide work experience to the harder-to-place participants. In phase three, the participants are supposed to be given permanent employment by private or public employers. The participants receive public benefits and the employer will pay neither wage nor social contributions or insurance. Participants' ability to work will be reviewed every second year. The third phase of the guarantee is open-ended, and participants are meant to stay in the guarantee until regular employment is found or they enrol in the education system. Participants are obliged to continue job-search activities with the assistance of the Public Employment Service.

The unemployed youth (16-24 years) are referred to the *Job Guarantee for the Youth (Jobbgarantin för ungdomar)* after 12 weeks of unemployment. Phase one lasts at least three months and consists of job search and coaching activities. In phase two, participants may

be offered work-placement or short training measures. Participation cannot extend beyond 15 months or until the participant reaches the age of 25. Thereafter, the person is referred to the JDG.

ALMP programmes

Preparatory activities

These include individually designed activities such as job search, rehabilitation, coaching or preparation for participation in labour market training.

Work experience placement*

The above 25-year old unemployed and employed at risk of unemployment can be referred to work experience placement. The PES can refer the unemployed to placement at private, public or non-profit organisations for at most six months. During the placement the participants can be summoned to mandatory meetings with the PES.

Lyft – a temporary scheme in place in 2010 only – targets the unemployed and the employed at risk of unemployment. The scheme offers activation within public or non-profit organisations. For participants who are not enrolled in the JDG the duration is up to three months, whereas the limit is up to six months for participants enrolled in the JDG. During placement the participant is obliged to use 25% of her or his time on job search.

Prova-på-plats targets the unemployed with limited work experience. The scheme offers work experience placement in private and public organisations. The maximum duration is three months.

Praktisk kompetensutveckling targets the unemployed and the employed at risk of unemployment, with previous work experience. The maximum duration is three months.

Subsidised employment

Särskilt anställningsstöd targets the unemployed who have been unemployed for at least two years and provides the employer with a subsidy of up to 85% of the wage cost. The maximum duration of the subsidy is four years. However, exemptions can be made.

Instegsjobb targets immigrants who gained a residence permit within the past three years. The subsidy is up to 80% of the wage costs and the maximum duration is 24 months.

Nystartjobb targets the unemployed who have been unemployed, participating in other ALMPs (excluding subsidised employment) or receiving social assistance, sickness or disability benefits for more than a year. Workers aged 20 to 25, and as a temporary measure in 2010-12 also workers aged 55 to 65, qualify already after six months. While lower for youth, the subsidy amounts to twice the employer social security contributions. The maximum duration is one year for workers aged 20 to 25 (five years for workers who have received sickness or disability benefits), five years for workers aged 26 to 54 and 10 years for workers aged 55 to 65.

Lönebidrag, *offentligt skyddat arbete (OSA)*, *Utvecklingsanställning* and *Trygghetsanställning* target the unemployed with a reduced capacity to work. *Lönebidrag* is the dominant programme and has a duration of at most four years. It must be renewed every year. The size of the subsidy depends on the worker's wage and work ability.

* Work experience placement is classified as an employment incentive scheme in the *OECD Labour Market Programmes Database*.

Labour market training

The PES can refer the unemployed, and the employed at risk of becoming unemployed, to labour market training. Vocational training is tailored to the current labour market situation and provided by the PES through various education institutions. Normally, training is not supposed to last more than than six months.

Business start-ups

A subsidy is given to the unemployed deemed to be in a position to start a business. The subsidy corresponds to the benefits she or he is eligible for. The maximum duration is six months but extensions are possible.

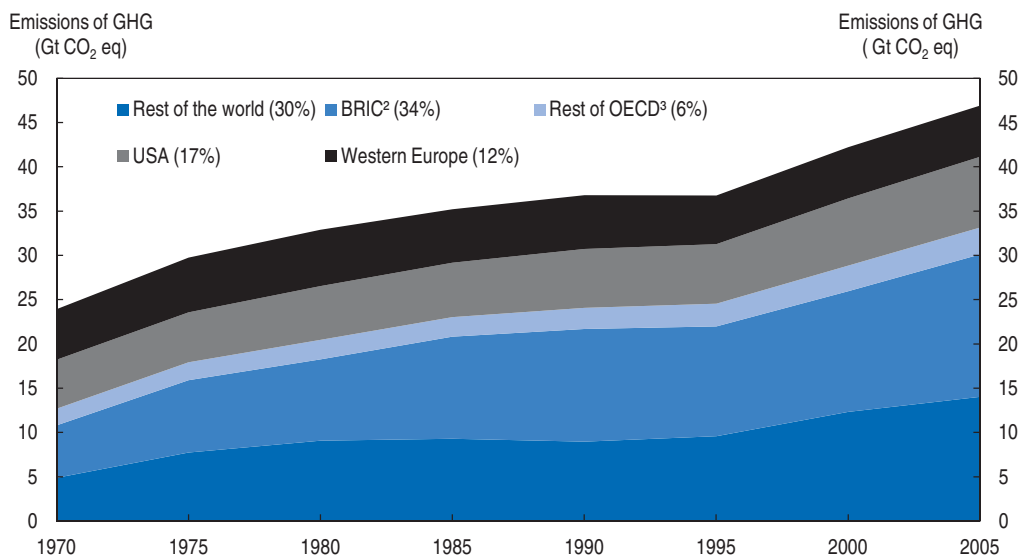
Chapter 4

Enhancing the cost-effectiveness of climate change mitigation policies in Sweden

Sweden has developed an extensive and sound policy framework to limit greenhouse gas emissions. It is now one of the OECD countries with the lowest greenhouse gas emissions per capita and it has successfully managed to decouple GDP growth from emissions growth. However, as Sweden has already significantly lowered its greenhouse gas emissions, the cost of reducing them further could be very high, making it urgent to improve the cost-effectiveness of Sweden's climate change policies. A strategy to enhance the cost-effectiveness of this policy framework would include: i) reducing differences in carbon prices between sectors and increasing even further the role of market-based instruments; ii) limiting overlap between targets and policies; iii) raising Sweden's participation in greenhouse gas emission reductions abroad; and iv) improving the assessments of the policy framework.


The pace of the world's greenhouse gas (GHG) emissions into the atmosphere has picked up sharply since the mid-1990s, driven mainly by economic growth in developing countries (Figure 4.1). While the recent recession can be expected to reduce global emissions, the impact on the build-up of GHG concentration will be only temporary. Without any further policy action, GHG concentrations would continue to rise and the resulting increase in temperatures could be well over 2 °C by 2050. Wide economic and environmental uncertainties surround the expected damages from the business-as-usual (BAU) scenario but there is a significant probability of very large losses which justifies reducing global emissions to levels which ensure a “low” probability of extreme and irreversible damage from climate change.

Figure 4.1. **World emission trends by country/region**



1. Including emissions from land use, land-use change and forestry. Number in brackets represents percentage share of total emissions in 2005.
2. Brazil, Russia, India and China.
3. Rest of OECD does not include Korea, Mexico and Turkey, which are aggregated in Rest of the world.

Source: OECD Environmental Outlook to 2030 (2008).

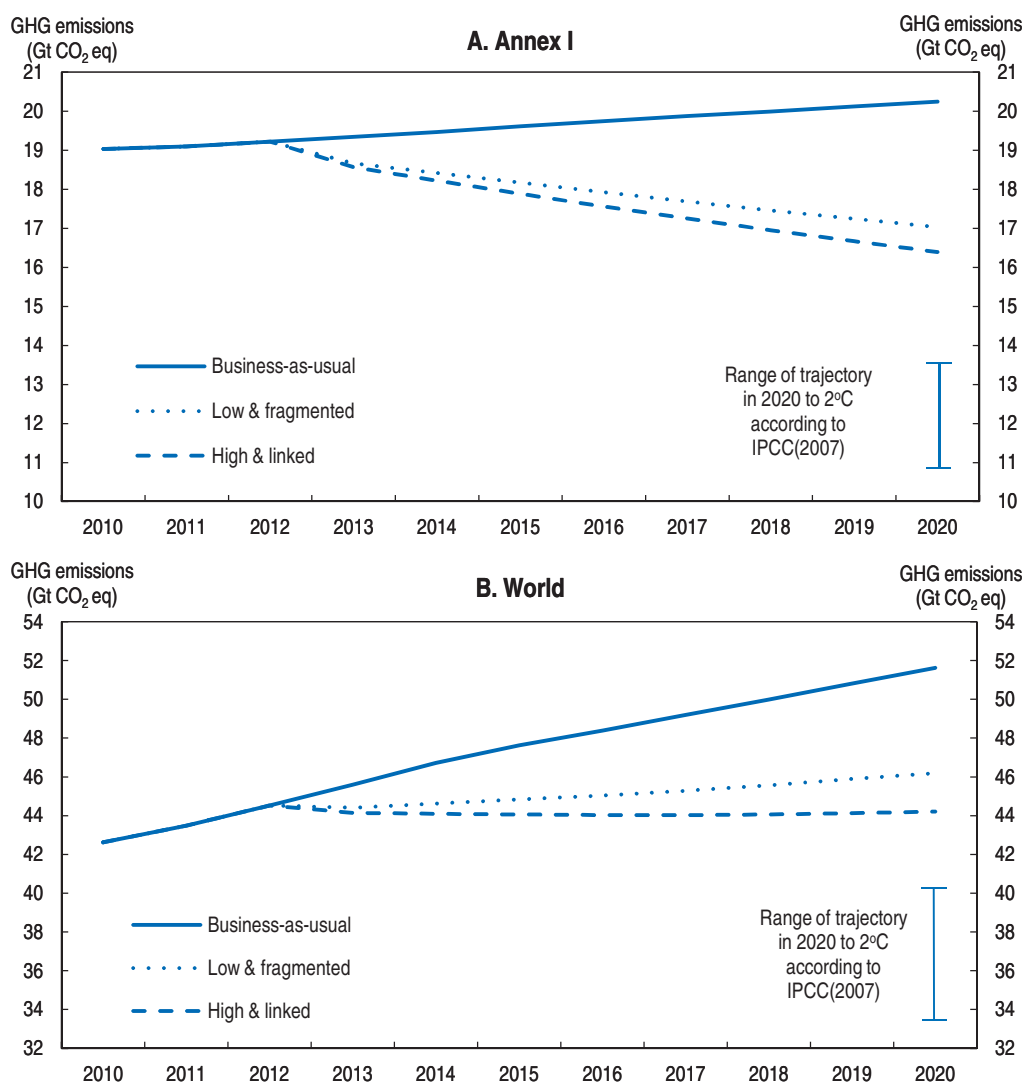
StatLink  <http://dx.doi.org/10.1787/888932368422>

At the Copenhagen Conference of parties (COP-15) in 2009 under the UN Framework Convention on Climate Change (UNFCCC), a number of developing and developed countries (more than 120 countries plus the European Union) have agreed that the increase in average global temperature needs to be kept below 2 °C. According to IPCC estimates, limiting the temperature increase to 2 °C would require stabilising GHG concentrations at 445-490 ppm CO₂eq and reducing CO₂ emissions relative to 2000 by 50-85% by 2050. As of May 2010, 42 Annex I countries¹ had pledged quantified economy-wide emissions targets

for 2020, and 36 non-Annex I countries had pledged mitigation actions (OECD, 2010a). However, OECD estimates show that the emission reductions embodied in these pledges are not sufficient to put emissions on a pathway limiting the average global temperature increase to 2 °C (Figure 4.2).

Sweden is strongly engaged in the efforts to tackle climate change. The country has already successfully reduced its GHG emissions and has adopted ambitious targets to lower them even further. Sweden has ratified the Kyoto protocol, is participating actively in EU climate policies and is willing to “take the lead” on these issues. Sweden’s efforts and performance are all the more commendable as the incentives for a small country with a

Figure 4.2. **The gap between pledged targets and the trajectory towards the long-term goal of limiting the global temperature increase to 2 °C**



Note: The “Low and Fragmented” scenario corresponds to all countries meeting the lower end of their pledged ranges, while the “High and Linked” scenario corresponds to all countries meeting the higher end. The High and Linked scenario assumes trading of emission permits between Annex I countries while the “Low and Fragmented” scenario does not include trading. In both cases, the assumption is made that 20% of the required emission reductions in Annex I countries can be fulfilled through the use of international offsets.

Source: OECD (2010a).

StatLink  <http://dx.doi.org/10.1787/888932368441>

cold climate to take action are weak (Box 4.1). However, “taking the lead” on a global problem can be costly for an individual country like Sweden. The challenge is therefore to find a balance between the level of ambition of its climate and energy targets and the need to achieve these targets at a moderate cost. Improving the cost effectiveness of the overall framework would help reconcile these two objectives.

Box 4.1. The political economy of climate change: some lessons from Sweden

Climate change mitigation is a complex political economy problem (OECD, 2009a):

- Climate change is expected to have significant implications for the world economy and for many areas of human activity. When all of these impacts and more broadly the risks of inaction are factored in, ambitious global emission reduction is economically rational at the global level, meaning that global benefits would exceed global costs, provided that cost-effective solutions are in place.
- Given the current emissions growth of a number of developing countries, limiting the increase in temperature to 2 °C would require a world coalition. Smaller coalitions could not achieve the target.
- However, most individual countries are found to gain less individually from participating than from staying outside and benefiting from the abatement efforts of other countries. Broad participation can, however, be achieved through international financial transfers.

For a country like Sweden, the incentives to “free-ride” are very large because: i) as a small country, its emissions have little impact on world emissions; ii) Sweden could benefit from at least a moderate increase in temperatures; and iii) the cost of acting alone could be high as Sweden is a small open economy with relatively high marginal abatement costs. Despite these incentives, Sweden has introduced important policies to reduce emissions. It is difficult to understand why Sweden has succeeded where several other countries have failed. Factors that may have contributed, besides the attachment Swedish citizens have to nature, include:

- Industries that could have been affected by competitiveness problems have largely benefited from exemptions from CO₂ taxes.
- The extent of the change generated by the introduction of policies and how it is perceived by the population also matter. In theory, emission trading systems (ETS) are easier to introduce as they create a well-identified domestic constituency (the permit holders) with a financial incentive to maintain the system. In practice, however, at a national level, it may be easier to create a carbon tax as it can be presented, as in the Swedish case, as a reshape of the existing taxation of energy and it is simpler than an ETS. In contrast, in France, the carbon tax was presented as an additional tax, which may have contributed to its failure. At an international level, ETS offer more possibilities to give incentives to countries to participate, for instance by more generous allocations of permits, and may therefore be easier to introduce.
- Sweden may assign a high weight to future generations. Economists have raised the question of the “appropriate” level of the carbon price. One approach is to follow a cost-benefit assessment in which the value of one tonne of CO₂ is equalised to the net present value of the climate change impact of one additional tonne of CO₂ emitted in the atmosphere, called the social cost of carbon. There is considerable uncertainty surrounding the estimates of the social cost of carbon because many impacts are hard to quantify. Furthermore, there are large differences between estimates because they depend largely on two controversial parameters, the social discount rate¹ that is used to aggregate climate change impacts over time and the equity weights that are used to aggregate impacts across regions. However, for a social discount rate of 4% to 5%, close to what most western governments use for long-term investments, Tol (2005) concludes from a meta survey analysis that it is unlikely that the social cost of carbon exceeds EUR 4 per tonne of CO₂. With a pure rate of time preference close to 0, which assigns the same weight to current and future generations (as chosen in the *Stern Review*), the social cost of carbon would be around EUR 70 per tonne of CO₂, much closer to the Swedish value (the general level of the CO₂ tax is above EUR 100 per tonne of CO₂).²

1. The social discount rate measures the importance of the welfare of future generations relative to the present for society as a whole.

2. In 2010, the general level of the CO₂ tax was SEK 1 050 or EUR 111 per tonne of CO₂.

Sweden, a clean country with ambitious GHG emission reduction targets

Sweden has adopted national targets that are more ambitious than the ones set at the international level. This is commendable. For 1990-2012, while Sweden's commitment under the Kyoto Protocol was to limit the increase in GHG emissions to 4%, the country has decided to reduce its emissions by 4% (Box 4.2). Beyond 2012, as for other EU countries,

Box 4.2. Main national and international climate change mitigation targets applying to Sweden

Targets for 2012

Under the Kyoto protocol, Sweden should limit its GHG emissions to no more than 4% above 1990 levels for the average level of GHG emissions over the period 2008-12.

However, Sweden has also adopted a more stringent target for the same period, which is to reduce the average level of emissions over 2008-12 by 4% from the 1990 level. The target is to be achieved without resorting to carbon sinks or flexible mechanisms such as the Clean Development Mechanism (CDM), even though the latter is allowed under the Kyoto protocol.

Targets for 2020

EU targets

As an EU member, Sweden has to contribute to the achievement of EU targets for 2020, which are:

- A 20% reduction in GHG emissions relative to 1990 levels. This reduction can be scaled up to as much as 30% should there be a new global climate change agreement with other developed countries making comparable efforts.
- That 20% of EU energy consumption be from renewables.
- A 10% share for renewable energy in the transport sector.
- A 20% reduction in primary energy use compared with projected levels, to be achieved by improving energy efficiency.

These targets have to be fulfilled at the EU level. Richer countries are expected to contribute more than poorer ones. For Sweden, the specific targets are:

- A decrease in emissions of sectors outside the EU ETS by 17% between 2005 and 2020. This is the consequence for Sweden of the *Effort Sharing Decision* under which member states have agreed to a binding national emissions limitation target for 2020 for uncovered sectors reflecting each member state's relative wealth. The targets range from an emissions reduction of 20% by the richest member states to an increase in emissions of 20% by the poorest. These national targets will cut the EU's overall emissions from the non-ETS sectors by 10% by 2020 compared with 2005 levels.
- An increase in the share of energy from renewable energy sources from 40% in 2005 to 49% in 2020.

National targets

In addition to these EU targets, Sweden has also adopted three targets (Government bills 2008/09:162 and 163):

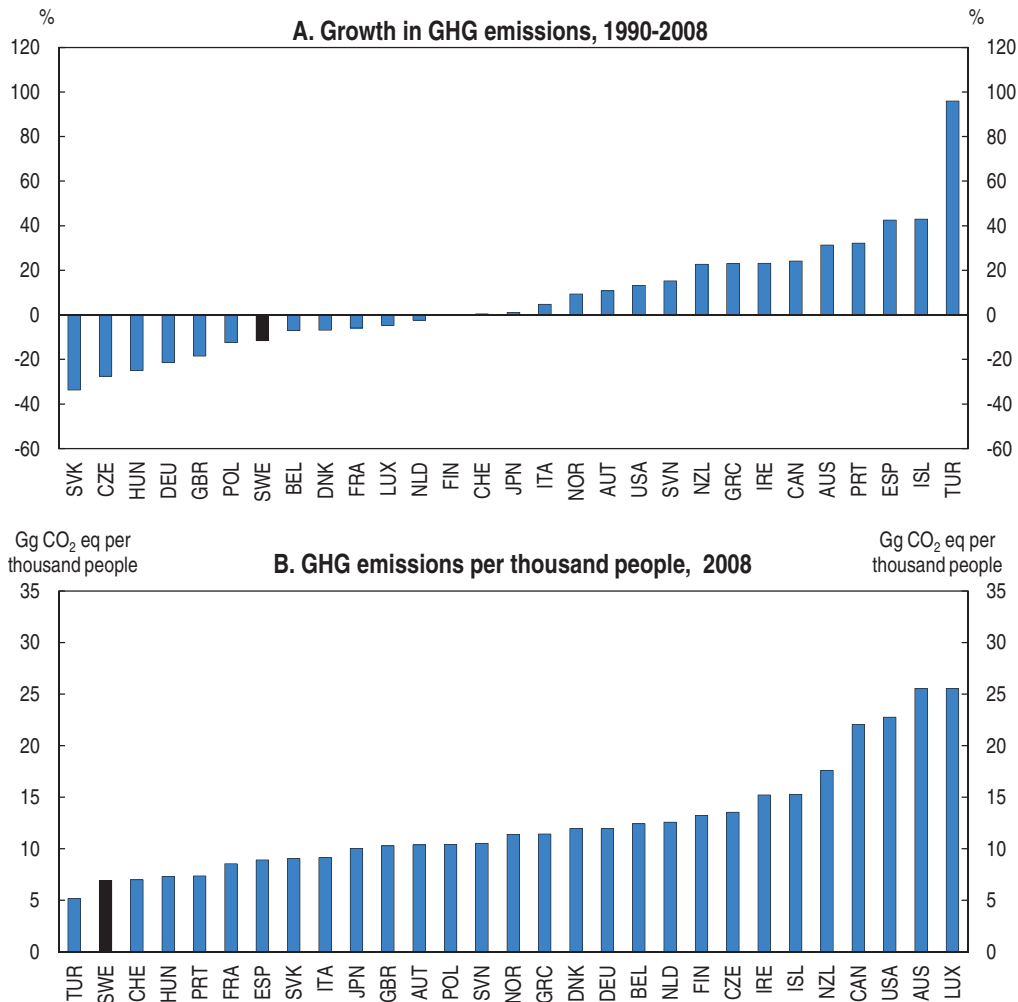
- 40% reduction relative to 1992 in GHG emissions for sectors not covered by the EU ETS (transport, housing, waste facilities, agriculture, forestry, aquaculture and some parts of industry). One third of the target is to be achieved through investments in other EU countries or in flexible mechanisms such as the CDM. The remaining two-thirds will have to be achieved in Sweden, corresponding to a decrease by around 30% in Sweden over 1990-2020.
- At least 50% renewable energy, which is slightly above the EU target.
- 20% reduction in energy intensity by 2020 relative to 2008.

The government has also stated its ambition to have a vehicle stock that is independent of fossil fuel energy by 2030.


Sweden's GHG emissions are constrained by the *EU Climate and Energy Package* and the 20-20-20 targets to be met by 2020. At the EU level, participants have agreed to reduce EU GHG emissions by at least 20% relative to 1990 levels, to have 20% of EU energy consumption come from renewable energy and to improve energy efficiency by 20%. These targets are to be achieved through emission reductions in sectors both covered and not covered by the EU emission trading system (EU ETS). Sweden has agreed to take a significant share of the effort to reduce GHG emissions in sectors not covered by the EU ETS by adopting a more than 20% emission reduction target in these sectors, which is the most stringent target adopted among EU member countries. The country will also contribute significantly to the EU renewables target by raising the share of renewable energy in Sweden to at least 50%.

Sweden is expected to fully meet both its Kyoto protocol and its national targets for 2008-12. By 2008 GHG emissions were almost 12% below their 1990 level, one of the largest GHG emission reductions achieved by OECD countries (Figure 4.3, Panel A).

Figure 4.3. **GHG emissions in Annex I countries, trend and level**



Source: UNFCCC.

StatLink  <http://dx.doi.org/10.1787/888932368460>

Sweden's performance, as with some other European countries, also shows that it is possible to “decouple” GHG emissions growth from GDP growth since GDP has more than doubled over the same period (Figure 4.4). Sweden is now one of the countries with the lowest emissions per capita (Figure 4.3, Panel B).

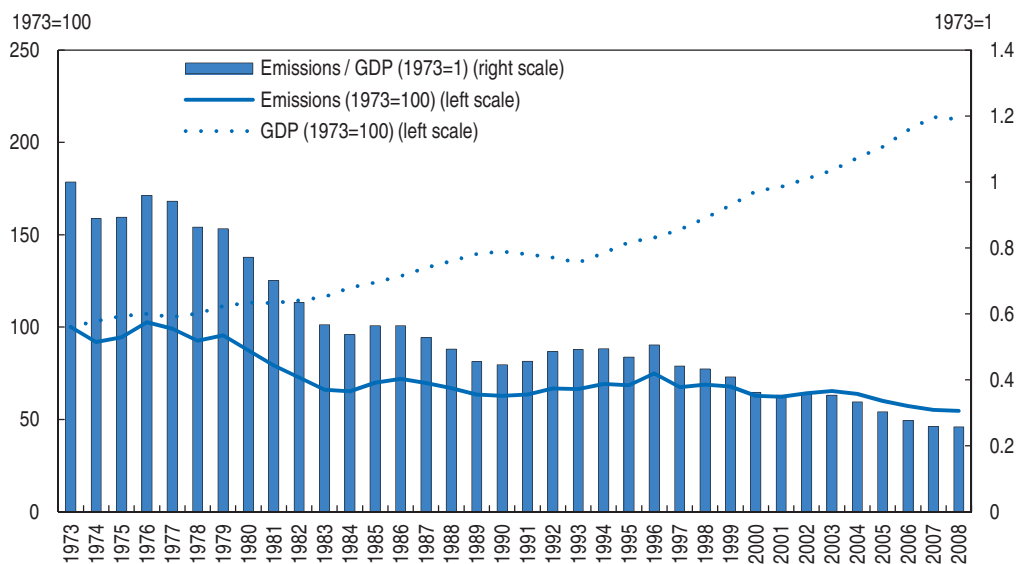
Emissions have been mainly reduced in services and the residential sector, where the use of oil for heating has been largely replaced by district heating based on biomass fuels (Figure 4.5, Panel A). To a lesser extent, emissions also decreased in the energy supply and the waste sectors. In contrast, they have continued to increase in the transport sector, which is now the main source of GHG emissions (Figure 4.5, Panel B).

Sweden managed to reduce its GHG emissions per capita by mainly lowering GHG emissions per unit of energy, i.e. by “cleaning” its energy (Table 4.1). Over the past four decades, this mainly reflected the development of nuclear energy (Figure 4.6). Over a shorter period of time, the development of energy from renewable sources, mainly electricity from hydroelectric power generation and imports of biofuels, has also contributed. The share of renewable energy has increased from 1991 to 2007 by 10 percentage points and is among the highest in OECD countries (Figure 4.7). Electricity is now almost CO₂-free with hydro-electricity and nuclear power accounting for more than 90% of electricity generation.

While the energy intensity of GDP (the ratio of energy consumption over GDP) has also declined, it remains above the OECD average. This is because Sweden's industry is very energy-intensive and energy consumption by households is high due to the cold climate.

The land use, land-use change and forestry (LULUCF) sector has sequestered more carbon over 1990-2007 than it has released. Lands and forests are part of a natural cycle regulating the amount a carbon in the earth's atmosphere. Carbon sequestration rates depend on how land is used, on biomass and soil types, and on regional climate and topography. For instance, the conversion of forests to agricultural land increases the stock

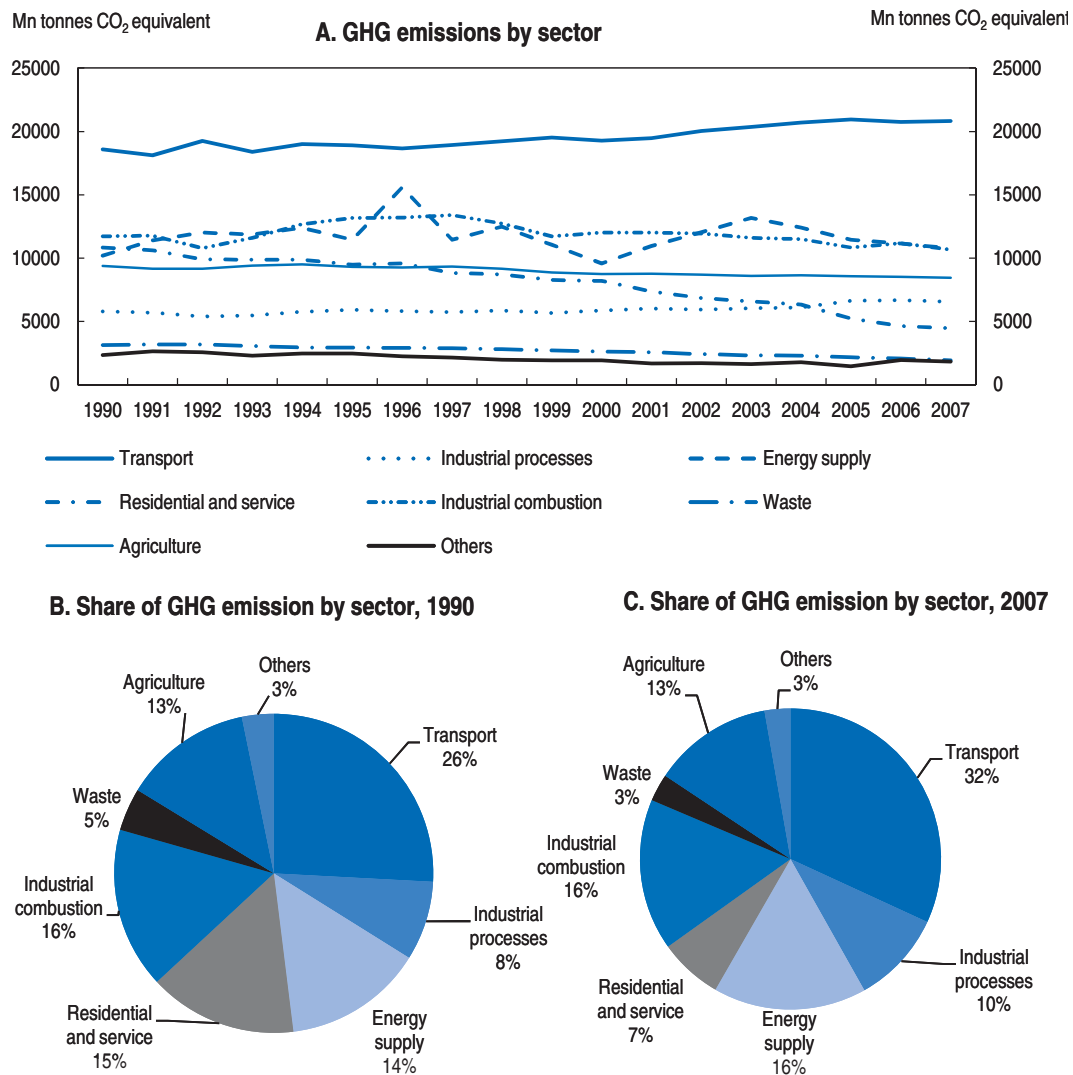
Figure 4.4. **GHG emissions and GDP in Sweden**




Source: IEA (2009b) and OECD (2010b).

StatLink  <http://dx.doi.org/10.1787/888932368479>

Figure 4.5. GHG emissions by sectors, 1990-2008



Source: Ministry of the Environment (2009).

StatLink  <http://dx.doi.org/10.1787/888932368498>

of GHGs in the atmosphere because most forests usually absorb more CO₂ than agricultural land while afforestation and reforestation sequester CO₂ over decades. However, the carbon sink has been shrinking faster since 2002 because of increased felling and a severe storm in 2005.

The policy framework to mitigate climate change

The laudable results reviewed above stem from a long tradition of climate change mitigation policies (Annex 4.A1). Sweden has made extensive use of market-based instruments (carbon tax and participation in the EU ETS) but has also developed several other instruments such as performance and technology standards, various forms of support to R&D in “green” technologies and subsidies to some investments. Assessing the cost-effectiveness of this policy framework raises the issue of the benchmark against which they should be judged. As climate is a global public good, cost-effective policies to

Table 4.1. **Decomposition of GHG emissions in selected countries**¹

	2005			
	GHG emissions/population ²	GDP/population ³	Energy/GDP ⁴	GHG emissions/energy ⁵
Sweden	7.9	32.3	0.179	1.369
Canada	22.9	35.1	0.24	2.70
Denmark	12.6	33.3	0.11	3.46
France	9.0	30.6	0.15	1.99
Germany	11.9	31.4	0.13	2.83
Italy	9.7	28.4	0.11	3.03
Japan	11.1	30.3	0.14	2.68
UK	10.5	32.2	0.12	2.69
USA	23.7	41.9	0.19	2.99
OECD average	14.1	29.7	0.16	2.95

	% change between 1990 and 2005			
	GHG emissions/population ²	GDP/population ³	Energy/GDP ⁴	GHG emissions/energy ⁵
Sweden	-9.5	31.2	-20.7	-13.0
Canada	9.9	29.8	-13.6	-2.0
Denmark	-11.0	30.6	-20.1	-14.7
France	17.5	22.4	-8.1	4.4
Germany	-23.7	22.0	-23.4	-18.4
Italy	8.9	19.3	2.6	-11.0
Japan	8.6	16.9	-1.5	-5.7
UK	-14.3	36.5	-23.1	-18.4
USA	-1.3	31.1	-21.7	-3.8
OECD average	2.1	29.6	-15.2	-7.2

1. GHG emissions/population = (GDP/population) × (energy/GDP) × (GHG emissions/energy).

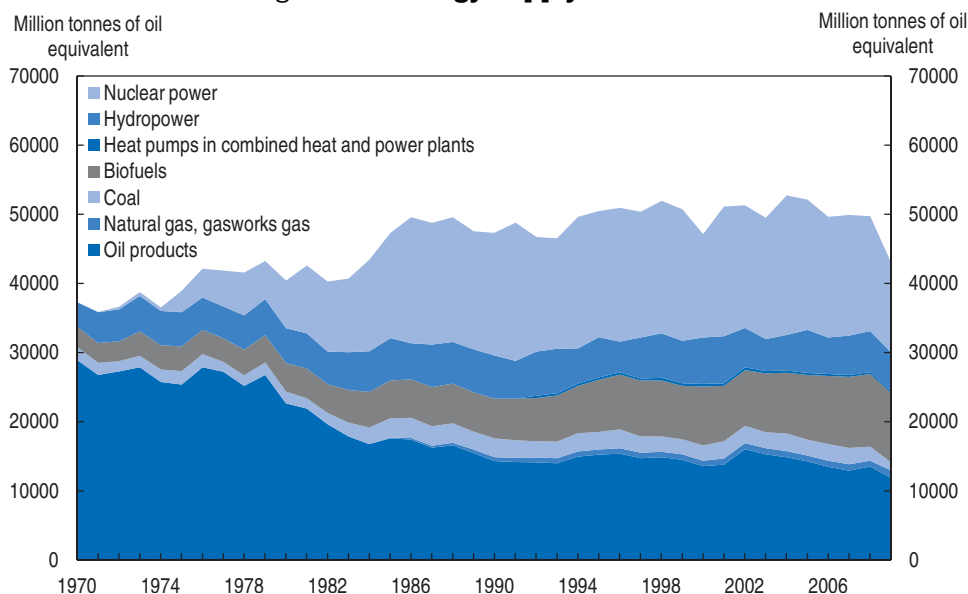
2. In tonnes of CO₂eq per head.

3. In thousand USD using PPP exchange rates for the year 2000.

4. For total final energy consumption in ktoe/billion PPP USD for the year 2000.

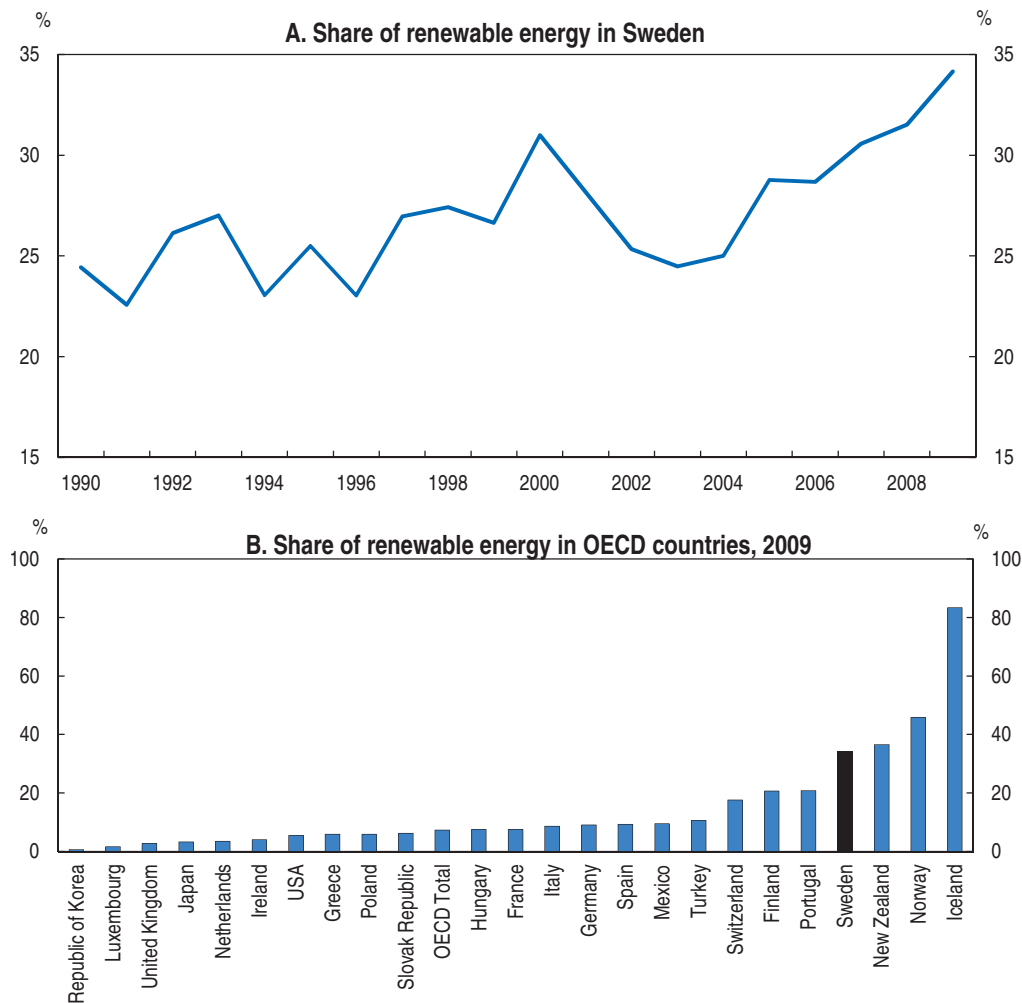
5. For total final energy consumption in Mt CO₂eq/ktoe. In Ktoe/billion PPP USD for the year 2000.

Source: IEA and OECD calculations.


Figure 4.6. **Energy supply 1970-2007**

Source: IEA (2010a).

StatLink  <http://dx.doi.org/10.1787/888932368517>

Figure 4.7. **Share of renewable energy in total energy supply in Sweden and OECD**

Source: IEA (2010b).

StatLink  <http://dx.doi.org/10.1787/888932368536>

combat climate change need to be broad-based in terms of countries, sectors and gases. Compared to that benchmark, actions by a single country or group of countries are likely to fail the cost-effectiveness criterion. Furthermore, as competitiveness losses are expected to be larger when a small open economy is acting alone, the risk of having some exemptions in policies, which lowers further the cost-effectiveness of the overall policy framework, is larger. For these reasons, Sweden's policies should be assessed relative not to what they should be under a cost-effective international agreement to mitigate GHG emissions but to a second-best solution in which the cost is minimised given the large set of constraints that come from the lack of an international mitigation agreement.

Most sectors are covered by market-based instruments

The rationale for market-based instruments is simple. GHG emissions are a by-product of economic activities, and carry a social cost as they adversely impact the world economy and human well-being. The main market mechanism for internalising the social cost of carbon is to put a price on carbon, either through carbon taxes or an ETS. In theory, the difference between the two instruments is that under a carbon tax system, the

price of carbon is fixed and the size of emission reductions is uncertain, whereas under an ETS, the size of emission reductions is known while the carbon price fluctuates. In practice, however, as carbon tax rates are usually changed over time and financial markets allow firms to hedge against short-term fluctuations of the carbon price under an ETS system, the two instruments are very similar. The major difference may be their capacity to allow burden sharing (OECD, 2009a). A number of market failures justify complementing market-based instruments with other instruments (Box 4.3). However, a basic principle is that overlaps of instruments are generally costly and therefore, non market-based instruments should be used only when there is a market failure that cannot be fully addressed by a carbon price.

Sweden was one of the first countries to introduce a carbon tax in 1991. At that time, the tax was supposed to cover all sectors, although a large number of them benefit from significantly lower tax rates (see below). With the introduction of the EU ETS in 2005, sectors that were covered by the carbon tax also had to face the EU ETS carbon price. The EU ETS covers installations in the production of electricity and in the heating sector, refineries, installations that produce and process iron, steel, glass and glass fibre, cement and ceramics and installations that produce paper and pulp. Most emissions from the transport sector and from households are excluded. To avoid double regulation, the government decided to exempt the industries covered by the EU ETS from the carbon tax. Hence, all sectors are covered by a carbon price, but it varies greatly across firms and sectors with some activities being fully exempted (Table 4.2).

Box 4.3. Designing a cost-effective set of climate mitigation policy instruments

A cost-effective set of instruments to achieve any given climate mitigation objective should meet three broad criteria (Duval, 2008):

- Equalise marginal abatement costs across all emission sources in order to fully exploit existing opportunities for low-cost GHG emission reductions. This requires the instrument to be cost-effective *per se* but also to be applied as widely as possible across countries, sectors and GHGs.
- Foster an efficient level of innovation and diffusion of GHG emission-reducing technologies in order to lower future marginal abatement costs.
- Cope effectively with risks and uncertainties surrounding both climate change and abatement costs.

While a carbon price, coming either from a tax or an ETS, meets these three criteria, there are a number of market imperfections that justify complementing a carbon price with other instruments:

- The most obvious market imperfection comes from the global public good nature of the climate, which leads to free rider problems and makes it inherently difficult to achieve broad participation. This justifies having some forms of support to countries/sectors with weak incentives to participate.
- Monitoring and enforcement costs can be large for certain emission sources such as deforestation or methane emissions resulting from pipeline leakage, justifying the adoption of some regulatory standards.
- Information problems: imperfectly informed households and firms may act inefficiently even if faced with adequate incentives. For example, the energy efficiency of buildings may be hampered by divergent incentives and asymmetric information between landlords and tenants. Some standards and information instruments such as labeling could help in this regard.
- Capital market imperfections may affect the ability of households and small firms to invest in profitable energy-saving equipment with high fixed costs. Some forms of subsidies can mitigate this problem.

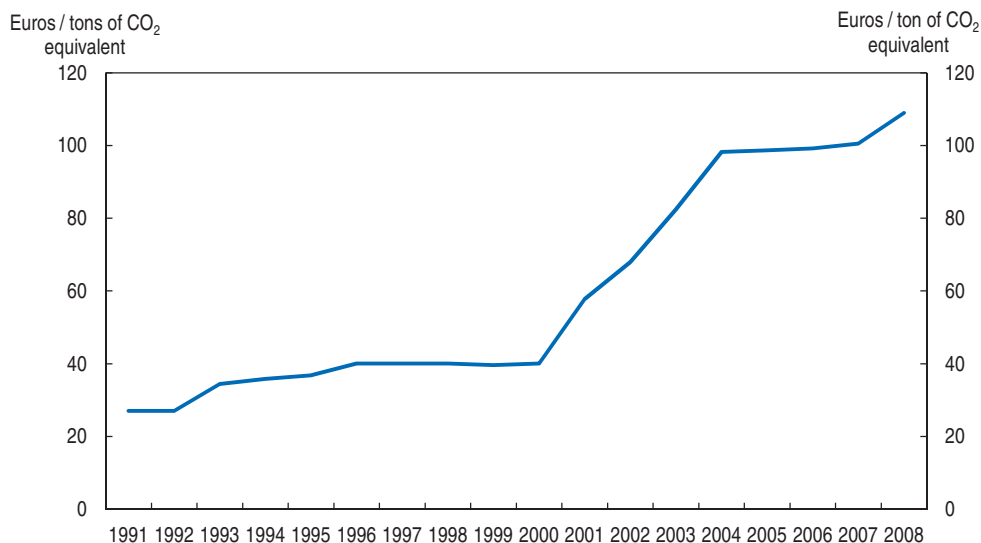
Table 4.2. **Main instruments affecting GHG emissions in Sweden**

	Price instruments	Other instruments
Energy supply	<ul style="list-style-type: none"> • EU ETS, covering 33% of emissions in 2007. • Energy and CO₂ taxes covering the remaining part of emissions, with exemptions (in general, 21% of the general rate). 	<ul style="list-style-type: none"> • Electricity certificate system. • Special initiatives for wind and solar power.
Industry	<ul style="list-style-type: none"> • EU ETS covering almost all emissions. • Energy and CO₂ taxes for industries not covered by the EU ETS. Exemptions: in general, 21% of the general rate. 	<ul style="list-style-type: none"> • F-gas regulation. • Programme for energy efficiency in industry.
Transport	<ul style="list-style-type: none"> • Energy and CO₂ taxes. 	<ul style="list-style-type: none"> • CO₂ requirements for new vehicles. • Tax exemption for biofuels/ quota obligations. • CO₂ differentiated vehicle tax. • Definition of green car. • Car benefit taxation. • Infrastructure planning.
Residential and services	<ul style="list-style-type: none"> • Energy and CO₂ taxes (full rate). 	<ul style="list-style-type: none"> • Energy declaration. • Building regulation. • Energy advice. • Technology procurement. • Energy labelling.
Agriculture	<ul style="list-style-type: none"> • Energy and CO₂ taxes(21% of the general rate). 	<ul style="list-style-type: none"> • Support for biogas. • Rural development programme.
Total economy	<ul style="list-style-type: none"> • EU ETS covering 32% of emissions in 2007. • Energy and CO₂ taxes covering 68% of emissions in 2007. 	<ul style="list-style-type: none"> • Climate investment programmes. • Research and development public policies.


Source: Ministry of the Environment (2009a) and OECD.

The carbon tax interacts with the energy tax and includes several exemptions

In Sweden, carbon is taxed both directly through the CO₂ tax, which puts a price on each unit of CO₂ that is emitted, and indirectly through the energy tax on fossil fuels. The statutory carbon tax rate has been increased from EUR 27 to EUR 110 per tonne of CO₂ between 1991 and 2010 (Figure 4.8). The energy tax, which predates the carbon tax, does not directly depend on the CO₂ content of fuels but implicitly puts a price on carbon, albeit

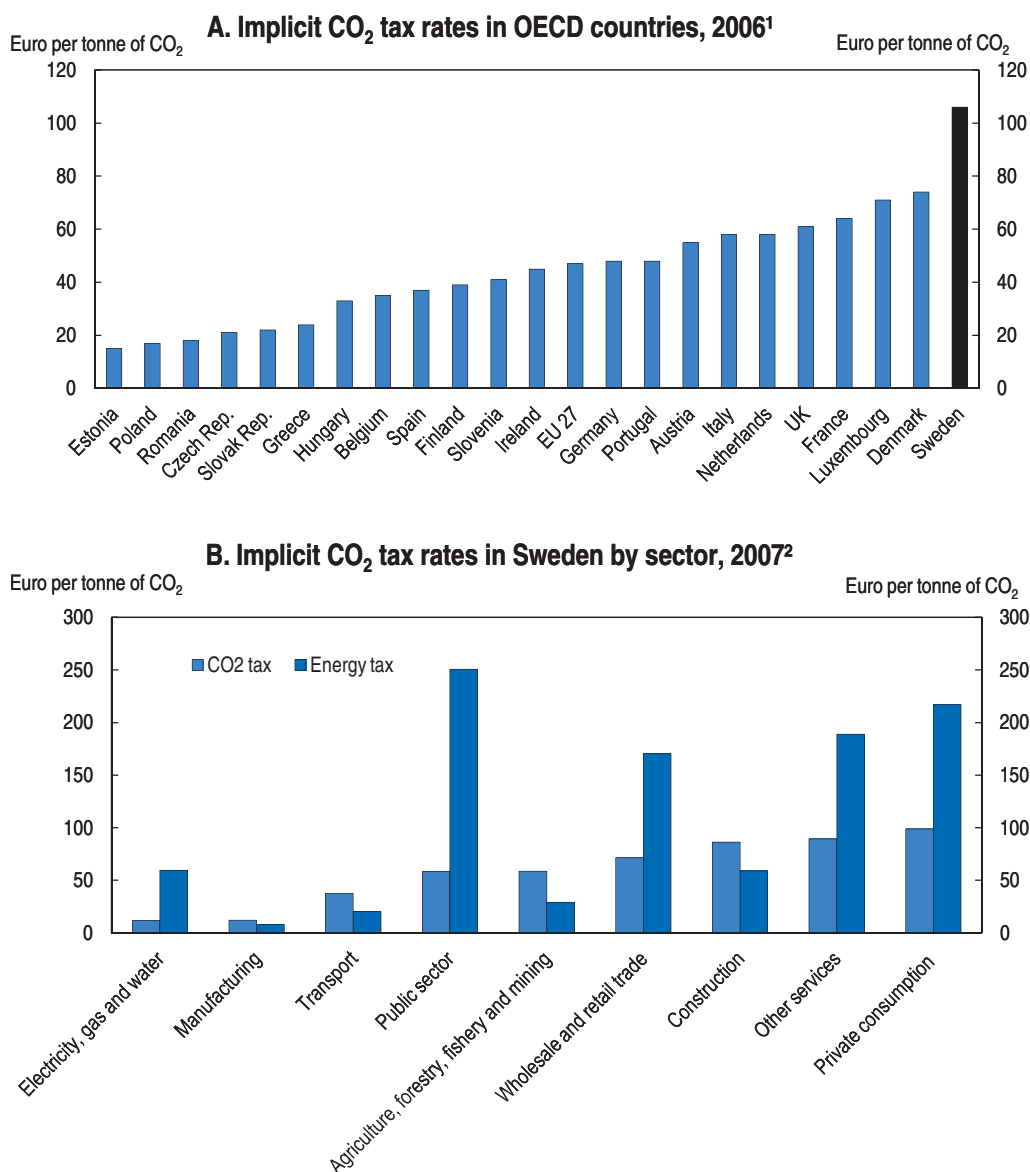
Figure 4.8. **Evolution of the general CO₂ tax rate in Sweden**

Source: Swedish Ministry of Finance.

StatLink  <http://dx.doi.org/10.1787/888932368555>


not uniformly so. The overall (both direct and indirect) tax rates on fossil fuels and electricity are among the highest in Europe with households and services being more heavily taxed than industry, a feature shared with other European countries (Figure 4.9, ADEME, 2009). The overall tax rate per tonne of CO₂ varies across fossil fuels and is smaller for coal than for others because the energy tax is not uniform, but to a lesser extent than in some other European countries that generally only have an energy tax (ADEME, 2009).

Figure 4.9. **Implicit tax rates on CO₂ in OECD countries and in Sweden**



1. Implicit CO₂ tax rates (computed by ADEME, 2009) presented in Panel A are computed by dividing the sum of the revenues from the taxes on fossil fuel and on electricity (generated from fossil fuel) by CO₂ emissions. In the case of Sweden, it includes revenues from the CO₂ tax and the energy tax.
2. Implicit tax rates on CO₂ are computed by dividing the revenues from the CO₂ tax (energy tax) by CO₂ emissions. Measures have been decided by the Swedish Parliament, entering into force in 2011, 2013 and 2015, that will reduce the heterogeneity in CO₂ and energy tax rates.

Source: ADEME (2009) and Statistics Sweden, National Environmental Accounts.

StatLink  <http://dx.doi.org/10.1787/888932368574>

Not only does CO₂ taxation vary among fossil fuels but it also varies across sectors, because there are several exemptions, both to the carbon tax and to the energy tax (Figure 4.9). For instance, in 2010 industry, agriculture, forestry and aquaculture pay 21% of the general level of the carbon tax although this will be increased to 30% in 2011 and 60% in 2015. Petroleum, mineral products, and metals industries, and water and air transport are fully exempted although some of these sectors are now covered by the EU ETS carbon price (see below). Revenues from the carbon tax come mainly from the household and transport sectors. This heterogeneity in tax rates lowers the cost-effectiveness of the instrument because emission abatements are made in sectors (and for fossil fuels) where tax rates are the highest and not necessarily where marginal abatement costs are the lowest.

The exemptions are justified by the government as a way to minimise the “leakage” problems that arise when one country (or group of countries) decides to act alone. The main source of carbon leakages for Sweden is related to the risk that Swedish carbon-intensive industries lose market share to their foreign competitors and/or reallocate capital to non-participating countries, so that part of the emission reductions in Sweden are offset by increases elsewhere.² Quantitative analysis suggests that, leakages are larger for a small coalition, but also that they are often exaggerated as the carbon tax rate is only one input to location decisions and other countries also tax energy-intensive industries (Barker *et al.*, 2007; OECD, 2009a). Another reason for these tax exemptions is to limit energy-intensive industries’ output losses. However, energy-intensive industry losses mainly reflect that opportunities to lower emissions at the lowest cost are in their sectors and would happen even in the absence of competitiveness problems. This is part of the reallocation process within and between sectors from carbon-intensive activities towards less intensive ones. For instance, according to OECD simulations, under a global scenario where world emissions are reduced by 50% by 2050 relative to 1990, and hence, where there is no leakage, the output of energy-intensive industries would be reduced by 12%.

An energy tax that indirectly taxes CO₂ emissions on top of the carbon tax makes the price signal on carbon less clear to firms and households. The energy tax was originally introduced mainly to raise revenues. However, it is now used by the government as an instrument to meet other targets as well (Ministry of Finance, 2009). As the energy tax rate is higher for oil than for natural gas, with oil having a higher carbon content and leading to more GHG emissions, the energy tax helps meet the GHG emission target. Taxing fossil energy also helps to fulfil the energy intensity target and, as there are several exemptions for biofuels, it is used to meet the renewables targets. Finally, the energy tax is supposed to address other externalities. Using one instrument to achieve several targets runs the risk of missing some of the targets. In theory, it would be best to have one instrument per objective, *i.e.* one tax to raise revenues, one uniform tax on CO₂ to contain GHG emissions and one or several taxes to address other pollutants. In practice, however, it is difficult to disentangle the second and third objectives as activities that generate GHG emissions also lead to other pollutant emissions, and *vice versa* (Bollen *et al.*, 2009). Proposals to change the structure of energy and CO₂ taxation were made by the government Commission on Green Taxation in 1997 (Swedish Government Inquiries, 1997).

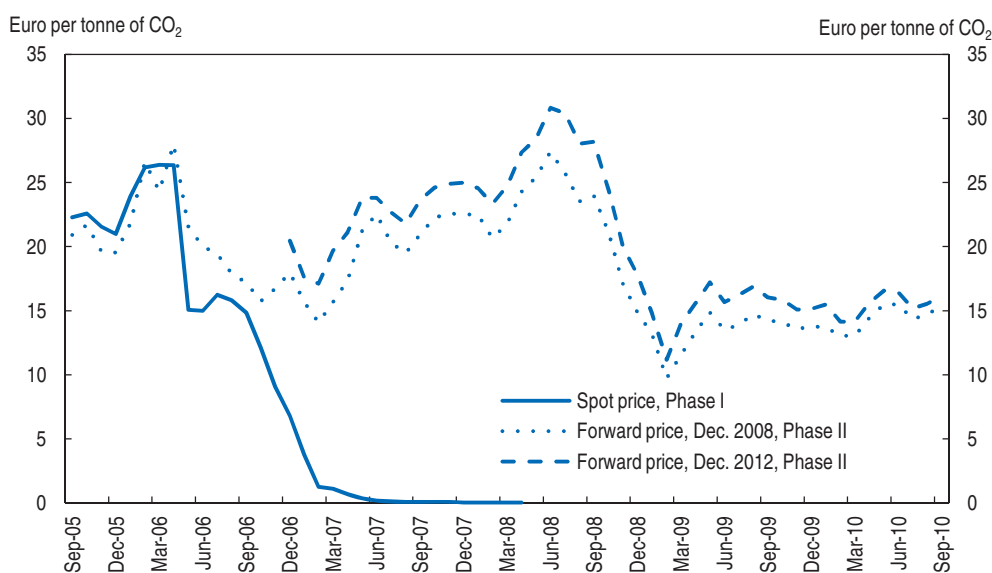
The carbon and the energy taxes have contributed to the decrease in GHG emissions, although it is difficult to know to what extent as there are few evaluations of their impact (Andersen, 2004). The use of several policy instruments that interact in the area of

climate change makes it difficult to assess the impact of each instrument and in particular of the carbon tax (Ministry of the Environment, 2009). However, the carbon tax is considered to have caused emission reductions mainly in the residential sector (district heating mostly) and has mitigated the trend increase in emissions in transport. Its impact on industry is probably small as this sector benefits from large exemptions (Johansson, 2000). The most recent estimate using a computational general equilibrium model dates back to 1997, and suggested that a doubling of the CO₂ tax would lead to reductions of Swedish CO₂ emissions by 0.1% to 1.7% (Swedish Government Inquiries, 1997). Extrapolating this result to the period 1991-2010, during which the general level of the tax has been multiplied by four, would imply that a reduction in GHG emissions by 0.2% to 3.5% could have been achieved through the CO₂ tax.³ A recent study using firm level data shows that CO₂ emissions of firms in the manufacturing sector have been very sensitive to the CO₂ tax, even though the tax has been low up to now in these sectors (Brännlund *et al.*, 2010).

The EU ETS should allow Sweden to finance emission reductions in other European countries

Sweden is participating in the EU ETS that was introduced as a tool to help EU countries meet their obligations under the Kyoto protocol. Despite some failures during the first phase of the system, which was mainly a trial period, the EU ETS has successfully led to the emergence of a carbon price and the volume of transactions has steadily increased since 2005 (Figure 4.10). A commitment period (Phase II) is running from 2008 until 2012 to coincide with the commitment period of the Kyoto protocol, and the system is scheduled to continue beyond that horizon, with an extension of its coverage.⁴ In Sweden, the EU ETS covers only one third of the CO₂ emissions, as against close to one half at the EU level, mainly because emissions in the electricity sector are very low in Sweden.

Figure 4.10. **EU ETS carbon price**



Source: Point Carbon and Caisse des Dépôts (2010), *Tendances Carbone* No. 52 November.

StatLink  <http://dx.doi.org/10.1787/888932368593>

Under the EU ETS, the cap in emissions is set at the EU level and firms trade allowances within and between countries. Where the emission reductions are done depends on the marginal abatement costs. Firms and countries with low marginal abatement costs take actions to lower their emissions and then sell their allowances (in the case where they are allocated free of charge⁵) while those with high marginal costs continue to emit and buy the allowances.

While marginal costs depend on country-specific characteristics, they also tend to increase with the level of emission reductions. As a result, the EU ETS should allow countries like Sweden, with relatively high marginal costs, to finance emission reductions in other EU countries where it is cheaper, thereby helping them to lower their average abatement cost (Hill and Kriström, 2002).⁶ With a binding allocation of permits, countries with relatively high marginal costs would buy permits while countries with relatively low marginal costs would sell permits. In practice, the allocation of allowances for Sweden over 2008-12 (22.3 million tonnes of CO₂eq) is expected to be 2% above the projected emissions for sectors covered by the EU ETS, implying that Sweden could be a net seller of allowances over the period. One reason for Sweden being a potential net seller although it faces relatively high marginal costs, could be that policies to develop renewables in the electricity sector (see below) have induced emission reductions in addition to those coming from the EU ETS carbon price in sectors covered by the EU ETS. The carbon tax also affects emissions in sectors covered by the EU ETS through general equilibrium effects such as by increasing the price of intermediate goods that are subject to the carbon tax. Over 2008-12, these additional emission reductions in Swedish sectors covered by the EU ETS will be partly offset by lower emission reductions in other EU countries. However, for future commitment periods under the EU ETS, the impact of other policies on GHG emissions in sectors covered by the EU ETS would warrant a more restrictive allocation to Sweden.

The electricity certificate system has boosted the development of renewable energy but at a high cost

In addition to its GHG emission objectives, Sweden has developed energy from renewable sources. The electricity certificate system is the main instrument used by Sweden to develop renewables in the electricity sector. Under this system, electricity producers (and some users) are required to purchase certificates equivalent to a certain proportion (quota) of their sales (or use). This creates a demand for certificates.⁷ Producers of electricity from renewable energy sources receive an electricity certificate for every megawatt-hour of electricity produced. This creates a supply for certificates. The price of the certificates depends on supply and demand and, in turn, on the size of the quota obligation, which is adjusted every year by the government to generate an increasing demand for certificates. It is expected that the price of the certificates is, in the end, passed on to consumers, thereby lowering demand for fossil-fuel based electricity. The quota has been binding since 2005.⁸ Electricity-intensive industries are exempted to avoid competitiveness problems. Similar systems exist in Belgium, Italy, Norway, Poland and the United Kingdom.

The pros and cons of electricity certificate systems have been discussed at length in the literature.⁹ Two issues stand out. The first is whether there is a need to support specific carbon-free technologies beyond the incentives generated by carbon pricing. One reason is that R&D spending on renewables technologies entails some fixed costs and firms bearing

the investment cost cannot be certain to appropriate all of the associated benefit because of spillover effects to other firms. These market failures justify combining a carbon price and public policies to support R&D for these technologies.

The second issue pertains to determining which additional supports are the most cost-effective to boost innovation in low-carbon technologies in the electricity sector. The main argument in favour of the certificate system is that it is market-based. Producers can choose among several technological options, which encourages innovation in technologies that have the lowest cost. In contrast, feed-in tariffs, which support renewables via a guaranteed price (that may vary by technology), do not necessarily encourage investment in technologies with the lowest costs.

Empirical analysis shows that electricity certificate systems have a positive and significant impact on innovation in renewables (Johnstone *et al.*, 2010). The impact is higher than for feed-in tariffs but much lower than for specific R&D policies. As expected, electricity certificate systems encourage innovations in technologies that are closest to the market (wind) as they have a quick market return while feed-in tariffs and specific R&D spending also boost innovation in technologies that are further from the market (solar). Sweden is one of the countries with the largest number of patents on renewables over 1978-2005, which could be a sign that the electricity certificate system has been successful in promoting R&D in this area (Figure 4.12).

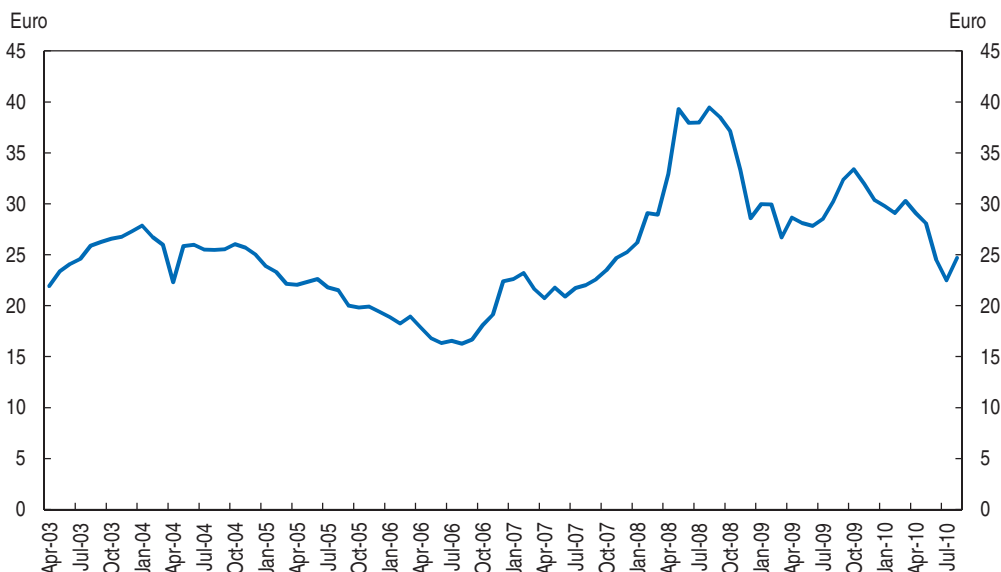
Electricity certificate systems subsidise renewable electricity producers because the certificate value that they do not have to pay is a form of subsidy to their production (Fischer and Newel, 2007). These systems have a number of shortcomings:

- Deadweight losses are large as a majority of the certificates (76%¹⁰) has been attributed to old and profitable plants that would have developed renewable electricity anyway. As it is very likely that these old plants have also benefited from other forms of governmental support (otherwise, they would not have existed), consumers have in fact paid two times the cost of the development of electricity from renewables. In order to address this problem, the government has decided that old plants (which represent 80% of the supply of certificates) should be phased out from the system in 2012.
- Although the government has published in advance the yearly quota for 2003-30, the price of certificates has been relatively volatile (Figure 4.11), which is likely to have been detrimental to investment. This is partly because of low liquidity as there are a few participants on the supply and demand sides who can affect the price. There are discussions about enlarging the system to include Norway, which may increase liquidity. The exclusion of old plants in 2012 creates another source of uncertainty for the future price of certificate with risks of large increases. Therefore, the introduction of a price ceiling is under discussion. The system also generates some transaction costs that are estimated to represent around 6% of the price of the certificate on average (Swedish Energy Agency, 2009).

Other instruments complement the framework, some of them with low cost-effectiveness

There are also various other policies that affect GHG emissions. In general, these instruments are difficult to assess and there is no clear justification to have them on top of other instruments (Brännlund and Kriström, 2001).

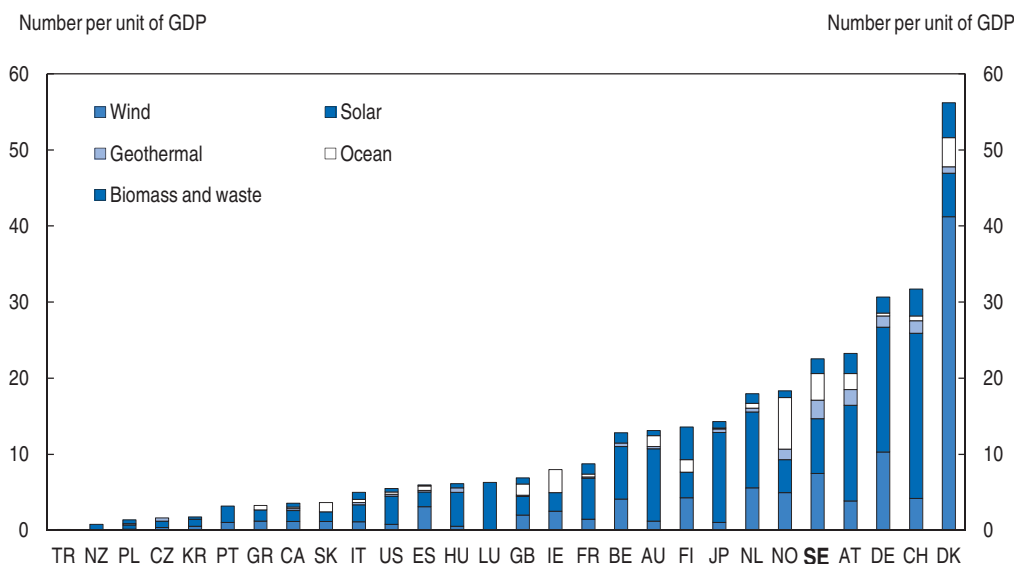
Figure 4.11. **Average price of spot traded electricity certificates in the electricity certificate system**



Source: SKM Tricorona.

StatLink <http://dx.doi.org/10.1787/888932368612>

Figure 4.12. **Patents in renewable energy technologies,¹ 1978-2005**



1. Data are from the European Patent Organisation (EPO). The annual mean number of patent applications for renewables during 1978-2005 normalised by GDP (in trillions of US dollars, using 2000 prices and at PPP).

Source: Johnstone et al. (2010).

StatLink <http://dx.doi.org/10.1787/888932368631>

Sweden aims at having a vehicle fleet that is independent of fossil fuels by 2030 and has adopted a number of technology and performance standards to achieve this goal. For instance, there is an obligation for all large filling stations to sell at least one renewable fuel and filling stations that wish to sell biogas have received subsidies. There are also several tax exemptions for “green” cars and the government has recently announced a subsidy for very low-emission cars. The main problem with these measures is their very

high cost. Model simulations suggest that a carbon price of EUR 150 per tonne of CO₂ would have been needed to bring emissions in this sector back to their 1990 level by 2010 (Broberg et al., 2008). As the mix of instruments used in this sector is unlikely to be a cost-effective one since it targets specific technologies, the marginal abatement cost could be even higher. In this regard, the government's choice not to introduce a kilometre tax is welcome from a climate policy perspective, as it would have been costly and would have had a limited impact on GHG emissions. In general, the government should try as far as possible to tax GHG emissions directly at the source. Taxing cars or kilometres rather than the fuel is an indirect and imperfect way of taxing GHG emissions as these depend on how the car is used.

Sweden has encouraged the use of biofuels largely through tax incentives (biofuel being exempted from the energy and carbon taxes); investment subsidies and other measures mentioned above. The cost of reducing CO₂ emissions through the development and use of biofuels depends on the type of biofuel, but can be very high, reaching EUR 350 per tonne of CO₂ (Steenblik, 2007). As Sweden is mainly importing biofuels (80% of ethanol supply is imported, mostly from Brazil) and biofuels production is heavily subsidised in most exporting countries, the country only partly bears these costs. However, full exemptions from the energy and carbon taxes, as well as several other forms of support, are required to make the use of biofuels competitive. Such measures to encourage biofuels raise a number of problems:

- They risk creating lock-in effects as biofuels may not prove to be the cheapest way to lower emissions in the transport sector. The government has recognised this problem and is therefore now supporting a broader range of low-carbon technologies in the transport sector, including electric cars.
- The environmental impact of biofuels production depends on the type of biofuel. But in any case, when the entire production chain and transport is considered, their impact on CO₂ emissions is not zero. As a large share of biofuels used in Sweden is imported from countries where the production and transport of biofuels leads to GHG emissions (such as Brazil), part of the emission reductions achieved in Sweden is arguably offset by increases elsewhere. For these reasons, biofuels should be taxed over and above VAT. The proposal by the government in the *Budget Bill for 2011* to increase tax exemptions, but only for low biofuels blend in petrol and diesel, goes in the right direction but more can be done in this area. An energy tax should also be applied to biofuels. Introducing a CO₂ tax on biofuels depending on their CO₂ content (rather than an energy tax that taxes CO₂ emissions indirectly) would give a clearer signal to consumers and would fully address the CO₂ externality. However, it raises a number of difficulties and hence, could only be considered in the longer term, provided that these difficulties are overcome. Indeed, it would require calculating CO₂ emissions embodied in the production and transportation processes, which is very difficult. Moreover, as fossil fuels are not taxed for the emissions generated by their production and transportation, this would lead to an asymmetry in taxation between fuels.

Another example of an additional instrument with weak cost-effectiveness is local subsidy programmes for investments in “green” projects, of which Sweden has a long tradition. While some of these programmes have been phased out, others have replaced them, with several again targeting investment in renewable energy. With other

instruments in place, there is no clear economic rationale for having these programmes on top. Furthermore, the additionality of these projects is estimated to be very low as, according to empirical estimates, 70% of them would have occurred anyway (Broberg et al., 2010). This is because municipalities receive subsidies on the basis of their application, with little check on the reference scenario. Finally the administrative costs of these projects are high, amounting to 10% of the size of the subsidy.

Overall, the policy framework has led to significant GHG emission reductions but more could have been achieved at the same cost

According to national estimates, the policy framework has allowed GHG emissions to be reduced by 32% relative to what emissions would have been without these policies, i.e. in the “business-as-usual” scenario (Table 4.3). Without these policies, emissions would have increased by more than 30% over 1990-2010 instead of having decreased by 10%. Emission reductions relative to the BAU scenario are expected to be the largest in the waste, solvents and energy sectors reflecting the drop in emissions from household energy consumption (Figure 4.13). They have mainly been achieved in sectors not covered by the EU ETS because energy-intensive industries, which are the main participants in the EU ETS, have benefited from tax exemptions before the introduction of the EU ETS. Since then, the EU ETS carbon price has not been durably high enough to induce substantial emission reductions.

Table 4.3. **GHG emission reduction projections over 1990-2020 in Sweden**

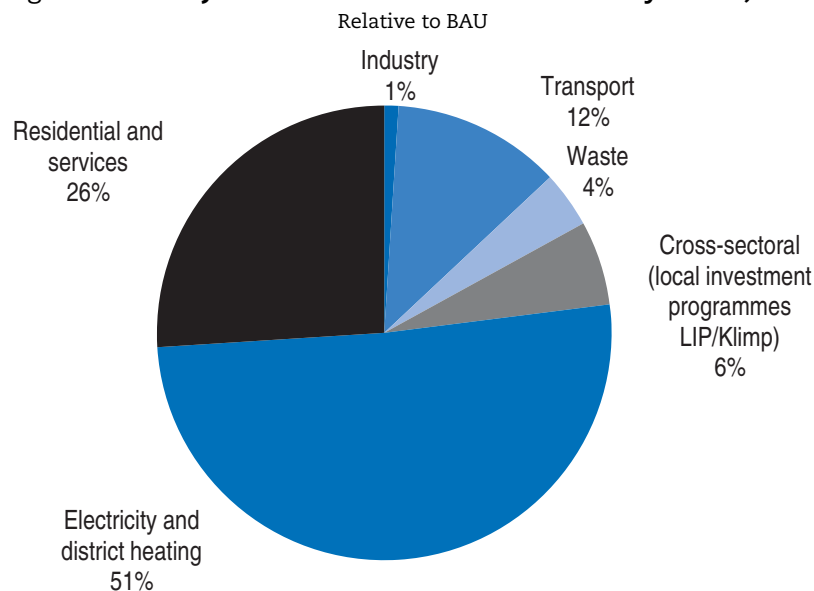
Total GHG emissions (excl. LULUCF ¹)	1990	2010	2020	1990-2010	2010-20	1990-2020
	Millions of tonnes CO ₂ eq			% change		
Business as usual	71.93	96.09	98.18	33.6	2.2	36.5
With current policies	71.93	64.99	63.18	-9.6	-2.8	-12.2
<i>Covered by the EU ETS</i>	21.2	21.8	22.2	2.8	1.8	4.7
<i>Outside the EU ETS</i>	50.8	43.2	40.9	-15.0	-5.3	-19.5
With 2009 measures and reductions financed outside Sweden	71.93	64	53.7	-11.0	-16.1	-25.3
<i>Covered by the EU ETS</i>	21.2	21.8	22.2	2.8	1.8	4.7
<i>Total outside the EU ETS including reductions outside Sweden</i>	50.8		31.5			-38.0
<i>Of which: outside the EU ETS in Sweden</i>	50.8	42.2	38.2	-16.9	-9.5	-24.8

1. Land use, land-use change and forestry.


Source: OECD calculations based on Ministry of the Environment Sweden (2009).

There is no assessment of the overall cost of these reductions. OECD model-based estimates show that a 10% decrease in GHG emissions relative to the 1990 level (corresponding to what has been achieved in Sweden) in the EU would cost 0.2% of GDP (OECD, 2009a). However, this cost should be considered as a lower bound as this estimate assumes that the emission reductions are fully achieved through a carbon tax, while Sweden has also used some more costly instruments.

There are some national estimates of the cost of various technical measures to reduce emissions in the electricity and heating supply sectors where most emission reductions took place (Ministry of the Environment, 2009). These estimates show that the techniques that have led to the largest reductions in Sweden have also been the most costly. For instance, a carbon price of around EUR 100 per tonne of CO₂ was needed to make the switch from oil to biomass fuels in individual houses (which

Figure 4.13. **Projected GHG emission reductions by sector, 2010**

Source: Ministry of the Environment (2009).

StatLink  <http://dx.doi.org/10.1787/888932368650>

accounts for a large share of emission reductions in Sweden) profitable. OECD estimates show that with a carbon price of EUR 100 per tonne of CO₂ in the EU, GHG emissions could be reduced by 30% relative to 1990 levels in the EU with a GDP cost slightly above 1%. These estimates represent an upper bound on the size of emission reductions and a lower bound for their cost, as they assume full coverage of the carbon price in terms of sectors and countries. Nonetheless, they suggest that greater emission reductions could have been achieved at a similar cost with a more cost-effective policy framework.

Moving forward: improving the cost-effectiveness of the policy framework

Sweden has adopted a target to reduce GHG emissions by 40%¹¹ over 1990-2020 in sectors not covered by the EU ETS (Table 4.2). Almost 40% of this reduction has already been achieved over 1990-2010, and another 35% is expected to be achieved through the financing of emission reductions abroad. The rest will have to be achieved domestically and corresponds to a reduction by 10% in sectors outside the EU ETS over 2010-20. It is estimated that the financial and economic crisis, by reducing GDP during the crisis, has lowered GHG emissions by 1 million tonnes in sectors not covered by the EU ETS, making the target easier to achieve (National Institute of Economic Research, 2010).¹² In July 2009, Parliament adopted a Climate Strategy with measures to achieve this target, notably hikes in the energy and CO₂ taxes for sectors that benefit from reduced rates (see Annex 4.A1).

While Swedish climate change activism has been commendable, it is important for Sweden to improve the cost-effectiveness of existing and future policies so as to be able to achieve its targets at least cost. As cheap abatement opportunities in Sweden have been partly exhausted, the marginal cost of reducing emissions further could be high. Recommendations are summarised in Box 4.4.

Making the carbon price more uniform, more visible and even more central

A key step to improve the cost effectiveness of the policy framework is to reduce the differences in carbon prices for sectors outside the EU ETS. Progress has been achieved in this direction but more remains to be done:

- Further removing exemptions from the carbon tax, in line with Parliament's 2009 decision, coming into force in 2011, 2013 and 2015. In particular, the measures to increase the CO₂ tax in industry and agriculture and to phase out reductions for energy-intensive industries that are outside the EU ETS are a useful step. NIER's estimates show that raising the minimum CO₂ tax rate to EUR 30 per tonne of CO₂ would reduce emissions with negligible effects on GDP (Broberg *et al.*, 2008).
- Clarifying the objectives of the CO₂ tax and the energy tax and adjusting the tax rates accordingly, so that the CO₂ tax becomes the major instrument covering the CO₂ externality while the energy tax, and possibly other taxes, deal with other environmental externalities.
- Assessing any proposals to change the CO₂ tax rates or energy tax rates against their impact on the heterogeneity of effective tax rates on CO₂. While some proposals like the one to increase the tax on motor fuel can lead to emission reductions, they can also lead to a deterioration in the cost-effectiveness of the overall framework by increasing the disparities in effective CO₂ tax rates (Broberg *et al.*, 2008).

Standards and other legal requirements entail a shadow price for carbon and thus also contribute to differences in carbon prices. Furthermore, as the cost of adopting these regulations is at least partly unknown *ex ante*, they make price signals less clear. The price signal could be made more visible by limiting the use of non-market based instruments to situations where there is a distinct market failure. For instance, the Climate Committee made a recommendation that was finally not retained in the Climate Strategy, to increase the railway capacity by 50%, which is a form of performance standard. The NIER's assessment showed that the cost of this proposal was the highest of all proposals, reaching EUR 500 per tonne of CO₂eq.

Raising the share of GHG emission reductions achieved in sectors covered by the EU ETS and outside Sweden

Another step to raise the cost-effectiveness of Sweden's policy framework would be to lower the difference in carbon prices between sectors that are outside and inside the EU ETS, in order to have a uniform carbon price at the national level. The EU ETS carbon price is currently lower than the effective CO₂ tax rates in most sectors outside the EU ETS and this gap is likely to widen further as a 20% emission reduction inside Sweden requires larger efforts than an EU-wide 20% reduction, since many other EU countries have cheaper abatement opportunities. Hence, for the carbon prices to converge, three options could be considered in theory: i) lowering CO₂ effective tax rates in Sweden's non-EU ETS sector; ii) raising the carbon price in EU ETS sectors; or iii) a mix of i) and ii). Measures presented above to make the carbon price more uniform (by broadening the tax base of the CO₂ tax) and more central in non-EU ETS sectors would allow the effective carbon price to be lowered in these sectors for a given emission reduction target, but they are unlikely to lead to a full convergence to the EU ETS carbon price level.

From an international perspective, cost-effectiveness requires that marginal abatement costs be equalised across countries. Assuming that the EU carbon price will increase and that a world carbon price will gradually emerge, Sweden should in fact freeze or even decrease its carbon price so as to let the EU ETS carbon price gradually converge towards it. However, this would lower the emission reductions achieved in Sweden. To maintain the level of ambition of its objectives, Sweden could offset these lower reductions by financing more emission reductions in non-Annex I countries through flexible mechanisms such as the Clean Development Mechanism (CDM). Emissions crediting mechanisms such as the CDM have the potential to provide larger and cheaper opportunities to reduce GHG emissions than the EU ETS. However, the current CDM suffers from a number of weaknesses, notably the often low additionality of projects (Wara and Viktor, 2008) and the large transaction costs that generate some bottleneck problems (OECD, 2009a). Sweden should continue to work at the international level towards improving the efficiency of flexible mechanisms so as to raise their environmental integrity and to lower their transaction costs. Sweden could also finance emission reductions outside Sweden by contributing to an international fund, provided that it meets a number of quality criteria.

Another option would be for Sweden to achieve more GHG emission reductions under the EU ETS. As explained above, as long as Sweden would continue to be a potential net seller of permits, the country will not benefit from the opportunity of lowering its mitigation cost by financing emission reductions in EU countries with lower marginal abatement costs (in Eastern Europe for instance). One option for Sweden would be, in future negotiations, to offer, for a given allocation of EU allowances between countries agreed at the EU level, to reduce its own allocation conditional on a downward adjustment of the EU level quota by the same amount.¹³ Another option would be for Sweden to buy permits with a strong commitment by Sweden's governments not to use them. These options would avoid that Sweden's larger contribution is offset by less ambitious efforts by other countries. As more ambitious targets would then be achieved at the EU level, the EU ETS carbon price would tend to rise,¹⁴ allowing more emission reductions to be achieved in EU ETS sectors in Sweden. However, the ability for Sweden to influence the EU ETS carbon price can only be limited given the low share of its GHG emissions in the aggregate EU ones.

The option to add a CO₂ tax to the EU ETS carbon price in EU ETS sectors in order to raise the carbon price in these sectors, which is in fact what the electricity certificate system is already doing, raises a number of problems. It would imply that more emission reductions would be achieved in EU ETS sectors in Sweden, lowering the demand for EU allowances from Sweden and thereby the EU ETS carbon price, leading to less emission reductions in other EU countries. So as to avoid that larger emission reductions in Sweden are offset by lower emission reductions outside Sweden, the overall EU cap would have to be adjusted downwards as explained above. However, the cost-effectiveness of the EU ETS would then be lowered as marginal abatement costs are relatively large in Sweden. It would be more cost-effective to achieve the same level of emission reductions at the EU level with less of these reductions achieved in Sweden. One argument against moving emission reductions outside Sweden is that Sweden would then lose the co-benefits of the reductions, for instance in terms of local air pollutants. However, as most of these pollutants are capped at the EU and international levels,¹⁵ their costs are already internalised and the co-benefits are expected to be low.

Finding a way to address GHG emissions from LULUCF that represent one third of Sweden's emissions excluding LULUCF could also help Sweden lower its mitigation cost. This would have to be achieved in the context of an international agreement.

Avoiding overlap between targets

Sweden has four targets to be met by 2020: an emission reduction target, an energy efficiency target, a renewables target for the energy sector as a whole and a renewables target for the transport sector. These targets have been adopted at the EU level but Sweden had decided to be a pioneer and to develop renewables in the electricity and transport sectors before the adoption of the targets at the EU level. Furthermore the country tends to adopt targets that are more binding than the ones set at the EU level and to also have additional priorities. For instance, Sweden has a plan to have a vehicle fleet that is "independent" from fossil fuels by 2030.

Having several targets that have impacts on GHG emissions generates additional constraints on the economy and hence raises the cost of meeting the GHG emissions reduction target. Furthermore, it is more costly to achieve four targets than only one, especially because the targets interact together. For instance, by stimulating the production of renewable energy, the renewable energy target makes the energy efficiency target more difficult to achieve.

The renewables target may have been particularly binding for the economy. Sweden aims at having half of its energy produced from renewables. However, as the largest part of the effort has already been realised, future costs are expected to be limited. The remaining part of the effort would require developing renewables further in both the electricity and transport sectors. The government plans to achieve 10% of the increase in renewables through the electricity certificate system. The remaining part of the effort would come from the increase in the CO₂ and energy taxes in the transport sector and some investment subsidies for biofuels.

Given that most renewables are not competitive with fossil fuels, the national cost of the policies that have been implemented to raise the share of renewable energy is expected to be very large. By forcing emission reductions to be realised in sectors and through specific technologies with potentially high marginal abatement costs, these policies have increased the cost of meeting the climate change target. Furthermore, as most sectors are covered by a carbon price, these policies have not lead to emission reductions in addition to those generated by the carbon prices (the EU ETS one and the energy and carbon taxes). This is particularly the case for the electricity certificate system, which has forced emission reductions to be achieved through the development of renewables in the electricity sector while they could have been achieved otherwise by other technologies with potentially lower costs.

At the EU level, the renewables target is justified as a way to decrease the EU's dependence on imported energy and the Swedish government uses the same justification. While the development of renewables may have improved Sweden's energy security, it is not obvious that there is a need for specific support to renewables in addition to that induced by the carbon price. This is particularly the case in the electricity sector, where Sweden is already a net exporter. Furthermore, the credible long-term carbon price that Sweden has successfully introduced provides a strong incentive to develop these

technologies (OECD, 2009a). Even if, for technological, political or safety reasons, the uptake of nuclear energy were to be constrained, OECD model-based simulations show that incentives to invest in renewables technologies would be even more strongly stimulated by a carbon price. Policies to increase the use of renewables in the transport sectors have led to an increase in imports of biofuels and therefore have lowered the dependency on oil exporter countries but there is still a risk that the price of biofuels rises significantly in the coming years.

The energy efficiency target also leads to additional costs for Sweden. CGE model simulations show that as the energy efficiency target is reached, CO₂ reduction overshoots the emission reduction target and that it is therefore more costly to meet both targets rather than to meet the GHG target only (Broberg *et al.* 2010).¹⁶

Furthermore, greater energy efficiency does not necessarily lead to less GHG emissions. This is because an increase in energy efficiency has at least two effects (Brannlund *et al.*, 2004): i) as the energy cost is lower because of the increased energy efficiency, more energy is consumed, which partly offsets the initial saving potential; ii) general equilibrium effects, such as changes in aggregate consumption patterns that lead to structural change and changes in relative prices with effects on emissions but with an unknown sign. Model simulations from this study show that an increase in energy efficiency (in the transport sector for instance) would increase the demand for cars and for other goods and hence, would increase emissions. To keep CO₂ emissions constant, the carbon tax would need to be raised significantly.

The latest OECD *Economic Survey of the European Union* suggested modifying the EU targets so as to make them less costly to individual countries and for the EU as a whole (OECD, 2009b). Specifically, it recommended: i) the removal of the biofuel target; ii) the harmonisation of national renewable energy support and a removal of this support once energy technologies compete fairly, *i.e.* once all external costs and market failures other than climate change are addressed; and iii) reconsideration of the usefulness of the energy efficiency target. Acceptance of such recommendations would help Sweden lower the cost of its climate change policies.

Furthermore, although Sweden wants to be a leader in climate change policies, the country should be careful in assessing the real impact on its economy of introducing targets that are more binding than the EU ones, especially when they are not expected to lead to additional emission reductions on a global scale. In particular, as there is no economic rationale for developing a fossil-fuel independent vehicle fleet by 2030, this ambition should be given up. The government should also implement a cost-benefit analysis of the policies that have contributed to the development of renewables and should consider the phasing out of the instruments where costs exceed benefits. The same rule should apply to the electricity certificate system. Meanwhile, so as to lower the deadweight losses of this system, only technologies for which a market failure justifies supporting the technology above the effect of the EU carbon price should give rise to certificates. The government could also consider introducing a price ceiling to certificates (or relaxing the quota) so as to avoid costly technologies being developed too early in the innovation cycle. Learning-by-doing, for instance coming from R&D in other technologies or from other countries, gradually reduces the cost of low-carbon technologies.

Developing the assessment of climate change policies

Sweden's climate change objectives are part of a set of environmental objectives, which originally comprised 15 quality objectives adopted by Parliament in 1999. Other climate change objectives have been introduced since, including those of the 2009 Climate Strategy. In 2009, the government launched an inquiry to assess the environmental objectives system (Swedish Government Inquiries, 2009). The report includes a number of criticisms and proposals, some of which are discussed below, that if implemented would largely improve the institutional framework for climate change policies.

A major weakness of the climate change policy framework is the insufficient assessment of policies. Policies are reviewed but there are few quantitative assessments of the impacts on both emissions and welfare. Furthermore, the assessments often concern some specific sectors and are done only occasionally. There is little analysis of the objectives and of their global implications, both *ex post* and *ex ante*.

As pointed out by the inquiry, this is partly because, while there are several institutions involved in climate change policies, their responsibilities are not fully defined. The Ministry of the Environment is in charge of deciding climate change objectives and policy instruments and is responsible for EU and global climate negotiations. The Swedish Environmental Protection Agency (SEPA), created in 1967, is a national agency whose task is to present proposals for environmental policy and legislation to the Swedish government and to ensure that environmental policy decisions are implemented. The Swedish Energy Agency (SEA) is a government agency for national energy policy issues. Its mission is to promote the development of Sweden's energy system so that it will become ecologically and economically sustainable. Hence, these three institutions are implicitly in charge of assessing climate change policies but none of them has received a clear mandate to do so both regularly and by covering the whole range of effects. Recently, the National Institute of Economic Research has developed resources and tools and, in particular, it has assessed the Parliamentary Climate Committee's proposals for the 2009 Climate Strategy. Several of the NIER's criticisms led to changes to the strategy. This form of assessment should be made more systematic. The government should also develop independent policy assessments.

Another weakness of environmental policies, in particular climate change policies, that was raised by the Swedish Government Inquiries (2009) is that objectives are not seen in an international context and that the interactions between Sweden's national objectives and international ones should be more carefully analysed. This is typically true for climate change policies that have been only marginally adapted to the introduction of the EU ETS. The main decision that has been taken was to exempt industries covered by the EU ETS from the carbon tax while Sweden should in fact reconsider its policies in the light of the development of EU-wide actions. Developing policy evaluations by both governmental agencies and independent ones would also help in this respect.

Box 4.4. **Summary of recommendations to enhance the cost-effectiveness of climate change policies in Sweden**

Make the carbon price more uniform and raise the clarity of the price signal

Continue to gradually phase out exemptions to the carbon tax and avoid introducing measures that would increase the heterogeneity of effective CO₂ tax rates. Consider freezing or lowering the general level of the CO₂ tax while enlarging the tax base if it is consistent with national GHG emission reduction targets.

Limit the interactions between the carbon tax and the energy tax by reforming the two. As far as possible, address the carbon dioxide externality only through the carbon tax. Use the energy tax and perhaps other taxes to address other externalities.

Tax biofuels over and above VAT to account for GHG emissions, partly outside Sweden, generated by the production and imports of biofuels. This can be done, as is planned by the government, by assessing tax exemptions against environmental sustainability criteria. Moreover, an energy tax should be applied to biofuels.

Limit the use of other instruments that implicitly generate a carbon price to situations where there is a distinct market failure or a clear other reason for having them. As the electricity certificate system is in place, phase out other forms of support to renewables in the electricity sector. Phase out most subsidies to local public investments in green technologies that have delivered limited GHG emission reductions.

Raise the share of GHG emission reductions achieved in sectors covered by the EU ETS and outside Sweden

In future negotiations on the allocation of permits within the EU ETS, take a larger share of the effort by negotiating lower permit allocations conditional on a downward adjustment of the EU level quota or by buying EU ETS permits with a strong commitment not to sell them in the future.

Work at the international level to reform existing flexible mechanisms so as to limit their additionality and bottleneck problems.

Avoid the overlap of targets

Assess the costs and gains of having developed renewable energy and of developing it even further. If renewables targets are renegotiated at the EU level, consider negotiating less binding national targets.

Restrict access to the electricity certificate system to technologies that require support in addition to that provided by the EU ETS carbon price. Introduce some provisions to avoid the certificate price reaching levels that generate excessively large costs to consumers. One possibility is to relax the quotas, another one is to introduce a price ceiling.

In the transport sector, avoid measures that target the development of one specific technology.

Reconsider the fossil-fuel-independent vehicle fleet ambition.

Improve the assessment of climate change policies

Develop *ex ante* and *ex post* evaluations by both governmental and independent institutions of the global effects of climate change policies.

Clarify the responsibilities between governmental institutions that are involved in climate change policies and put one of them in charge of the overall assessment of policies.

Assess more carefully the interactions between Sweden's climate change policies and those decided at an international level.

Notes

1. Annex I countries that have ratified the Kyoto protocol include the industrialised countries that were members of the OECD in 1992, plus countries with economies in transition, including the Russian Federation, the Baltic States, and several Central and Eastern European States.
2. There is another channel, the fossil fuel price channel, according to which emission reduction efforts in participating countries lower world demand for fossil fuels, thereby inducing a price decline that triggers greater fossil fuel use and higher GHG emissions in non-participating countries. This channel is predominant for large coalitions but not when a small country acts alone.
3. On the one hand, this estimate does not take into account exemptions that lower the impact on emissions. On the other hand, it does not include the impact of the energy tax on GHG emissions. Furthermore, the extrapolation assumes a linear relationship between the CO₂ tax and emission reductions.
4. The EU scheme will be extended to emissions from aviation from 2012 and to emissions from aluminium and chemical industries from 2013.
5. When allowances are auctioned, they simply do not buy allowances, or buy fewer.
6. In the absence of market imperfections, all countries would gain from trading: permit sellers would benefit from additional revenues while permit buyers would lower their mitigation cost.
7. Each year, companies submit an annual declaration of the amount of electricity sold or used during the previous year, which provides the basis for the calculation of companies' quota obligations. There is a penalty to be paid if the number of certificates does not cover the quota obligation, which has been revised up to 150% of the yearly average price of certificates.
8. From 2003 to 2005, the number of certificates issued exceeded the demand for them.
9. See Fisher and Newel (2007), Bye and Bruvoll (2008) and Bye and Bruvoll (2009) for recent critiques of Norway's green certificate system that shares several similarities with the Swedish system.
10. The figure was quoted in: http://svt.se/2.131518/1.1989708/miljonbidrag_till_gamla_kraftverk.
11. It represents a reduction by 20 millions of tonnes of CO₂eq.
12. GHG emissions will have to decrease by 7% in these sectors compared to a reduction by 10% before the crisis.
13. Broberg et al. (2008) show that stricter allowances allocation under the EU ETS would lower the cost of achieving the national target.
14. For other countries, the cost of the slight increase in the carbon price would be offset by financial transfers from Sweden.
15. The *National Emission Ceilings Directive* imposes emission ceilings for emissions of four key air pollutants (nitrogen oxides, sulphur dioxide, non-methane volatile organic compounds and ammonia). Other key EU legislation is targeted at reducing emissions of air pollutants from specific sources, including *transport* and *industrial facilities*. Internationally, the issue of air pollution emissions is also being addressed by the *Convention on Long-range Transboundary Air Pollution*.
16. To reduce GHG emissions by 40% in sectors not covered by the EU ETS, with one third of the reduction being achieved outside Sweden, the general level of the CO₂ tax has to be increased from EUR 100 to EUR 180 per tonne of CO₂eq. To reach the energy efficiency target, the CO₂ tax has to be raised to EUR 220 per tonne of CO₂eq., costing an additional 0.1% of GDP.

Bibliography

- ADEME (2009), "Fiscalité comparée de l'énergie et du CO₂ en Europe et en France", *Stratégie et Études* No. 20.
- Andersen, M. (2004), "Vikings and Virtues: A Decade of CO₂ Taxation", *Climate Policy*, Vol. 4, No. 1, pp. 13-24.
- Barker, T., S. Junankar, H. Pollitt and P. Summerton (2007), "Carbon Leakage from Unilateral Environmental Tax Reforms in Europe, 1995-2005", *Energy Policy*, Vol. 35, pp. 6281-6292.
- Bollen, J., B. Guay, S. Jamet and J. Corfee-Morlot (2009), "Co-benefits of Climate change Mitigation Policies: Literature Review and New Results", *OECD Economics Department Working Papers*, No. 692.

- Brännlund, R., T. Lundgren and P.-O. Marklund (2010), "Environmental Performance in Swedish Industry", mimeo, Umeå University, Sweden.
- Brännlund, R., T. Ghalwash, and J. Nordström (2004), "Increased Energy Efficiency and the Rebound Effect: Effects on Consumption and Emissions", No. 642, Umeå Economic Studies, Umeå University, Department of Economics, <http://econpapers.repec.org/RePEc:hhs:umnees:0642>.
- Brännlund, R. and Kriström, B. (2001), "Too Hot to Handle? Benefits and Costs of Stimulating the Use of Biofuels in the Swedish Heating Sector", *Resource and Energy Economics*, Vol. 23, No. 4, pp. 343-58.
- Broberg T., Samakovlis E., and J. Forslund (2010), "Investeringsstöd – ett överskattat styrmedel i miljöpolitiken", *Ekonomisk Debatt*, Nr 3.
- Broberg, T., E. Samakovlis, M. Sjöström and G. Östblom (2008), "Economic Assessment of the Climate Committee's Action Plan for Swedish Climate Policy", *Specialstudier No. 18*, National Institute of Economic Research.
- Broberg, T., T. Forsfält, G. Östblom (2010), "Integrerade mål inom klimat- och energipolitiken", Forthcoming report, Expert group for Environmental studies.
- Duval, R. (2008), "A Taxonomy of Instruments to Reduce Greenhouse Gas Emissions and Their Interactions", *OECD Economics Department Working Papers*, No. 636.
- Bye, T. and A. Bruvoll (2009), "Green Certificates and the Effect on the Climate", www.ssb.no/english/research/articles/2009/12/1259932098.4.html, English translation of "Grønne sertifikater– dyr og formålsløs fornybar", *Samfunnsøkonomen*, No. 7.
- Bye, T. and A. Bruvoll (2008), "Multiple instruments to change energy behaviour: The emperor's new clothes?", *Discussion Papers 549*, Research Department of Statistics Norway.
- Fischer, C. and R. Newell (2007), "Environmental and Technology Policies for Climate Mitigation", *Journal of Environmental Economics and Management*, Vol. 55, No. 2.
- Hassett, K., A. Mathur and G. Metcalf (2008), "The Incidence of a US Carbon Tax: A Lifetime and Regional Analysis", *NBER Working Papers*, No. 13554.
- Hill, M. and B. Kriström (2002), "Sectoral EU-Trading and other Climate Policy Options: Impacts on the Swedish Economy", mimeo Skogsekonomi, SLU.
- IEA (2009a), *Emissions of CO₂, CH₄, N₂O, HFC, PFC and SF₆*, IEA, Paris.
- IEA(2009b), *Emissions from Fuel Combustion*, IEA, Paris.
- IEA (2010a), *World: Energy statistics and Balances*, IEA, Paris.
- IEA (2010b), *Renewables Balance*, IEA, Paris.
- Jamet S. and J. Corfee-Morlot (2009), "Assessing the Impacts of Climate Change: A Literature Review", *OECD Economics Department Working Papers*, No. 693.
- Johansson, B. (2000), "The Carbon Tax in Sweden", in *Innovation and the Environment*, OECD, Paris.
- Johnstone, N., I. Hascic and D. Popp (2009), "Renewable Energy Policy and Technological Innovation: Evidence Based on Patent Counts", *Environmental and Resource Economics*, Vol. 45(1), pp. 133-155.
- Ministry of Finance (2009), *Effektivare skatter på klimat- och energiområdet*, DS 2009:24.
- Ministry of the Environment (2009a), *Sweden's Fifth National Communication on Climate Change*, Ds 2009:63.
- Ministry of the Environment (2009b), *A Sustainable Energy and Climate Policy for the Environment, Competitiveness and Long-Term Stability*, Stockholm.
- National Institute of Economic Research (2010), *Konjunkturläget*, September.
- OECD (2006), *The Political Economy of Environmentally Related Taxes*, Paris.
- OECD (2008), *Environmental Outlook to 2030*, OECD, Paris.
- OECD (2009a), *The Economics of Climate Change Mitigation: Policies and Options for Global Action beyond 2012*, OECD, Paris.
- OECD (2009b), *OECD Economic Survey: European Union*, OECD, Paris.
- OECD (2010a), "Costs and Effectiveness of the Copenhagen Pledges: Assessing Global Greenhouse Gas Emissions Targets and Actions for 2020", OECD, Paris.
- OECD (2010b), *OECD Economic Outlook No. 87*, OECD, Paris.

- Poterba, J. (1991) "Tax Policy to Combat Global Warming: On Designing a Carbon Tax", in R. Dornbusch and J. Poterba (eds.), *Global Warming: Economic Policy Responses to Global Warming*, pp. 71-98, MIT Press, Cambridge, MA.
- Steenblik, R. (2007), "Subsidies: The Distorted Economics of Biofuels", in *Biofuels: Linking Support to Performance*, OECD/ITF, Paris.
- Stern, N. (2007), *The Economics of Climate Change: The Stern Review*, Cambridge University Press, Cambridge.
- Swedish Government Inquiries (1997), *Skatter, Miljö Och Sysselsättning*, SOU 1997:11.
- Swedish Government Inquiries (2009), *Sweden's Environmental Objectives – New Perspectives*, SOU 2009:83.
- Swedish Energy Agency (2008), *The Electricity Certificate System*.
- Tol, R. (2005), "The Marginal Damage Costs of Carbon Dioxide Emissions: an Assessment of the Uncertainties", *Energy Policy*, Vol. 33, pp. 2064-2084.
- Wara, W. and D. Victor (2008), "A Realistic Policy on International Carbon Offsets", Working Paper No. 74, Stanford University.

ANNEX 4.A1

Swedish climate and energy policies

The Swedish policy framework to mitigate GHG emissions includes a large number of policies.

Taxes

A carbon tax was introduced in 1991. An energy tax also taxes fossil fuels with a tax rate that depends on fuels but not directly on their CO₂ content. The general level of the carbon tax has been progressively increased and has now reached EUR 111 per tonne of CO₂. Manufacturing industry, agriculture, forestry and aquaculture pay 21% of the general level of the tax and there are special rules for further tax reductions for energy-intensive industries and for diesel used in land-based industries. Biofuels are exempted from the energy and carbon taxes. Looking ahead, the Swedish Parliament decided in December 2009 to gradually increase the general carbon tax and to reduce these exemptions, including:

- The carbon tax on fossil fuels for heating in industries not included in the emissions trading scheme and for agriculture, forestry and aquaculture activities will be increased from 21% to 60% of the general level by 2015, with a first move to 30% by 2011.
- The special reduction rules for energy-intensive companies will be gradually phased out over the period 2010-15.
- For industries included in the EU emissions trading scheme, the carbon tax will be phased out by 2011 to avoid double regulation.
- Starting in 2011, the exemptions from the carbon tax on diesel used in land-based industries will be reduced.

Policies for the development of renewable energy

The main policies for meeting the target of increasing the share of renewable energy to 50% of energy consumption by 2020 include:

- Improving and setting more ambitious targets for the electricity certificate system.
- Establishment of a national planning framework for windpower with a corresponding production capacity of 30 TWh, with 20 TWh on land and 10 TWh offshore.
- Improvement in the conditions for connecting up renewable electricity production to the national grid.
- Stimulation package to promote the development of vehicle biogas.

- Use of the EU Rural Development Programme (2007-13) to support and improve the production and processing of renewable energy.
- The government has announced new investments in renewable energy technologies in the *Budget Bill for 2011*.

Action plan for a fossil-fuel-independent vehicle fleet

A number of policies (market-based and non market-based) aim, directly or indirectly, at reducing GHG emissions in the transport sector. The carbon and energy taxes are the main instruments. However, the rise in the carbon tax has been partially offset by the decrease in the energy tax. Other policies include:

- The obligation for all large filling stations to sell at least one renewable fuel. Filling stations that wish to sell biogas have received extra investment support.
- Support to research efforts in vehicle technology (SEK 450 million a year for the next five years) focusing on the development of electric and hybrid vehicle technology.
- An exemption from vehicle tax for the first five years for new green cars. This has replaced a green car rebate of SEK 10 000 granted on the new purchase of an eco-classified car between 2007 and 2009.
- Local benefits for eco-classified cars (exemption from the congestion tax in Stockholm, free parking in some cities).

The target is for Sweden to have a vehicle fleet that is independent of fossil fuels by 2030. In addition to the measures mentioned above, the action plan includes:

- The production of transport biofuels and other liquid biofuels must fulfil certain sustainability criteria. Biofuels that generate reductions in greenhouse gas emissions of less than 35%, compared to the oil alternative, may not be credited towards the target.
- Increased amount of low-blend biofuels in petrol and diesel through rapid implementation of the new EU Fuel Quality Directive. This directive provides scope for blending up to 10% ethanol in petrol and 7% biodiesel.
- Analysis of the conditions for and consequences of a quota requirement system to accelerate the introduction of renewable fuel in the transport sector.
- The government has announced in the Budget Bill for 2011 a subsidy for low-emission cars.

Policies to increase energy efficiency

Energy efficiency is stimulated by most of the general instruments, in particular by the carbon and energy taxes. There is a programme for energy efficiency in energy-intensive industry. Companies that participate in the programme receive tax relief for the energy tax on electricity. In exchange, companies have to review the potential to take measures that improve the efficiency of energy use and then to implement measures to exploit this potential. Participating companies account for one fifth of Sweden's total energy use. There are also a number of requirements for energy use in buildings as well as a requirement for energy declarations for buildings based on the EU Directive 2002/91/EC.

Going forward, specific policies that are proposed to increase energy efficiency are:

- Strengthening of regional and local energy and climate efforts. There is scope for municipalities and county councils to enter agreements on energy efficiency with the Swedish Energy Agency.

- Strengthened information and guidance initiatives.
- Support for enterprises that use significant amounts of energy – an “energy audit cheque” – to help them carry out energy audits in 2010-14.
- Strengthening of efforts in the fields of technology procurement and the launching of energy-efficient technology aimed at increasing the range of energy-efficient products on the market.
- New requirements for “smart electricity and hot water metering” in newly constructed and renovated buildings.

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

The OECD is a unique forum where governments work together to address the economic, social and environmental challenges of globalisation. The OECD is also at the forefront of efforts to understand and to help governments respond to new developments and concerns, such as corporate governance, the information economy and the challenges of an ageing population. The Organisation provides a setting where governments can compare policy experiences, seek answers to common problems, identify good practice and work to co-ordinate domestic and international policies.

The OECD member countries are: Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The European Commission takes part in the work of the OECD.

OECD Publishing disseminates widely the results of the Organisation's statistics gathering and research on economic, social and environmental issues, as well as the conventions, guidelines and standards agreed by its members.

OECD Economic Surveys

SWEDEN

SPECIAL FEATURE: CLIMATE CHANGE

Most recent editions

Australia, November 2010
Austria, July 2009
Belgium, July 2009
Brazil, July 2009
Canada, September 2010
Chile, January 2010
China, February 2010
Czech Republic, April 2010
Denmark, November 2009
Estonia, April 2009
Euro area, December 2010
European Union, September 2009
Federal Republic of Yugoslavia, January 2003
Finland, April 2010
France, April 2009
Germany, March 2010
Greece, July 2009
Hungary, February 2010
Iceland, September 2009
India, October 2007
Indonesia, November 2010
Ireland, November 2009
Israel, January 2010

Italy, June 2009
Japan, September 2009
Korea, June 2010
Luxembourg, May 2010
Mexico, July 2009
Netherlands, June 2010
New Zealand, April 2009
Norway, March 2010
Poland, April 2010
Portugal, September 2010
Romania, October 2002
Russian Federation, July 2009
Slovak Republic, November 2010
Slovenia, July 2009
South Africa, July 2010
Spain, December 2010
Sweden, January 2011
Switzerland, December 2009
Turkey, September 2010
Ukraine, September 2007
United Kingdom, June 2009
United States, September 2010

Please cite this publication as:

OECD (2011), *OECD Economic Surveys: Sweden 2011*, OECD Publishing.

http://dx.doi.org/10.1787/eco_surveys-swe-2011-en

This work is published on the *OECD iLibrary*, which gathers all OECD books, periodicals and statistical databases. Visit www.oecd-ilibrary.org, and do not hesitate to contact us for more information.

Volume 2011/1
January 2011

OECD publishing
www.oecd.org/publishing

ISSN 0376-6438
2011 SUBSCRIPTION (18 ISSUES)
ISSN 1995-3380
SUBSCRIPTION BY COUNTRY

ISBN 978-92-64-09227-3
10 2011 01 1 P 9



789264 092273