



**DENMARK'S
CONVERGENCE PROGRAMME
2011**

THE DANISH GOVERNMENT
May 2011

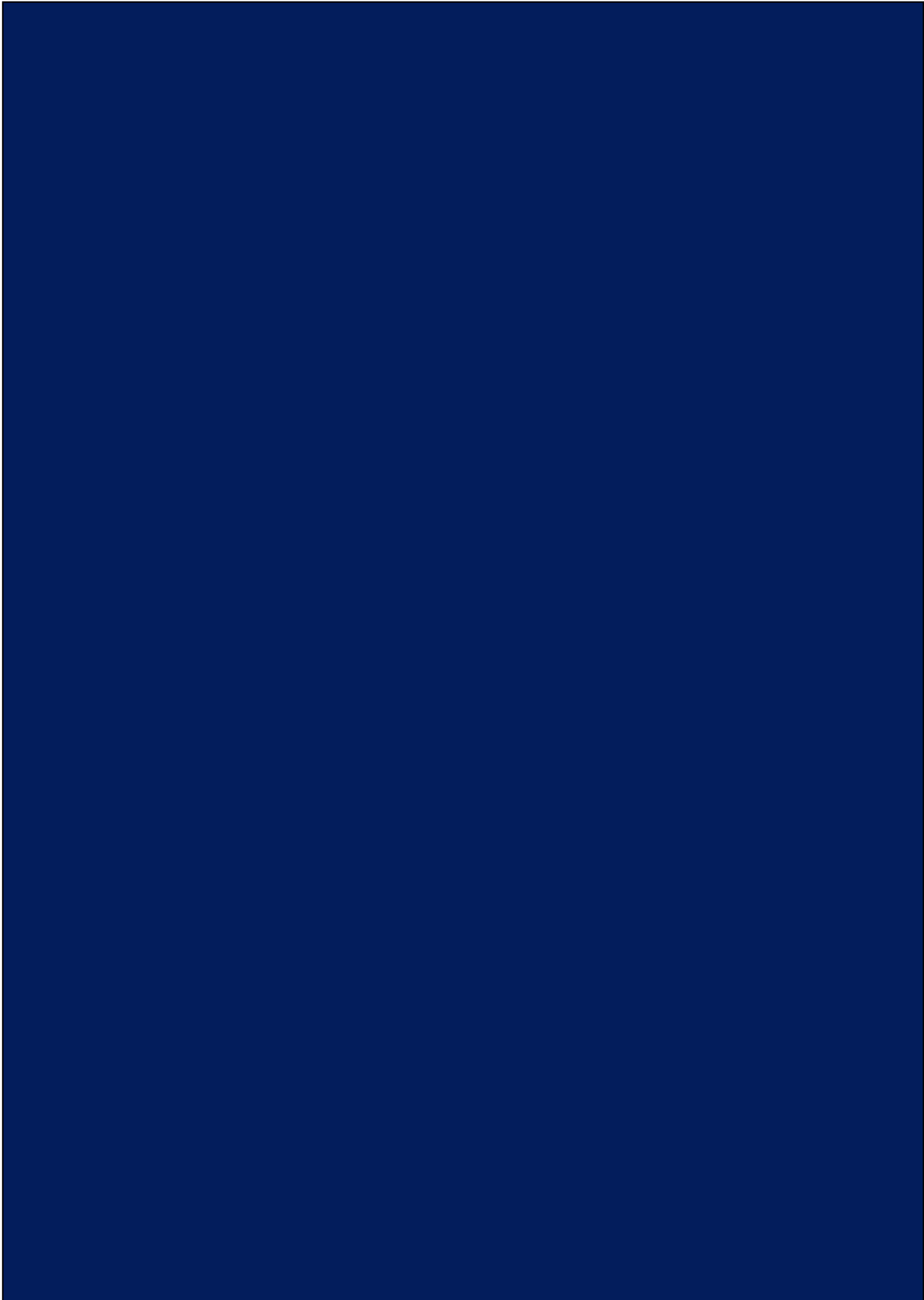


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1. Challenges, strategy and targets towards 2020

The Danish Convergence Program 2011 is based on the economic projections and policies set forth in "Reform Package 2020", April 2011.¹

1.1 Introduction

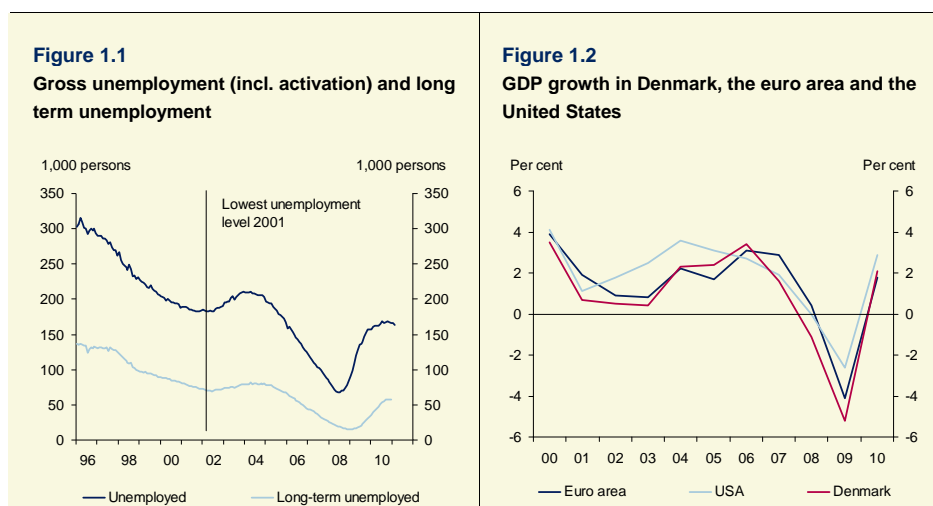
The Danish economy was hard hit by the global downturn in the autumn of 2008 which came on top of already slowing demand, after a period of high capacity pressure, weakening competitiveness and strong house price increases. Since mid-2009, however, the economy has moved forward again, and over the past year and a half growth has been stronger than expected and unemployment has risen less than feared.

The gross unemployment rate (including participants in activation schemes) has eased down during the last six months and is presently lower than in 2001 when it reached a trough after the prolonged economic upturn in the 1990s, *cf. figure 1.1 and 1.2*. This result primarily reflects continued labour market reforms as well as strongly supportive fiscal and monetary policies during 2009 and 2010.

The crisis and the large budgetary stimuli have reinforced the looming fiscal challenges facing Denmark. Large government surpluses have turned into significant deficits, estimated at approx. DKK 70 billion in 2011 (4 per cent of GDP). Denmark has become subject to the excessive deficit procedure and received a recommendation from the Council of Ministers (ECOFIN) in the summer of 2010 to bring the deficit below 3 percent of GDP by 2013 and to undertake fiscal efforts to improve the structural budget balance by 1½ percent of GDP during the years 2011 to 2013.

Moreover, public debt and interest payments are rising at a time when demographic tailwinds have turned into headwinds. In the coming decades, public finances will come under increasing and systematic pressure from demographics and declining North Sea revenues.

¹ The Convergence Programme is prepared in accordance with the Stability and Growth Pact. Under the EU regulations, euro-area member states are required to prepare stability programmes, while other countries prepare convergence programmes. The Council issues an opinion on each national programme based on a recommendation from the Commission and discussions in the Economic and Financial Committee (EFC). The Danish convergence programme and the Council's opinion are considered by the Danish parliament (Committee for European Affairs). The convergence program is based on the forecast in the Economic Survey of December 2010 up to 2012 with adjustments in the light of new statistics for the Danish economy, including the preliminary national accounts for 2010.



Source: Statistics Denmark, Eurostat and own calculations.

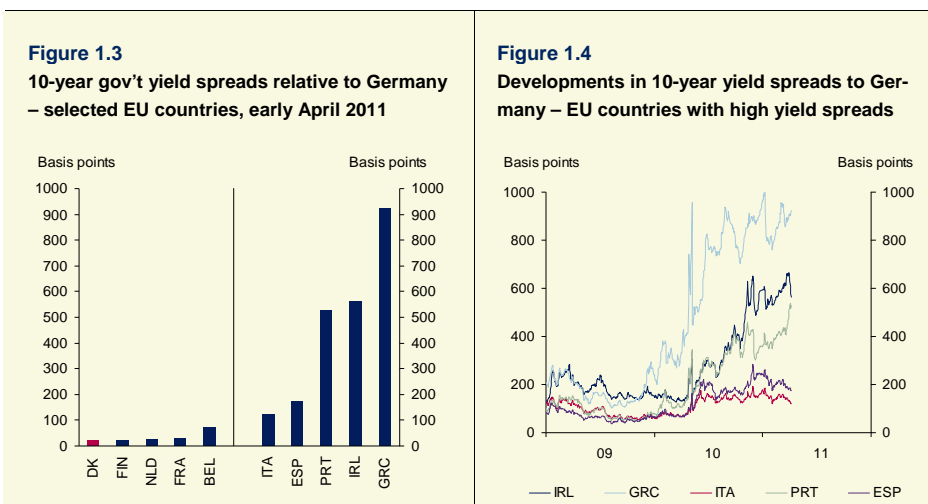
With the Fiscal Consolidation Agreement of May 2010, public finances will be consolidated as of 2011. Fiscal policy plans are set so as to comply with the EU recommendation to improve the structural budget balance by 1½ percent of GDP during 2011 to 2013.

The agreement contains consolidation initiatives of some DKK 24 billion (1¼ percent of GDP) and the overall fiscal policies planned towards 2013 imply a gradual withdrawal of close to 90 per cent of the fiscal easing implemented during 2009 and 2010. The agreement implies, among other things, that real public consumption is kept broadly stable until 2013 so that spending is brought back onto the previously planned path. The agreement also contains substantial labour market reform with a view to maintain low long-term unemployment and strengthen labour supply. Overall, the agreement is estimated to strengthen labour supply by about 10,000 persons in the medium term, equivalent to 0.3 per cent of the workforce.

In the wake of the financial crisis, the international economic climate has changed. The recovery remains moderate in the western world, and many countries face fiscal challenges that can seem almost overwhelming. Financial markets focus increasingly on public deficits and debt, and on how countries handle the task of ensuring sound public finances. The costs of large deficits and debts are substantial, and in many EU countries the interest rate premia relative to Germany have widened, *cf. Figure 1.3 and 1.4*.

The Danish economy is small, open and sensitive to interest rate changes, and housing market developments are important for overall demand as well as financial stability. These factors make the economy vulnerable to potential financial turmoil. In this vein, employment and growth have become more sensitive to changes in short-term interest rates, and have thus enhanced the potential consequences for the real economy of pressures on the Danish krone accompanied by higher interest rates. Moreover, the financial crisis has demonstrated that economic stability is also highly dependent on international confidence in the Danish financial sector.

For Denmark, it has thus become more important to pursue responsible and stability-oriented economic policies which underpin credibility in the fixed exchange rate policy, and ensure that Danish government securities are still seen as a "safe haven" in times of financial turmoil. If confidence is not maintained it could endanger the moderate recovery now under way and cause public interest payments to rise, thereby adding to government debt and reducing the room for manoeuvre going forward.



Source: Bloomberg.

1.2 Fiscal challenges towards 2020

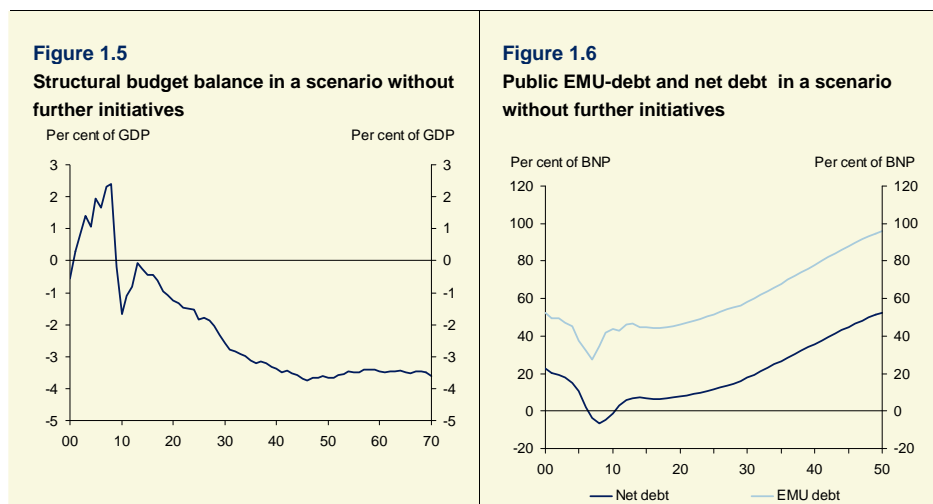
The challenges facing fiscal policies have increased significantly. As a result of the recession and the major fiscal efforts during the crisis, government deficits are large and public debt is rising. At the same time the pressure from demographic trends and declining North Sea revenues are set to continue in the coming decades. In addition, the income base for government revenues appears to be more permanently reduced after the crisis, and the economy's growth potential appears rather limited.

Going forward, it is a key requirement that the growth in public spending is reduced. In the last 20-30 years, government consumption has grown consistently more than what had been planned and agreed upon among the different layers of government.

But even if the annual growth in government consumption in 2014 to 2020 is approx. half as large as the average over the last 30 years (i.e., if the growth rate is reduced to about 0.8 per cent per year), fiscal challenges remain significant. In such a scenario the projected structural deficit is equivalent to approx. 1¼ per cent of GDP (DKK 23 billion) in 2020 and approx. 2½ per cent of GDP by 2030, *cf. figure 1.5*. Public debt and interest payments would increase significantly *cf. figure 1.6*, and fiscal policy would not meet the objective of fiscal sustainability. During recessions, the deficit would be 2-3 per cent of GDP higher than the projected

structural deficit. Hence, if reforms are not implemented to strengthen public finances, Denmark would often exceed the 3 percent deficit limit in the Stability and Growth Pact.

The projections imply that public expenditures are systematically higher than revenues on average over the cycle. Hence, the fiscal challenge will not be remedied by better cyclical conditions or if growth is stronger than expected.

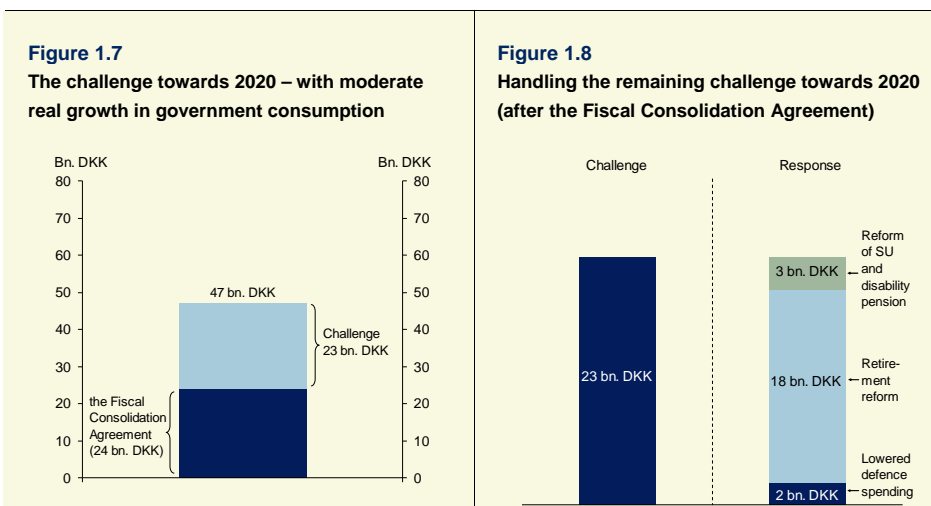


Note: The scenario in the figures illustrates the fiscal challenges. The effects of the proposed retirement reform and other new initiatives are not included.

Source: Statistics Denmark and own calculations.

The Fiscal Consolidation agreement is the first step towards ensuring sound public finances. Without the agreement, the structural deficit would reach an estimated 3 per cent of GDP by 2020. It would thus require measures corresponding to around DKK 47 billion to ensure structural fiscal balance by 2020, *cf. Figure 1.7*. With the Fiscal Consolidation Agreement the remaining challenge is cut in half, and the deficit will be approx. 1¼ per cent of GDP in 2020 or about DKK 23 billion.

The *Reform Agenda 2020* presents concrete proposals to tackle the remaining challenge and thus achieve structural fiscal balance by 2020. The proposal for a retirement reform handles the bulk of the challenge (18 billion). In addition, the proposed reforms of student grants (SU) as well as disability pensions and flex-jobs contribute 3 billion, *cf. Figure 1.8*. The remainder is handled by lower defence spending. The proposals are described in Section 1.3.2.



Note: Without the Fiscal Consolidation Agreement the structural deficit in 2020 is estimated to close to 3 per cent of GDP. Ensuring structural balance by 2020 requires a gradual strengthening of the primary balance of some 2½ per cent of GDP or about DKK 47 billion. The Fiscal Consolidation Agreement meets about DKK 24 billion of this challenge.

Source: Own calculations.

The assessment of the size of the fiscal challenges towards 2020 (the challenge that is met through the reform proposals) is based on a set of assumptions that may in themselves prove ambitious. Hence, the assessment requires a normalization of cyclical conditions by 2015, and that the registered (or net) unemployment rate hereafter is 3½ percent of the workforce on average over the cycle; moreover, productivity growth is assumed to strengthen compared to the past 15 years, *cf. Box 1.1*. The assessment is also conditional upon growth in public spending being reduced; in particular, real growth in public consumption is equivalent to ¾ percent per year in 2014 and 2015 (as in the 2015-plan) and 0.9 per cent annually in 2016-20.

Box 1.1**Assumptions behind the 2020-projections**

The assessment of the consolidation challenge of DKK 23 billion towards 2020 – and DKK 47 billion excluding the Fiscal Consolidation Agreement – is based on the following assumptions, in particular:

- The scenario assumes continued economic recovery after the financial crisis with growth rates high enough to ensure that the current output gap is gradually closed towards 2015.
- The registered unemployment rate declines to 3½ per cent of the workforce in 2015 – equivalent to the estimated structural level – and is maintained at that level thereafter. Unemployment (national definition) is thus 3½ per cent of the workforce on average over the business cycle in the coming decades.
- The Fiscal Consolidation Agreement is implemented and the expenditure plans in the agreement are adhered to. Thereafter, the technical projection principles imply an average growth rate in real government consumption that is approx. half as large as in the past 30 years.
- Productivity growth is assumed to be 1½ per cent per year in the private non-agricultural industries.
- Average working hours are largely unchanged towards 2020 as the effects of, in particular, the tax reform in *Spring Package 2.0* are estimated to off-set the downward pull from changes in the workforce age and gender composition. However, there is likely underlying downward pressure on working hours which is expressed, e.g., by surveys showing that more employees would prefer to work fewer hours than in their present job compared with those who would prefer to work more hours.
- Towards 2020 the overall employment rate for immigrants and descendants from non-western countries in the age group 15-64 years is assumed to increase by approx. 3 percentage points (due to changes in notably age composition within the group). For immigrants from non-western countries, the projection assumes an increase in the employment rate of 1 percentage point and for descendants an increase of 6 percentage points.
- In addition to contributions from known oil and gas fields and known methods of production, the projected revenues from oil and gas activities in the North Sea incorporate an assumed contribution from new technologies that may foster increased oil and gas extraction and a contribution from exploration activities, i.e. increased oil and gas production owing to discoveries of new fields.

The crisis has also exposed that Denmark is facing a challenge of low growth potential. Productivity growth has been low for a sustained period and even though employment has increased, the growth in prosperity has been less than in many comparable countries. Low productivity growth has also dampened the government revenue base. This has increased pressures on public finances because the growth in public spending has not been reduced correspondingly. In the coming years, demographic developments will reduce labour supply even as the overall population grows, mainly because the number of elderly people increases. This causes pressure on public finances and dampens potential growth in the private sector, especially if growth in public consumption continues and thus reduces the recruitment base for the private sector.

The Danish economy is thus facing at least 3 important challenges:

- Growth potential has to be strengthened. Without reforms to increase labour supply or an increase in productivity growth, the growth potential is very limited - around 1 per cent per year. With substantial challenges for both public finances and growth, it is a key requirement that private sector growth conditions are improved. This requires reforms that can strengthen labour supply, productivity and competitiveness.
- Public finances need to be strengthened significantly to ensure medium-term balance. Without further reforms to strengthen the revenue base there will be virtually no room for growth in real public consumption over the next decade, if structural fiscal balance is to be reached by 2020.
- It is a key requirement that spending does not continue to increase more than what is planned and agreed. Stricter control mechanisms have been implemented, but may not be sufficient over the longer run. There is a need to introduce a new spending control system based on binding ceilings for the central government, municipalities and regions.

1.3 Strategy and targets towards 2020

Sound public finances and a credible and effective strategy to meet the fiscal targets towards 2020 will support low interest rates and provide greater certainty about future economic conditions for enterprises and citizens. Sound finances and a credible fiscal strategy is also key to improve growth performance in a medium and long term perspective.

At the same time, fiscal policy should facilitate economic stability over time and help to prevent major imbalances and overheating pressures that might arise.

In the 2020 plan the central objective for fiscal policy is to ensure at least structural fiscal balance by 2020. It is also a central requirement that the structural deficit must not exceed ½ per cent of GDP in 2015. These targets are Denmark's MTO (Medium Term Objective).

The target of structural balance underpins the credibility of fiscal policies and the stable exchange rate and ensures fiscal room for manoeuvre when cyclical conditions are weak.

By ensuring structural balance in 2020 through initiatives that permanently strengthen public finances, fiscal policies will simultaneously satisfy the requirement of (at least) fiscal sustainability. In addition, structural balance (or a deficit which is no higher than ½ percent of GDP) will reduce the risk that Denmark again exceeds the 3 per cent of GDP limit for public deficits in the EU Stability and Growth Pact.

In the 2020-strategy, the economic challenges are addressed through concrete reform proposals to increase private employment and through better control and prioritization of public expenditures.

A central goal of the plan is that private employment can increase by approx. 125,000 persons from 2010 to 2020 (including cyclical normalization). The concrete reform proposals can

ensure this objective. The projected growth in private employment is thus approx. 125,000 persons from 2010 to 2020 - or approx. 6 ½ percent. – given the assumptions underlying the demographic and economic scenario, *cf. Section 1.4*. It is the increase in private employment that ensures balance on public finances in 2020.

The reforms will therefore also strengthen the growth potential which otherwise seems very limited toward 2020. If productivity growth does not increase and the labour force is not expanded through reforms of, notably, the retirement system, then the underlying growth potential is estimated at approx. 1 per cent per year on average over the next 10 years. This is considerably less than in the past 30 years. Low growth in employment and incomes would then require very low growth in public spending. In addition, continued low productivity growth would require very low wage increases over a long period, particularly if the deterioration in cost competitiveness since the late 1990s is to be fully or partly reversed.

The proposed reforms of the retirement system, study grants and disability pensions are estimated to increase growth potential by approx. ½ percentage point per year in 2014-2020, while also providing a major contribution to address the fiscal challenges.

In addition, productivity growth in private (non-agricultural) industries is assumed to increase from just over 1 per cent per year in the past 15 years to 1½ per cent going forward. In sum, this means that the underlying growth potential - excluding cyclical contributions – can be raised from just less than 1 per cent to close to 2 per cent per year until 2020.

Key Targets towards 2020

- Structural fiscal balance by 2020. Public debt accumulation is halted.
- The target is reached through reforms to increase labour supply and by better control of public expenditures.
- From 2010 to 2020 private employment can increase by 125.000 persons (6½ per cent).
- The growth potential increases to almost 2 per cent per year – compared to around 1 per cent without new initiatives.
- The reforms create room for growth in public consumption of about DKK 4 billion (0.8 per cent) per year from 2014 to 2020.
- Primary public expenditures relative to (cyclically adjusted) GDP shall be below 50 per cent by 2020. This includes aiming for public consumption to be less than 27 per cent of (cyclically adjusted) GDP by 2020.
- A new expenditure policy framework is proposed based on binding spending ceilings for the central government, municipalities and regions, respectively, and anchored in a specific budget law.
- Continued tax freeze so as not to dampen growth, and to provide security for enterprises and households that their financial situation is not burdened by extra taxes.

An increase in productivity growth of ½ percentage point is an ambitious requirement. Increased productivity is first and foremost a result of innovation, adaptation and investments taking place in the market-based private sector. Productivity growth in the private sector is facilitated by healthy and stable business conditions that encourage firms to use and develop their strengths while ensuring that productive resources – labour and capital – can be channelled to their most valuable uses. Concrete measures shall, among other things, strengthen competition, ensure a continued well-educated and flexible labour force, good infrastructure and research, innovation and entrepreneurship. A number of initiatives have been implemented in recent years that strengthen conditions for business growth. These initiatives will have increasing effect in the coming years, *cf. Section 1.4.*

If the reform proposals are implemented in full, the remaining potential for strengthening labour supply through legislation or changed practices will be limited. The most significant as well as the majority of the initiatives previously proposed for example by the Labour Market Commission and the Welfare Commission would then be implemented. The remaining reform options have basically less scope, and the potential effects are of a more uncertain nature.

The key principles for **expenditure policy** are that intra-governmental agreements are to be adhered to and that spending plans or ceilings can be raised only if and when concrete decisions are taken to strengthen revenues with a high degree of certainty. The planned expenditure path must always be aligned with the objective of structural balance in 2020. Hence, the expenditure path is formed on the basis of a scenario, which only includes funding from initiatives that are already enacted or have found majority political support.

This marks a key change from previous medium-term plans where expenditure growth was often determined first, while the actual measures to provide the funding were to be decided subsequently. Typically, the plans included non-specific reform requirements, i.e. where the reforms were not specified beforehand, and whereas such reforms may be difficult to implement subsequently.

If the concrete reform proposals are adopted, they will help provide for required resources to core areas of public services such as health, education and research. Specifically, public consumption can grow by approx. 0.8 per cent per year, equivalent to just over DKK 4 billion annually after 2013, when the fiscal consolidation agreement expires. If reform efforts are less ambitious than what is put forth, then the growth in resources to public service is reduced proportionately.

With the proposed reforms, the scope for growth in service expenditures from 2013 to 2020 will be at approximately the same level as in previous plans, including the 2010-plan from 2001. Hence, the decisive factor is that spending does not exceed plans and that financial agreements are respected. The Government has therefore put forward proposals to introduce a new spending governance system with clear and politically binding spending ceilings for the state, municipalities and regions, respectively. The new principles are proposed to be anchored in a budget law on expenditure ceilings.

With the reforms that have been put forward and better control of public spending, primary public expenditures will account for less than 50 per cent of (cyclically adjusted) GDP in

2020. This is a key objective in the plan. It is also an essential precondition that government consumption is less than 27 per cent of (cyclically adjusted) GDP in 2020, *cf. Section 1.3.2.*

Better spending control, efficiency gains and reprioritisation will, in conjunction with the proposed reforms to raise labour supply, create room to strengthen public service in core areas, while maintaining the tax freeze. The environmental clause in the tax freeze is adjusted so the tax freeze is robust to the transition to a society independent of fossil fuels while not increasing the tax burden. At the same time, the Fiscal Consolidation Agreement and the tax reform in Spring Package 2.0 are implemented as planned. There is no room for unfunded tax cuts toward 2020.

1.3.1 Structural balance in 2020 – the primary operational fiscal target

The central fiscal objective is to ensure structural fiscal balance by 2020. Reaching balance in 2020 - through explicit and concrete initiatives - will slow debt accumulation, maintain high credit worthiness and the basis for continued low interest rate spreads relative to Germany.

It is estimated that there is a structural deficit of 1¼ per cent of GDP in 2010 and that there will be roughly balance by 2013, when the fiscal consolidation agreement expires. Towards 2020 the structural balance weakens again due to demographic and other factors, even though growth in public consumption is lower than in the past. The structural deficit is estimated at 1¼ per cent of GDP in 2020 in the absence of new initiatives.

The objective of balance should be viewed in light of Danish public finances being highly sensitive to cyclical fluctuations as well as to financial market developments. During a normal downturn is not unusual for the government balance to be 2-3 per cent of GDP below the structural level. This means that Denmark can quickly approach the 3 per cent boundary for excessive deficits in the Stability and Growth Pact.

If the deficit is greater than 3 per cent, Denmark will receive a recommendation to tighten fiscal policy to bring the deficit below 3 per cent of GDP, similar to the recommendation Denmark has received for the years 2011-13. It is against this background that Denmark's medium-term target for the structural balance - the so-called "Medium Term Objective" (MTO)- under the EU's Stability and Growth Pact must not be less than -½ per cent of GDP.

The objective for 2015 is, as already stated, that the structural deficit can be no more than ½ percent of GDP, which corresponds precisely to the minimum requirement for Denmark in accordance with the Stability and Growth Pact. The requirement is slightly milder than in the 2015-plan and the Convergence Program 2009, where the objective was structural balance by 2015. The milder requirement should be seen in the light of the proposed reforms that will raise growth potential and strengthen public finances significantly towards 2020 and beyond. In the absence of such reforms, it would be relevant to reconsider the objective for 2015.

The objective of structural balance in 2020 also implies that fiscal policy meets the requirement of (at least) fiscal sustainability, according to the projections. The concept of fiscal sustainability does not imply specific limits on the size of budget deficits over time or the level at

which public debt will be stabilized in the long term. Hence, fiscal sustainability does not preclude long periods of large deficits or high and rising public debt.

In this vein, the requirement of fiscal sustainability is viewed as desirable and necessary but not a sufficient objective for fiscal policy, given the projected path for deficits and debt. A scenario in which fiscal policies are tightened over the next years to achieve a fiscal sustainability indicator of zero, shows structural deficits of 2-3 percent of GDP for several decades and EMU debt rises to approx. 80 per cent of GDP by 2060. The requirements of the Stability and Growth Pact will therefore not be met, especially during periods of weak economic conditions. In that case the deficit would be somewhat higher than the limit of 3 per cent of GDP. Against this background, there will be a risk that the sustainable scenario with large deficits and debt for a long time would not be seen as credible in financial markets, *cf. Chapter 5*.

1.3.2 Reforms and better expenditure control can ensure that the 2020-targets are met

Three concrete reform proposals have been put forward to help foster growth and reach the objective of balance in 2020:

- **Retirement Reform:** The proposal for a retirement reform implies that the 2-year increase in the statutory ages for voluntary early retirement and – subsequently – old age pension adopted in the Welfare Agreement of 2006 are brought forward from 2019 to 2014, and that the voluntary early retirement scheme is gradually abolished. With the proposal, those under age 45 would no longer have the possibility of early retirement. The retirement reform is estimated to strengthen public finances by approx. DKK 18 billion in 2020.
- **Study grant reform:** The proposal for a reform of study grants is aimed at providing incentives for students to complete their education quicker and enter the labour market earlier. The proposal implies, in particular, that grants are only available for the standard amount of time that each study is supposed to take. The study grant reform is estimated to strengthen public finances by about DKK 1 billion in 2020.
- **Reform of disability pension and flex job:** The proposal for a disability pension reform implies that persons under 40 years should not be given lifelong disability pension, but undergo a development program that should help them back to work. Furthermore the flex job scheme will be targeted better, in part by limiting the wage subsidy available for people with relatively high hourly earnings. The reforms of disability pensions and flex jobs are estimated to strengthen public finances by approx. DKK 2 billion in 2020.

Together the reforms improve public finances by DKK 21 billion in 2020. This handles the bulk of the overall challenge of ensuring balance, estimated at 23 billion (after the Fiscal Consolidation Agreement), *cf. Table 1.1*.

In addition, real growth in public consumption is set at approx. 0.8 per cent per year from 2014 to 2020. The room for this moderate growth in public consumption is achieved as a consequence of the structural reforms, and is compatible with structural balance in 2020.

Table 1.1
Effects of reforms etc. in 2020 on structural budget balance and employment

	Structural budget balance		Employment
	DKK billion	Per cent of GDP	1,000 persons
Challenge towards 2020	-23	-1.25	-
Contribution from:			
+ Reforms of Study grants and disability pension	3	0.15	10
+ Retirement reform	18	1.0	70
+ Lower defence spending	2	0.1	-
2020 scenario	0	0.0	80

Note: Defence spending includes savings and streamlining of the armed forces, which saves 2 DKK billion annually from 2015 onwards. Real growth in public consumption is 0.8 per cent annually in 2014-20. This is slightly less than in the scenario defining the fiscal challenge. The tax freeze is included to 2020. The employment effects are incl. subsidized employment, in particular flex jobs.
 Source: Own calculations.

The real growth in public consumption is thus slightly less than what follows from the technical assumptions that are normally used in the long term projections - and which are included in the assessment of the challenge towards 2020. To ensure room for spending on, in particular, health and education within the new expenditure framework, efficiency gains and savings related to defence spending shall save DKK 2 billion annually from 2015 onwards. Together with the other assumptions about public expenditures and the growth in employment and production stemming from the reforms, primary public expenditures are projected to decrease from approx. 55 per cent of GDP today to just below 50 per cent of (cyclically adjusted) GDP in 2020. This is a key condition for the objective of structural balance to be met.

Meanwhile, the new initiatives can also ensure that the projected structural balance is relatively close to balance looking ahead to 2050, *cf. Figure 1.9*. The significant pressure on the government balance coming from demographic changes and declining oil revenues in this period will thus be counteracted. The initiatives can also ensure that the projected government gross debt (EMU debt) is stabilized at around 40-45 per cent of GDP and that net public debt is kept close to zero, *cf. Figure 1.11 and 1.12*. In 2030 public debt is almost 15 per cent of GDP lower than in a scenario without reforms.

Figure 1.9
Structural balance in absence of initiatives and in the 2020-scenario with reforms etc.

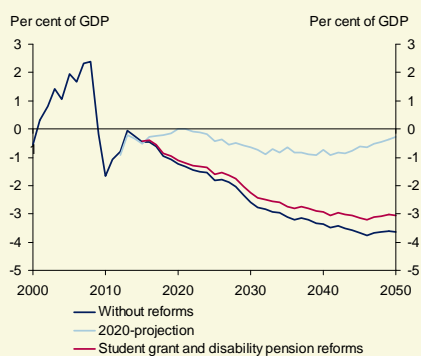


Figure 1.11
EMU-debt, 2000-2050

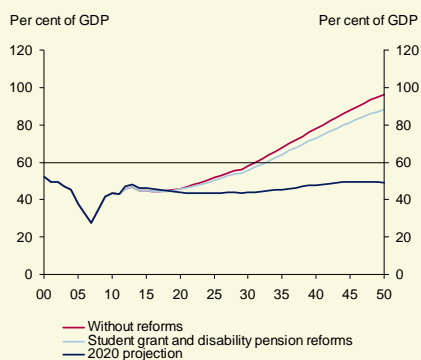


Figure 1.10
Employment effects of the reforms (unsubsidized employment)

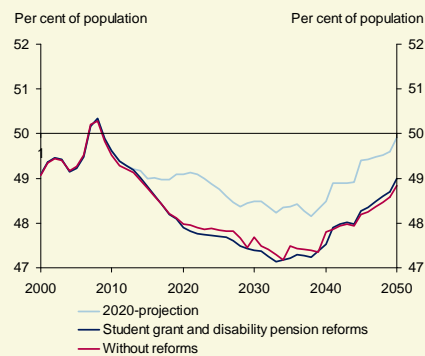
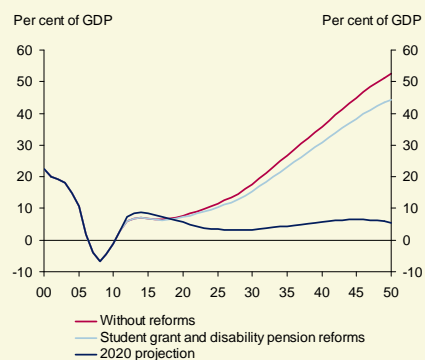


Figure 1.12
Net public debt, 2000-2050



Note: Figure 1.10 shows ordinary and unsubsidized employment, i.e. employment excl. subsidized jobs as for example flex job, unemployed in job training schemes etc.

Source: Own calculations.

The improvement in public finances reflects that the reforms increase the share of the population in employment. The retirement reform itself can increase employment by approximately 70,000 persons in 2020. Additionally, a contribution of nearly 10,000 persons is estimated to come from the proposed study grant reform and reform of disability pension and flex jobs.

Including the three reforms, the share of unsubsidised employment is kept around 49 per cent of the population towards 2040, cf. *Figure 1.10*. This is approx. ½ percentage point less than the average for the years 2000 to 2010 – and significantly lower than in 2008 when the previous upturn peaked and demographic conditions were more favourable. In the scenario without new initiatives the share of non-subsidized employment declines to approx. 47 ½ per cent of the population in 2040, which is the lowest level since the 1960's.

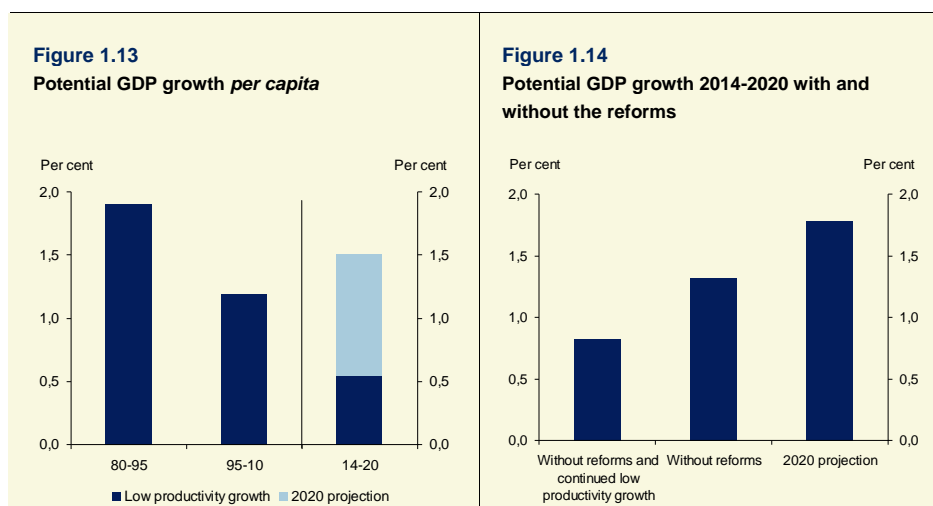
1.4 The reforms support the growth potential of the Danish economy

In the past decade, growth in GDP per capita has been relatively muted. In particular, this reflects lower productivity growth than in previous decades and lower than in comparable countries.

If steps are not taken to enhance labour supply or productivity growth does not increase, the outlook is for continued low potential growth up to and beyond 2020. This is because demographic trends will tend to reduce labour supply, while labour productivity growth has declined to a low level during the past 15 years. Hence, potential growth until 2020 is therefore estimated at just below 1 percent per year if the proposed reforms are not enacted and productivity growth is not increased. The rate of growth in incomes and prosperity will thus be lower towards 2020 than in the previous 30 years. With the reforms of retirement rules as well as disability pensions and student grants, potential growth is estimated to increase by approx. ½ percent pro anno on average until 2020.

In the 2020-projection, it is assumed that the annual trend growth in labour productivity in the private non-agricultural industries is increased to 1.5 percent per year. This is approx. 0.5 percentage points more than the average since 1995 and is roughly equivalent to average productivity growth over the period 1990-2012.

If the assumed increase in productivity growth is realized, potential growth will be increased to just below 2 percent per year in the years 2014-20, *cf. figure 1.14*. This means that production and incomes can increase by almost 2 percent per year without growth being halted by unsustainable wage and price increases and pressures on competitiveness.



Source: Own calculations.

Consequently, growth in GDP per capita will roughly reach the same level as in the past 30 years. Overall it is estimated that the reforms of retirement, student grants and disability retirement etc. can increase GDP by about 3 percent in 2020. As mentioned, the retirement reform alone is estimated to increase employment by approx. 70,000 persons in 2020. On the other hand, the workforce will be reduced by the equivalent of some 65,000 full-time workers due to the shift in demographics (of which some 15,000 is a product of reduced average working hours). Part of this demographic decline is, however, expected to be offset by tax and labour market reforms already undertaken in recent years.

With the reforms and moderate growth in public consumption (as laid out in the "Reform Agenda 2020") the growth opportunities in the private sector will be significantly enhanced.

Overall, private employment can potentially increase by approx. 125,000 persons in 2020, although demographic factors reduce the workforce. In addition to the assumed normalization of the economic cycle until 2015, the proposed reforms create scope for an increase of almost 60,000 jobs in the private sector (structurally) - i.e. apart from the contribution from the normalization of the business cycle (which in isolation accounts for some 67,000 out of the nearly 125,000 private jobs). This comes on top of the estimated increase in private structural employment of approx. 110,000 persons from 2001 to 2010 (6 percent). Higher private employment strengthens the financing basis for government spending².

If the proposed reforms are not implemented, the bulk of the reduction in private employment during the economic downturn will be of a permanent nature.

The proposed reforms should be seen as a continuation of the initiatives undertaken in recent years to enhance growth, *cf. Box 1.2*. The tax agreements in 2004, 2007 and 2009 has reduced the average marginal tax rate for full-time workers by just over 7 percentage points, while the employment tax credit strengthens incentives for employment.

² In total, the private employment can rise by approx. 125,000 persons from 2010 to 2020, of which approx. 67,000 people is a product of business cycle normalization. In addition, the reforms increase private employment by another 82,000 workers from which can be subtracted an assumed increase in public employment of approx. 9,000 persons. Already implemented reforms increase private employment by approx. 25,000 people. Meanwhile, demographics are estimated to reduce private sector employment by approx. 42,000 persons.

Box 1.2**Central growth initiatives since 2001**

- **Investing in knowledge.** An additional 10 bill. DKK is allocated to investments in research, education, innovation and entrepreneurship and is phased in from 2007 to 2012. (Welfare- and Globalization Agreement in 2006)
- **Lower marginal income tax.** The marginal income tax has been reduced by 5-10 percentage points for virtually all wage earners, thereby strengthening incentives to work, to take an education or otherwise make an extra effort.
- **Retirement reform.** The Welfare Agreement in 2006 included an ambitious reform of the retirement system which increases labour supply and employment by up to 10 percent in 2040.
- **Labor market reforms.** A series of labour market reforms, including limiting the duration of unemployment benefits from four to two years ("Fiscal Consolidation Agreement in 2010"), with a view to enhance job search and improve incentives to work.
- **Lower corporate tax rate.** The corporate tax rate has been reduced from 30 to 25 percent to spur investments, increase productivity and create a more robust tax base in a globalized world.
- **Administrative burdens.** The administrative burden on companies has been reduced by almost 25 percent since 2001.
- **Business package.** A targeted effort to support growth and exports by improving financing opportunities etc. for small and medium sized enterprises.
- **Growth package (in the 2011 budget).** Relaxation of company tax treatment of portfolio assets, reform of the researcher/expert tax scheme to better attract highly skilled workers from abroad, relaxing VAT on hotel services, agreement with pension firms to strengthen the venture capital market by up to 10 billion. DKK, and other initiatives.
- **Competition package.** Aims to increase competition in construction, retail and the service industry and for public projects.

The tax reforms – net of tax increases in the Fiscal Consolidation Agreement – are estimated to have increased labour supply by 35,000 persons. Especially the 2009 tax reform contributes to increased labour supply. The reform is estimated to increase GDP by approx. 1.5 percent in the longer run.

Also, the corporate tax rate has been reduced from 30 percent to 25 percent in 2001, financed in particular by tightening rules on depreciation allowances and caps on interest deductions. In the areas of personal and corporate taxes, the reforms cover the majority of the recommendations made by the Tax Commission and the Welfare Commission.

In the labour market area, the bulk of the recommendations made by the Labour Market Commission and Welfare Commission have also been implemented.

The reform of the unemployment benefit in 2010 (shortening the benefit period from four to two years and tightening the requirement for regaining benefit entitlement) is estimated to raise labour supply by approx. 13,000 persons and counteracts long-term unemployment.

In addition, labour market initiatives include tighter availability requirements, earlier activation of unemployed persons, harmonization of unemployment benefits rules for over 55-year-olds,

changes in supplementary benefit, ceilings on cash benefits, “introductory benefit” and the “450-hour rule” for accrual of cash benefit entitlement.

In addition, the Welfare Agreement of 2006 raised the statutory age for early retirement and old age pension by 2 years beginning from 2019 and indexing these ages to longevity going forward. On the basis of the current forecasts of longevity the reform is expected to increase employment by approx. 200,000 persons in 2040.

Moreover, growth conditions are enhanced by the Globalization Agreement, including the objectives that all young people complete at least secondary education (at least 95 per cent.) and that at least 50 percent complete tertiary education. The number of students has increased significantly, partly as a consequence of initiatives taken since 2006.

Public research expenditure has been increased from 0.7 to about 1 percent of GDP (an increase of one third) phased in from 2006 to 2010. The latest political agreement on the use of the globalization reserve for research and development includes in particular targeted investments in research on energy, health and foodstuffs. The agreement also contains a strengthening of a number of existing initiatives in innovation and knowledge sharing.

Infrastructure is being improved, notably through the funds allocated in the “infrastructure fund” established in 2009. The fund will finance a significant expansion or improvement of road and rail networks, and is to be seen in conjunction with a number of other large infrastructure projects such as the combined rail and road connection to Germany over the Fehmarn Belt, the Copenhagen Metro, light rail projects in major cities etc.

Business legislation has been modernized, and the administrative burdens on businesses have been eased by almost 25 percent since 2001. The venture capital market has been strengthened, inter alia through agreement with the pension funds to invest up to 10 billion DKK in business start-ups and small and medium sized enterprises. Further, a “Competition Package” has been agreed, which aims to promote competition in the retail sector, construction and other services as well as in the public sector.

The reforms and growth initiatives will help to raise productivity in the coming years, but further initiatives are required. Further action will be taken in the spring to support growth and the creation of new jobs.

1.5 Expenditure control and targets for public expenditures

Primary public expenditures amounted to approx. 55 per cent of GDP in 2010, which is higher than in all other OECD countries. Expenditures have risen markedly relative to cyclically adjusted GDP, which may be taken as a measure of the underlying development in the tax base. The increase in primary spending reflects, in particular, fiscal easing and the fact that the agreements with municipalities and regions concerning their expenditures have not been met.

In the 2020 projection total primary spending is reduced from approx. 55 per cent of GDP in 2010 to just below 50 per cent of (cyclically adjusted) GDP in 2020, *cf. figure 1.15 and 1.16*. The proposed reforms of early retirement, student grants and disability pensions lower the spending share by a good 2 percentage points - through higher employment and production, and because entitlement costs are reduced. In addition, the assumed normalization of the economic cycle to 2015 lowers the expenditure share through higher GDP and lower outlays for, in particular, unemployment benefits and activation schemes.

On the basis of the overall projection, it is a central condition of the plan that primary expenditures are reduced to less than 50 per cent of (cyclically adjusted) GDP by 2020.

Figure 1.15
Primary expenditure in the i 2020-projection, 1980-2020

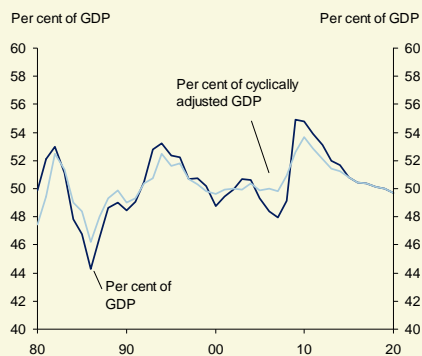
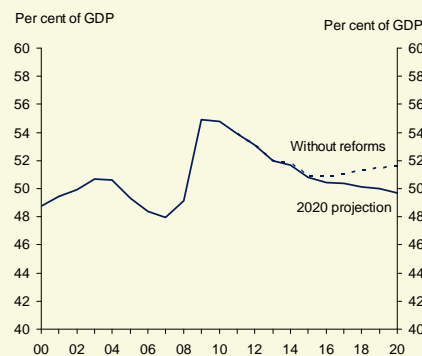


Figure 1.16
Primary expenditure in the i 2020-projection and in the basic projection excl. initiatives, 2000-2020



Note: An adjustment for repayment of paid-up retirement contributions in 2012, following the proposal of a retirement reform has been made.

Source: Own calculations.

Public consumption – i.e. public service spending on, inter alia, health and elderly care, education, social institutions, as well as defense, police and administration etc. - constitute about half of total primary expenditure.

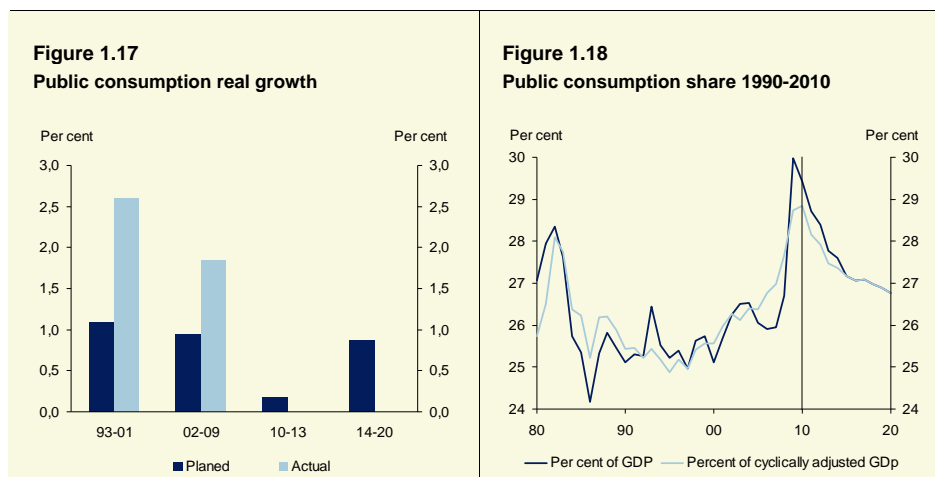
With the reform proposals put forth, real public consumption growth can make up about 0.8 per cent in the years from 2014 to 2020, while maintaining the tax freeze. This corresponds to an annual increase in resources allocated to services of approx. 4 billion DKK. Government consumption growth in these years can thus be roughly equivalent to what has been planned for previously, including in the 2010-plan from 2001. However, the estimated demographic pressures for additional service expenditures is slightly larger up to 2020 than from 2000 to 2010.

With the assumed real growth, public consumption is estimated to decline from almost 29 per cent of cyclically adjusted GDP in 2010 to 27 per cent in 2020. That remains a higher level of spending than in any year from 1984 to 2007, *cf. figure 1.18*. Against this background it is an important benchmark that government spending can make up no more than 27 per cent of cyclically adjusted GDP in 2020 when the reforms put forward are implemented³.

The share of consumption spending relative to GDP depends in part on production growth - and thus on the assumed productivity growth in the private sector. In the projection an average productivity growth of approx. 1½ per cent is assumed during the period. This is higher than during the years since 1995. If the higher productivity growth is not achieved, growth in public expenditure has to be lower to ensure balance in 2020. To a large extent, this is ensured by the automatic adjustment of income transfers and because public sector wages follow developments in private wages. But it typically also requires a slightly lower growth of real public consumption.

During the recent decades there has been a systematic tendency for public consumption to grow more than planned, mainly because municipalities and regions /counties have spent more money than agreed, and because this additional consumption has not been redressed subsequently. Consequently, since 2000, real public consumption growth has been approx. twice as large as planned. During the 1990s the slippage was a bit larger, *cf. figure 1.17*. Hence, since 1992 there has been a total increase in government consumption expenditure of some 90 billion DKK in real terms (approx. 20 per cent of expenditures) that was not planned in advance.

³ The guideline level for consumption expenditure in 2020 is higher than the benchmark in the 2015-plan of around 26 ½ per cent of (cyclically adjusted) GDP by 2015. The higher expenditure share should be seen in conjunction with demographic pressures leading to increased demand for public services from 2015 to 2020.



Source: Statistics Denmark and own calculations.

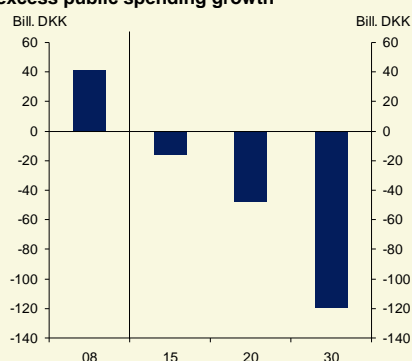
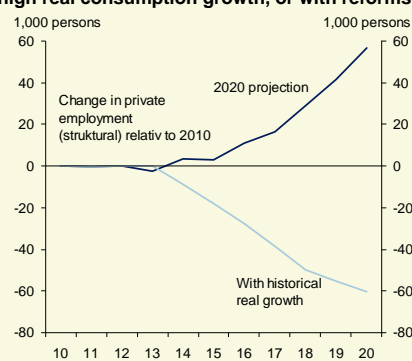
Hence, it is a fundamental requirement that public expenditure growth is reduced. First and foremost it requires the implementation of mechanisms to ensure that spending follows the planned path, *cf. box 1.3*. The average annual public consumption expenditure slippage since 1992 has averaged around 5 billion DKK per year. Thus, the average public consumption expenditure slippage in only 2-3 years corresponds to the impact of a full abolishment of the voluntary early retirement scheme. In this light, there are no policy initiatives that can be put in place of a reduction in expenditure growth. At the same time, experience shows that it is difficult to reduce public spending once it has increased - even when the increase had not been planned beforehand.

Box 1.3**Government consumption can not continue to grow more than planned**

If public consumption is growing about twice as fast as the planned rate of approx. 0.8 per cent from 2014 to 2020, it corresponds to an annual growth of approx. 1.6 per cent. Thus, the structural fiscal deficit would increase to slightly above 2½ per cent of GDP by 2020 and to 6½ per cent of GDP by 2030, *cf. figure a*. The reforms of retirement etc. are not included in this projection.

There is a risk that continued slippage in public consumption, which is not offset by other savings, will lead to an even more unsustainable path, since high deficits and debt can lead to higher interest rates, lower growth and increase government interest payments. Thus, the calculation shows only the direct effects of continued high growth in public consumption assuming the recovery can be sustained and cyclical conditions are back to normal by 2015. Further, the projection assumes that structural unemployment remains at 3½ per cent of the workforce.

If reforms are not carried out, and growth in public consumption and public sector employment continue as in the past 30 years, private structural employment may decline by about 60,000 persons through 2020, *cf. figure b*. This reflects declining labour supply and a gradual crowding out of private employment as higher public employment weakens private companies' recruiting opportunities.

Figure a**Public balance up to 2030 with continued excess public spending growth****Figure b****Structural private employment with continued high real consumption growth, or with reforms**

Note.: In the scenario with continued expenditure slippage in public consumption, public consumption is assumed to grow by 1.6 per cent annually from 2014 onwards.

Source: Own calculations.

The moderate growth in public service spending up to 2020 should be prioritized to core welfare areas such as, in particular, health, education and research etc. At the same time, continued efforts to ensure greater efficiency in the public sector can free up resources to services directly aimed at citizens in municipalities and regions.

Among others things, DKK 2 billion will be re-prioritized annually from 2015 onwards from defence spending to the core welfare areas. The DKK 2 billion that are freed up through efficiency savings and better resource utilization in the armed forces, are equivalent to approx.

10 per cent of total defence spending in 2015. As part of the current political agreement on defence a series of assessments have been initiated designed to promote more efficient defence spending. Other European countries have also implemented or are implementing adjustments on defence spending, such as Sweden, France and Britain.

Furthermore, efforts to raise efficiency and free up resources for frontline public services in municipalities as well as regions continue. Efficiency gains and better resource utilization must be backed by concrete initiatives stretching across different municipalities and regions, including through strengthened digitalization, better and more cost-effective public procurement, less red tape in rules and procedures and increased competition exposure.

Enhanced efficiency and productivity - including higher quality - of public task performance implies higher economic growth, even if this may not be recorded in the national accounts figures for GDP etc. Efficiency improvements and better use of resources means specifically that the level of service can be strengthened without using more resources. However, it is only when the productivity gains lead to actual cost savings, that efficiency improvements in some areas can increase resources to other areas.

Public investment was increased substantially in 2009 and 2010 and is assumed to normalize from a historic high in 2011 to 1¾ per cent of GDP in 2020. To support growth opportunities and the general provision of public services, concrete decisions have been made with respect to investments in hospitals, day-care centres, schools, roads and railways.

Expenditure policy is planned in a scenario, which only includes agreed initiatives

In the 2010- and 2015-plans the priorities in expenditure and tax policy were aligned with the fiscal targets in the plans, but the new funding was mainly based on reform requirements etc. which had not yet been adopted or specified in the plans. This approach was feasible as long as Denmark had large fiscal surpluses and the task was to prepare for a longer-term period of demographic pressures on public finances and declining tax revenues, among other things from lower North Sea production.

In the present situation, this approach is not credible. The public deficit is estimated to approx. DKK 70 billion in 2011. Denmark is in EU's procedure for excessive deficit and the fiscal challenges have increased after the financial crisis. Meanwhile pressure on public finances from demographics etc. has begun to emerge.

The reform potential in the labour market is also significantly less than at the start of the millennium. Most of the reforms proposed by the Welfare Commission, the Tax Commission and the Labour Market Commission are implemented in various forms. Concrete proposals have been put forth in the areas where there is still considerable potential. This is particularly within the retirement system, but also for study grants and disability pension and flex jobs.

The potential to strengthen public finances through higher employment must also be seen in light of the fact that the registered unemployment rate is already assumed to be 3½ per cent of the workforce on average over the business cycle in the decades ahead.

Against this background, the starting point will now be that fiscal policy shall be planned on the basis of a **baseline scenario**, which only includes new financing initiatives that have found majority political support. In the *baseline scenario* it is specifically assumed:

- That the growth in public consumption follows the Fiscal Consolidation Agreement until 2013, after which the growth rate is set so that there is (at least) structural fiscal balance in 2020.
- The effects of financing initiatives that have not yet found a political majority are not included in the baseline scenario.

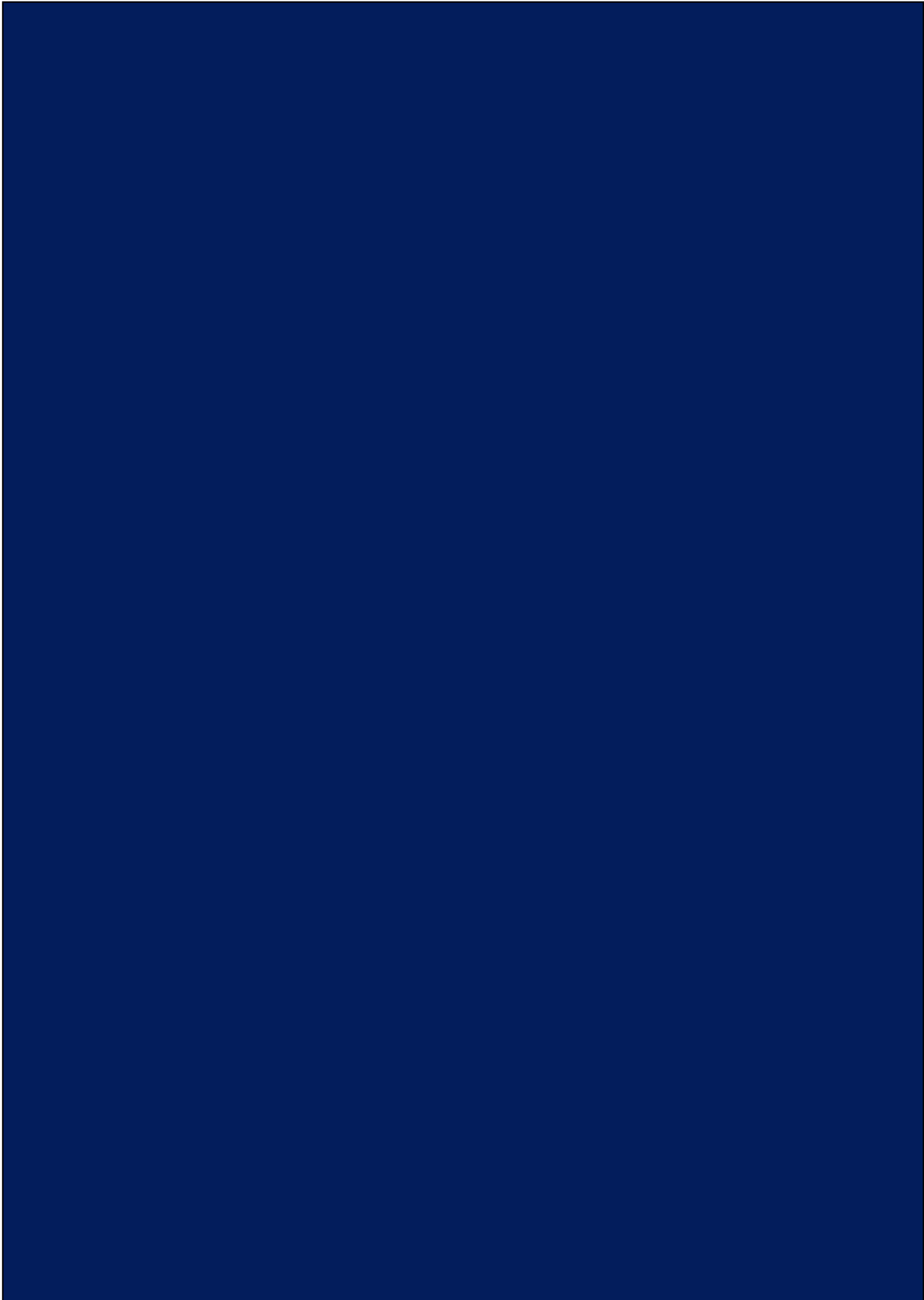
Hence, the baseline scenario requires that real public consumption grows by no more than 0.1 per cent per year over the period 2014-2020. This corresponds to approx. ½ billion and is less than 1/10 of the real growth has been realized since 2000. In this scenario - which is aligned with the objective of securing fiscal balance in 2020 – public consumption amounts to around 26 per cent of cyclically-adjusted GDP in 2020. A rate of public consumption growth of only 0.1 per cent annually up to 2020 will be difficult to realize.

By implementing the reforms of retirement, study grants and disability pension and flex-jobs, public finances will be improved. This creates room for increased expenditure on for example education and health care. This allows, as mentioned, for the growth rate in public consumption to increase to 0.8 per cent annually. This corresponds to just over DKK 4 billion annually.

Planned spending path should be underpinned by binding ceilings and better control

In the both the 2010 - and 2015-plan it was a key requirement that the growth rate in government consumption should be reduced compared to previous decades. But the plans did not adequately follow up this recognition by specific instruments that could ensure that the planned expenditure growth and guidelines were met. For many years, public spending has grown more than planned.

In continuation of the tighter control mechanisms introduced with the Fiscal Consolidation Agreement, there is still a need to strengthen the framework for controlling public spending. The government's proposal for a new expenditure framework is described in "Improved expenditure governance – expenditure ceilings for the state, municipalities and regions" (April 2011) and in *Chapter 6*.



2. The macroeconomic scenario towards 2020

2.1. Introduction

The economic scenario up to 2012 is based on the forecast in the *Economic Survey, December 2010* with some adjustments in light of subsequent data, including the preliminary national accounts for 2010. In addition, repayments of early retirement contributions in 2012, as a result of the proposed retirement reform, and their estimated short-term implications have also been included.

The stylized projection for the period 2013-20 assumes a normalisation of the economic cycle towards 2015, while structural fiscal balance by 2020 is reached through the reforms of the retirement system, disability pension, flex jobs and student grants, and including the priorities for public consumption growth and taxes, including the tax freeze to 2020.

2.2. Assumptions on the international economy and financial conditions

The forecast to 2012 in the *Economic Survey, December 2010*, is based on international growth becoming more self-sustained even as the wide-ranging fiscal and monetary easing and financial support measures during the crisis begin to be withdrawn.

It is anticipated that growth in foreign GDP (weighted by the importance for the exports of Danish manufacturing) will be 2 per cent in both 2011 and 2012, *cf. table 2.1*. Up to 2015 a continued recovery in economic activity abroad is assumed with a gradual reduction of output and employment gaps and an average annual GDP growth of almost 3 per cent based on the OECD's medium-term projection in the *Economic Outlook 88*.

Table 2.1
Assumptions on international economic growth, interest rates and oil prices

	2009	2010	2011	2012	2013-15	2016-20
Annual growth, per cent						
Real GDP, main trading partners	-0.4	2.4	2.1	2.2	2.9	2.2
Real market growth, manufactures	-10.7	6.9	5.9	6.3	7.1	5.3
Oil price (Brent), USD per barrel, 2010 prices	62	80	106	100	96	108
Dollar exchange rate, DKK per USD	5.4	5.6	5.4	5.4	5.5	5.6
Interest rate 10-year Danish treasury bonds, per cent	3.6	2.9	3.4	4.0	4.5	5.3

Note: The oil price and the interest rate in 2013-15 and 2016-20 respectively indicate the last year in the period.

Source: Reuter, Ecwin, OECD and own calculations.

The assumptions about external conditions are quite close to the Commission's preliminary spring forecast and the common external assumptions that member countries (in particular the euro and ERM II countries) are encouraged to use for their stability and convergence programs, *cf. Chapter 4*.

From 2015 to 2020 it is assumed that international growth will be in line with the estimated potential growth rate. Thus, the trade-weighted GDP growth abroad is expected to be around 2¼ per cent per year on average during this period.

These assumptions imply that market growth for Danish manufacturing exports will be approx. 7 per cent per year in the period 2013-15 and 5¼ per cent in 2015-20 compared with around 6 per cent in 2010-12. The market growth will thus be higher than the estimated growth potential in the Danish economy.

The oil price has risen since late summer 2010 as a result of increased activity in the international economy. In addition the recent unrest in a number of Middle East countries has brought oil prices up to around \$110 per barrel.

It is assumed that oil prices fall slightly from that level this year so that the annual average is \$106 per barrel in 2011 and \$100 per barrel in 2012. Towards 2020 a gradual, moderate increase to \$108 per barrel (constant prices) is assumed. The dollar exchange rate has decreased compared to the December forecast (5.4 DKK per US dollar) and is currently around 5.1 DKK per US dollar. High oil prices tend to dampen growth prospects if driven by geopolitical turmoil or high growth in countries that play a minor role for Danish exports, but high oil prices also strengthen public finances in Denmark.

Interest rates abroad were exceptionally low in 2010, reflecting the very expansionary monetary policy as part of the efforts to stimulate economic activity after the financial crisis. The European Central Bank (and the Danish Central bank) has recently raised the interest

rate and is expected to continue this process during 2011. In the December forecast the yield on a Danish 10 year treasury bonds was expected to rise to 4 per cent in 2012 compared with just 3 per cent in 2010. Currently this rate is approx. 3¼ per cent.

The yield spread to Germany is expected to remain modest. Up to 2020 a gradual increase in the 10 year interest rate to 5¼ per cent is assumed, which reflects the normalisation of monetary policy and is in line with the level in the years around 2000. This implies an overall growth adjusted real interest rate (nominal interest rate minus the growth rate of nominal GDP) in the long run of nearly 2 per cent.

2.3. Recovery of the Danish economy towards 2015

The updated economic outlook implies real GDP growth in both 2011 and 2012 of around 1¾ per cent, *cf. Table 2.2*. In 2010, GDP grew by 2.1 per cent after the sharp decline in 2009 of 5.2 per cent due to the financial crisis and following the strong boom in the years before.

The significant decline in GDP in 2009 caused a large decline in employment, rising unemployment and a widening of the output gap to more than -3 per cent. Based on the increase of GDP in 2010 and the projected moderate growth in 2011-12, the decline in employment is expected to end in 2011, with gross unemployment declining in 2012 to 158,000 people or 5.5 per cent of the workforce and the output gap being reduced to around 2 per cent. Net unemployment (registered unemployment) in 2012 is expected to fall to 107,000 people or 3.7 per cent of the workforce, which is lower than in 2001 at the end of the last boom, and largely at the level of the estimated structural unemployment.

The expected growth in 2011 and 2012 is driven by, among other things, a turnaround in gross fixed investment with real growth of 3-4 per cent per year after the sharp reduction in investments since 2007 and particularly after the financial crisis.

Based on the assumptions on international growth and Danish wage competitiveness, exports are expected to grow by around 4 per cent per year in real terms. The loss of market shares for industrial exports in 2011-12 is expected to be less than in the period 2006-09 because Danish wage increases are expected to be in line with those abroad, after a long period in which higher Danish labour costs led to a weakening of wage competitiveness, *cf. section 2.5*.

Private consumption is estimated to grow by 2¼ per cent in 2011 and 2½ per cent in 2012, reflecting an incipient reduction in the saving ratio, which became historically high in the financial crisis, and the effect of the assumed repayment of VERP contributions and lower contribution payments to VERP in 2012.

On the other hand, real public consumption is assumed, under the Fiscal Consolidation Agreement, to be almost unchanged over the two years together, compared to 2010-levels. Changes in inventories are not expected to make any noticeable contribution to growth after a fairly large increase in 2010 following the large decline in 2009.

Table 2.2
Key figures for the Danish economy 2009-2020

	Short term				Medium term scenario ¹⁾	
	Forecast ²⁾				Recovery	Potential growth
	2009	2010	2011	2012	2013-15	2016-20
Output gap and real growth rates (per cent)						
Output gap (per cent of GVA)	-3.4	-2.1	-1.8	-1.7	0.0 ²⁾	0.0
GVA	-4.7	1.9	1.8	1.8	1.9	1.7
GDP	-5.2	2.1	1.7	1.8	2.1	1.8
Demand, real growth, per cent						
Private consumption	-4.5	2.2	2.2	2.5	2.5	2.3
Public consumption	3.1	1.0	-0.3	0.5	0.4	0.8
Gross fixed capital formation	-14.3	-4.0	4.4	2.7	4.4	3.3
Change in inventories (per cent of GDP)	-2.0	0.9	0.1	0.1	0.0	0.0
Export	-9.7	3.7	3.9	3.9	4.5	4.3
Import	-12.5	2.9	4.4	4.5	5.1	4.8
Labour market and productivity						
Growth in labour force (per cent)	-1.3	-1.5	-0.0	0.1	0.6	0.4
Growth in employment (per cent)	-2.9	-2.1	0.1	0.3	0.7	0.4
Structural unemployment (per cent of labour force)	3.7	3.5	3.4	3.4	3.4	3.4
Registered (net) unemployment	3.4	4.0	3.8	3.7	3.5	3.4
Hourly productivity, entire economy	-1.1	4.0	1.7	1.6	1.2	1.2
Growth in GVA per employed	-1.8	4.1	1.8	1.5	1.2	1.2

1) The medium term scenario in the period 2013-20 is as mentioned the main scenario with balance on public finances in 2020, incl. reforms of disability pension, flex-jobs, student grants and retirement, and the priorities for growth in public consumption and taxes.

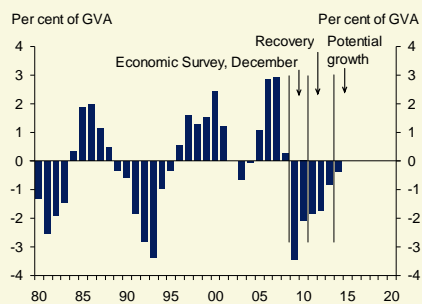
2) The forecast for 2011-12 is based on the *Economic Survey, December 2010*. Adjustments to the forecast have been made in light of new economic statistics, including the preliminary national accounts for 2010. In addition, estimated effects of repayments of VERP contributions in 2012, etc., as a result of the proposed retirement reform, have also been included.

3) Output gap in the last year of the period.

Source: Statistics Denmark and own calculations.

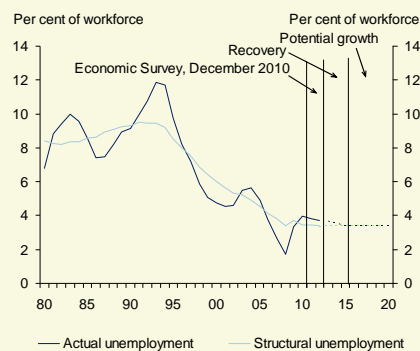
Towards 2015 the ongoing recovery of the economy is assumed to continue. The output gap is further reduced and closed in 2015, and the registered unemployment rate (net unemployment) is assumed to fall to its structural level, estimated at just below 3½ per cent of the workforce, or about 100,000 persons, cf. figure 2.1 and 2.2.

Figure 2.1
Output gap, 1980-2015



Source: Own calculations.

Figure 2.2
Actual and structural unemployment



Note: Net unemployment.

Source: Statistics Denmark and own calculations.

Demand growth in 2013-15 is in part driven by growth in gross fixed investment at an average rate of 4½ per cent per year, against the background of a historically low investment ratio in 2010.

Similarly, the private sector savings rate is expected to decrease to the same level as in 2004 prior to the last upswing. Private consumption growth is affected by the reform of the pension system, which leads to greater life incomes and probably less need for savings for retirement purposes, and by lower VERP contributions and repayment of previously paid VERP contributions. Reimbursements of the earlier paid contributions are assumed to occur in 2012. The payments have a "one-off" effect and are not included in the structural balance. It is assumed that half of the amount repaid will be paid into pension schemes. Overall, a relatively high growth in private consumption in 2013-15 is expected, averaging 2½ per cent per year, after the big drop in consumer spending during the downturn. In the period 1990-2015, average annual real growth in private consumption then equals 1.8 per cent.

Demand is particularly fuelled by exports, increasing by an average of 4½ per cent per year in 2013-15. This corresponds to the average annual export growth rate since 1980 and implies a continued loss of market share for industrial exports. Exports of oil and gas will be reduced due to declining production in the North Sea.

Real public consumption is assumed, according to the agreed priorities, to increase by ¾ per cent per year in 2014-15.

The assumptions on the evolution of demand and imports imply that GDP may grow by an average of 2.1 per cent per year in the period 2013-15. This is 0.6 percentage points more than the underlying growth potential, reflecting the assumed gradual normalisation of the business cycle.

The labour force is assumed to increase by 0.6 per cent per year in 2013-15. This largely reflects cyclical factors as the labour force in 2012 is estimated to be lower than its structural level. In addition, the effects of the proposed retirement reforms, etc. that work gradually from 2014 are included. Employment is expected to rise by 0.7 per cent per year on average. By comparison, during the upswing from 1994 to 2001 employment increased by 1.3 per cent per year and from 2004 to 2008 by 1.9 per cent per year.

Relatively large productivity increases are projected for 2010-12 following an outright productivity decline at the end of the previous boom and, in particular, during the escalation of the global crisis. From 2012, a structural increase in hourly productivity in the non-agricultural business sector of 1.5 per cent per year is assumed. It is more than in the past 15 years, but roughly in line with the average annual increase from 1990 to 2012 of 1.4 per cent.

The assumed recovery until 2015, closing the output and unemployment gaps, will be conditional on the absence of any major cyclical downturns abroad. That implies for instance no further fundamental instability caused by high oil prices or renewed financial turmoil in light of the debt problems in many countries and by global imbalances. It is also an important prerequisite that the structural unemployment rate can be maintained around 3½ per cent of the workforce, and that the phasing out of the expansionary fiscal measures, etc. in many countries and the expected increase in interest rates progress gradually and aligned with increasing momentum in the international economy.

2.4. Growth and employment towards 2020

In the period 2015 to 2020 real GDP growth corresponds to the potential growth rate, as the unemployment rate is assumed to correspond to the estimated structural level, and the output gap is assumed to be zero during this period. The potential growth rate is estimated on the basis of trends in the number of people in the workforce, structural unemployment, productivity, and working hours.

In the period 1991-2007, the production potential is estimated to have expanded by 2.0 per cent per year (measured by GDP), *cf. figure 2.1*. The global crisis is estimated to have reduced the production potential so that the average potential growth rate in the years 2008-2009 is approx. 0 measured by GDP (and approx. ½ per cent per year as measured by gross value-added, GVA).

Growth in potential output is estimated to increase to approx. 1.4 per cent per year in 2010-2015 and to approx. 1.8 per cent per year in 2016-20, when the proposed reforms of retirement, disability pension and students grants etc. are implemented. These reforms are estimated to raise the growth potential by approx. ½ per cent per year from 2014 to 2020. Hourly productivity growth in non-agricultural business sector of 1.5 per cent per year implies, along with the assumptions for other parts of the economy, that overall hourly productivity in the economy increases by approx. 1.2 per cent per year. National accounts do not in general record productivity improvements in the public sector, implying productivity growth in that sector of around zero. Productivity growth in the private sector corresponds to approx. 1.5 per cent per year.

Table 2.3
Contribution to growth in potential production and growth in GDP (real)

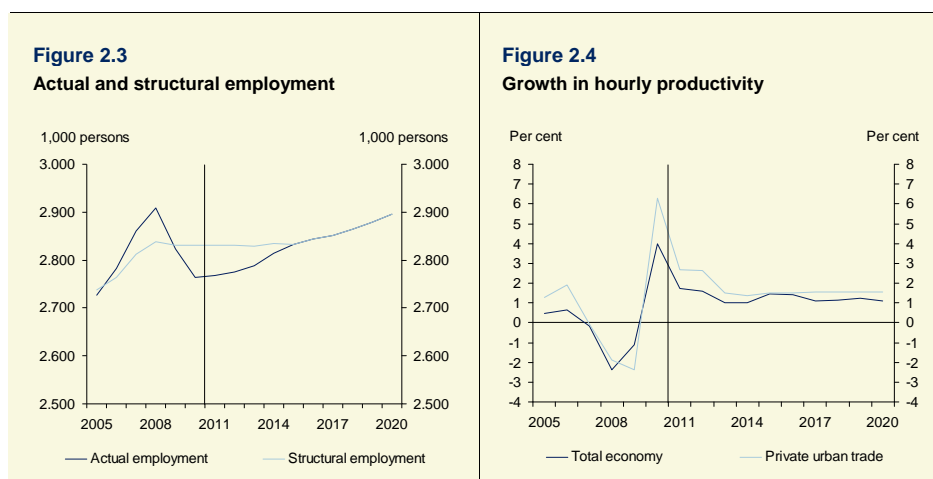
	1991-07	2008-09	2010-12	2013-15	2016-20
Average yearly growth, per cent					
Potential production (GDP)	2.0	0.0	1.2	1.4	1.8
Contribution from:					
- Hourly productivity (structural)	1.3	0.3	1.3	1.1	1.2
- Structural unemployment	0.3	0.1	0.1	0.0	0.0
- Structural work force	0.1	0.3 ¹	-0.1	0.0	0.4
- Working hours (structural)	0.1	-0.1	-0.1	0.0	0.1
- Net taxes	0.1	-0.5	0.1	0.2	0.1
Cyclical contribution	0.2	-3.2	0.6	0.6	0.0
Actual GDP	2.2	-3.2	1.9	2.1	1.8

Note: There is some uncertainty in the forecast of potential growth in sub periods, including the contributions from the individual components.

- 1) The development in the structural workforce includes contributions from changes in the population (incl. net immigration) and changes in numbers of border commuters (included in employment in the national account). In 2008-09, each of these two components added around 0.2 percentage points to potential growth.

Source: Own calculations and Statistics Denmark.

The number of persons in the labour force and in employment is increasing – despite the negative demographic contribution as a result of aging – by an average of 0.4 per cent per year in the period 2016-20, *cf. figure 2.3*. This is due to the proposed retirement reforms, etc., *cf. table 2.4*. This implies that actual employment will not reach the same level as in 2008 before 2020. As previously mentioned hourly productivity in the non-agricultural business sector rises by 1.5 per cent per year, *cf. figure 2.4*.



Source: Statistics Denmark and own calculations.

On this basis GDP is assumed to expand by 1.8 per cent per year from 2015 to 2020. This is slightly less than the growth rate from 2012 to 2015 of just above 2 per cent, when the assumed normalisation of the business cycle pulls up economic growth, *cf. Table 2.4*. It is also slightly less than the growth rate in the period 1980-2006 of 2.1 per cent per year on average. The assumed potential growth rate in 2015-20 is quite high in light of the aging population and the relatively low productivity growth. It is a result mainly of the proposed retirement reforms. Without reforms – and without the assumed increase in productivity growth relative to trend since 1995 – potential GDP growth during the period will only be just below 1 per cent per year.

The assumed relative growth contributions from demand components from 2015 to 2020 resemble the ones described for the period from 2012 to 2015. The average annual growth rate in private consumption and gross fixed investment is respectively 2¼ and 3¼ per cent, assuming a continued normalisation of the investment ratio and a moderate decrease in private sector savings ratio. Export growth is assumed to be 4¼ per cent per year.

Real growth in public consumption is 0.8 per cent per year from 2015 to 2020 according to the priorities included in the scenario. Primary public spending declines overall from approx. 55 per cent of GDP in 2010 to just below 50 per cent of GDP in 2020. Public consumption as a share of cyclically adjusted GDP is reduced from almost 29 per cent in 2010 to just below 27 per cent in 2020.

From 2010 to 2020 demographic trends are estimated to reduce labour supply by approx. 66,000 persons incl. a contribution from the decrease in working time due to changes in the composition of the workforce, *cf. table 1A.4*. This demographic drain on the workforce is partly offset by the reforms already implemented, including among other the tax reform in the Spring Package 2.0 and the reform of the unemployment benefit system. In total, the contribution of the reforms already adopted is estimated to correspond to approx. 43,000 persons by 2020.

Table 2.4
Contribution to changes in labour supply and employment 2010-20

	Changes in people	Work time changes	Total
In 1.000 persons (incl. contribution from changes in working time)			
Demographic contribution (age, gender, country of origin)	-42	-24	-66
Estimated contribution from conducted reforms ¹⁾	23	20	43
Contribution from suggested reforms of early retirement, disability pension and student grants and loans ²⁾	82	7	89
Other (net) ³⁾	2	-8	-6
Labour supply	65	-4	61
Cyclical contribution	67	8	75
Actual change in employment	132	3	136
- Contribution from changes in unemployment	16	-	-
- Contribution from changes in the work force	120	-	-
Memo items			
Population aged 18-64 years	-22		
Total population	154		

Note: Effects on work time is converted to people with average working time.

- 1) Incl. reform of the benefit system, the Fiscal Consolidation Agreement, agreements on taxes in 2007 and 2009, and the increase in the age threshold for receiving VERP in 2019 and 2020 agreed in the Welfare Agreement (2006).
- 2) The increase in working hours as a result of the reforms can be attributed to the increase in the retirement age, which implies that some people aged 65 are employed under normal conditions rather than being employed pensioners with few working hours.
- 3) Incl. effects of increased residence time of immigrants, rising educational attainment, educational objectives in the Welfare and Globalisation Agreements, incl. drain on the workforce from more students, border workers, and projections of recipients of disability pension and VERP in proportion to the demographic trend.

Source: Statistics Denmark, DREAM and own calculations.

In addition, there is the impact from the proposed reforms of retirement systems, disability pension and student grants. Altogether, these reforms are estimated to increase labour supply by approx. 89,000 full-time persons, including secondary effects which will raise the average working hours a little for certain groups. Thus, an overall increase in labour supply from 2010 to 2020 of approx. 61,000 full-time persons can be realised.

At the same time the population is growing by approx. 150,000 people. Thus, the structural employment constitutes a roughly constant proportion of the total population from 2010 to 2020 (approximately 51 per cent).

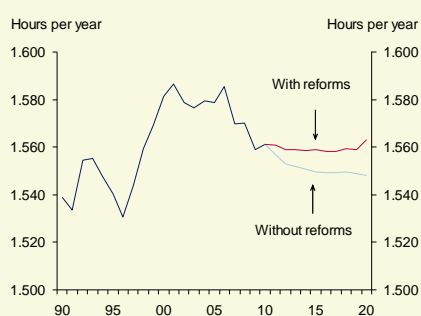
The assumed normalisation of the business cycle is also estimated to contribute to an increase in employment (including a contribution from working hours) equivalent to 75,000 persons, as employment in 2010 is estimated to be about 2 per cent lower than the structural level. Total employment is assumed to increase by approx. 132,000 persons.

In recent years average working hours have declined, partly because of the recession following the financial crisis. Up to 2020 a small increase in average hours worked is assumed, *cf. figure 2.5*. The projection should be viewed in light of changes in workforce composition by age and gender, etc. which is estimated to reduce the average hours worked by around $\frac{3}{4}$ per cent, equivalent to approx. 25,000 persons.

The reduction of hours worked caused by demographic trends, etc. is counteracted by the reforms undertaken in recent years. The Tax Agreement 2007, the action plan against sickness absence and the Job Plan from 2008 (which among other things changed the rules for supplementary unemployment benefits) and the tax reform of 2009 are estimated to increase average working hours by approx. 1.2 per cent from 2008 to 2020, *cf. table 2.5*. Tax elements of the Fiscal Consolidation Agreement – in particular the suspension of the adjustment of tax thresholds in the year 2011-13 – reduce average working hours by approx. 0.1 per cent. These estimates should be viewed in light of the possible underlying downward pressure on working hours, as, for instance, indicated by a majority of employees who wishes to work shorter and not longer hours.

The proposed reforms of the disability pension, flex-jobs and the retirement system are estimated to imply a small positive contribution to average working hours, mainly because average working hours are assumed to increase for people aged 65, when the statutory retirement age, according to the proposed reforms of the retirement system, is raised to 66 years in 2020.

Figur 2.5
Average working hours



Source: Statistics Denmark and own calculations.

Table 2.5
Contribution from reforms to changes in the average working time from 2008 to 2020

Per cent	2008-20	2010-20
Tax agreement 2007	0.3	0.1
Job plan etc., 2008	0.2	0.0
Spring Package 2.0	0.7	0.7
Tax in the Fiscal Consolidation agreement	-0.1	-0.1
Reform proposals (VERP, disability pension, flex-jobs and student grants)	0.1	0.1
Contribution from reforms in total	1.2	0.9

Source: Own calculations.

2.5. Wages and prices

In 2010, hourly wage inflation decreased to just above 2 per cent – compared to 4½ per cent in 2008 – due to the sharp downturn following the financial crisis, cf. table 2.6. Wage inflation has also been reduced abroad and the increase in wages in the Danish manufacturing sector in 2010 was still slightly higher than the average abroad, cf. figure 2.6.

Table 2.6
Price indices and deflators

	2009	2010	2011	2012	2013-15	2015-20
Annual growth, per cent						
Consumer price deflator	1.3	2.6	2.4	1.4	1.9	1.8
Consumer price index	1.3	2.3	2.4	1.4	2.2	1.8
HICP ¹⁾	1.1	2.2	2.6	1.4	2.3	1.9
GDP-deflator	0.4	3.3	1.5	1.7	2.2	2.0
Hourly wages, private sector (DA)	3.0	2.1	2.4	2.7	2.9	3.3
Wage costs per employee ²⁾	2.7	2.4	2.6	2.8	2.9	3.3
Euro area						
HICP ¹⁾	1.0	2.0	2.1	2.2
Wage costs per employee ²⁾	1.8	1.8	1.8	2.1

1) The EU harmonised consumer price index.

2) Whole economy (based on the national accounts).

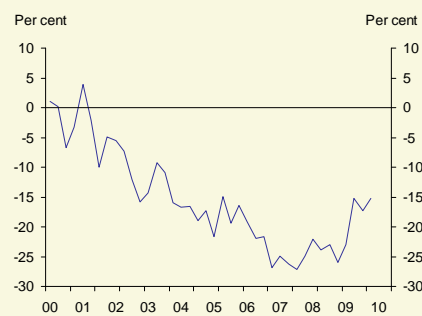
Source: Statistics Denmark, Eurostat, EU Commission and own calculations.

Figure 2.7
Wage increase abroad and in Denmark



Source: The Confederation of Danish Employers (DA) and OECD.

Figure 2.8
Development in competitiveness



Note: Competitiveness is measured as unit labour costs in the manufacturing sector in Denmark relative to main trading partners, adjusted for exchange rate.

Source: Statistics Denmark, The National Bank of Denmark, OECD.

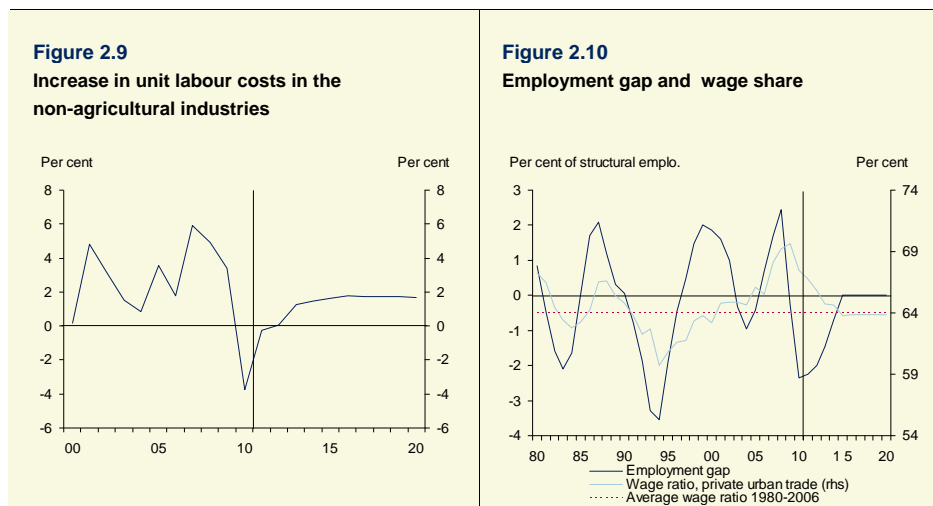
Towards 2012 the stabilisation of the labour market and the small decrease in unemployment are projected to imply that the annual wage inflation increases to 2¾ per cent. Further towards 2015, it is assumed that wage inflation increases to 3.3 per cent, which corresponds to the assumed rate of wage increase in the longer term.

The assumptions on wages and productivity means that unit labour costs in the business sector will increase by 1¾ per cent per year, *cf. figure 2.8*, which is in line with the medium-term inflation rate.

Consumer price inflation is estimated to be 2.4 per cent in 2011 or roughly equivalent to inflation in 2010 as a result of high oil prices, partly reflecting geopolitical circumstances, *cf. table 1A.6*. The increase in Danish consumer prices since mid-2008 is higher than in the euro area. This mainly reflects higher prices for services. In 2012, inflation is expected to slow to 1.4 per cent due in part to the assumption of a lower oil price.

In 2016-20 consumer price inflation is assumed to remain at 1.8 per cent per year in accordance with the European Central Bank's target of annual inflation below 2 per cent in the medium term.

The assumptions about wages and prices imply that there will be an annual increase in real wages of ¾ per cent in 2013-15 and 1½ per cent in 2016-20. The latter is in line with medium-term productivity developments. The downward adjustment of the assumed structural productivity growth in the business sector from 2 to 1½ per cent per year compared to previous convergence programmes have led to a corresponding reduction of long-term wage inflation from 3.8 per cent to the above mentioned 3.3 per cent per year.



Source: Statistics Denmark and own calculations.

The wage share will thus in 2016-20 be equal to the average level for the period 1980-2006 after a decrease towards 2015 from the exceptionally high level in the wake of the financial crisis, *cf. figure 2.9*.

2.6. Savings, investment, balance of payment and net foreign assets

There was a large increase in private savings after the financial crisis and the savings ratio increased to a historically high level. From 2012 to 2020 a normalisation of the savings ratio is assumed, *cf. figure 2.10* and *table 2.7*.

Similarly, the investment ratio decreased significantly after the financial crisis, and in 2010 it reached a historically low level. Towards 2020 a gradual increase in the investment ratio is assumed, but given the assumed growth in total fixed capital formation at an average of almost 4 per cent per year in 2013-2020, the investment ratio remains slightly below the average in the period from 1980 to 2006, *cf. figure 2.11*.

The opposite movements in the savings and investment ratio after the financial crisis led to a large increase in private sector saving surplus (financial savings). This is – despite the huge deficit of public finances – reflected in a significant surplus on the current account in 2009 and 2010. A continued high, but declining, surplus is assumed towards 2020, as the reduction of private sector saving surplus is offset by the reduction of the deficit on public finances, which are assumed to reach balance in 2020.

Figure 2.11
Private consumption and savings

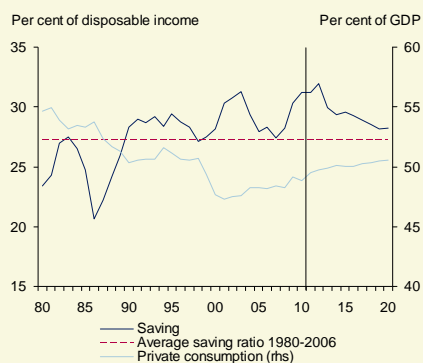
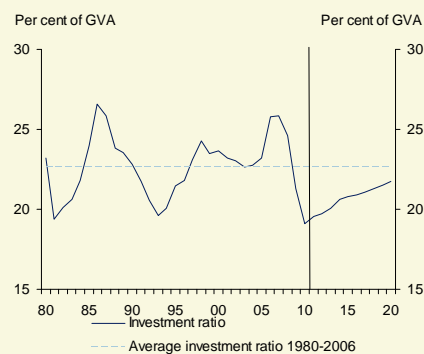


Figure 2.12
Investment ratio



Note: The savings ratio is for the total private sector
Source: Statistics Denmark and own calculations.

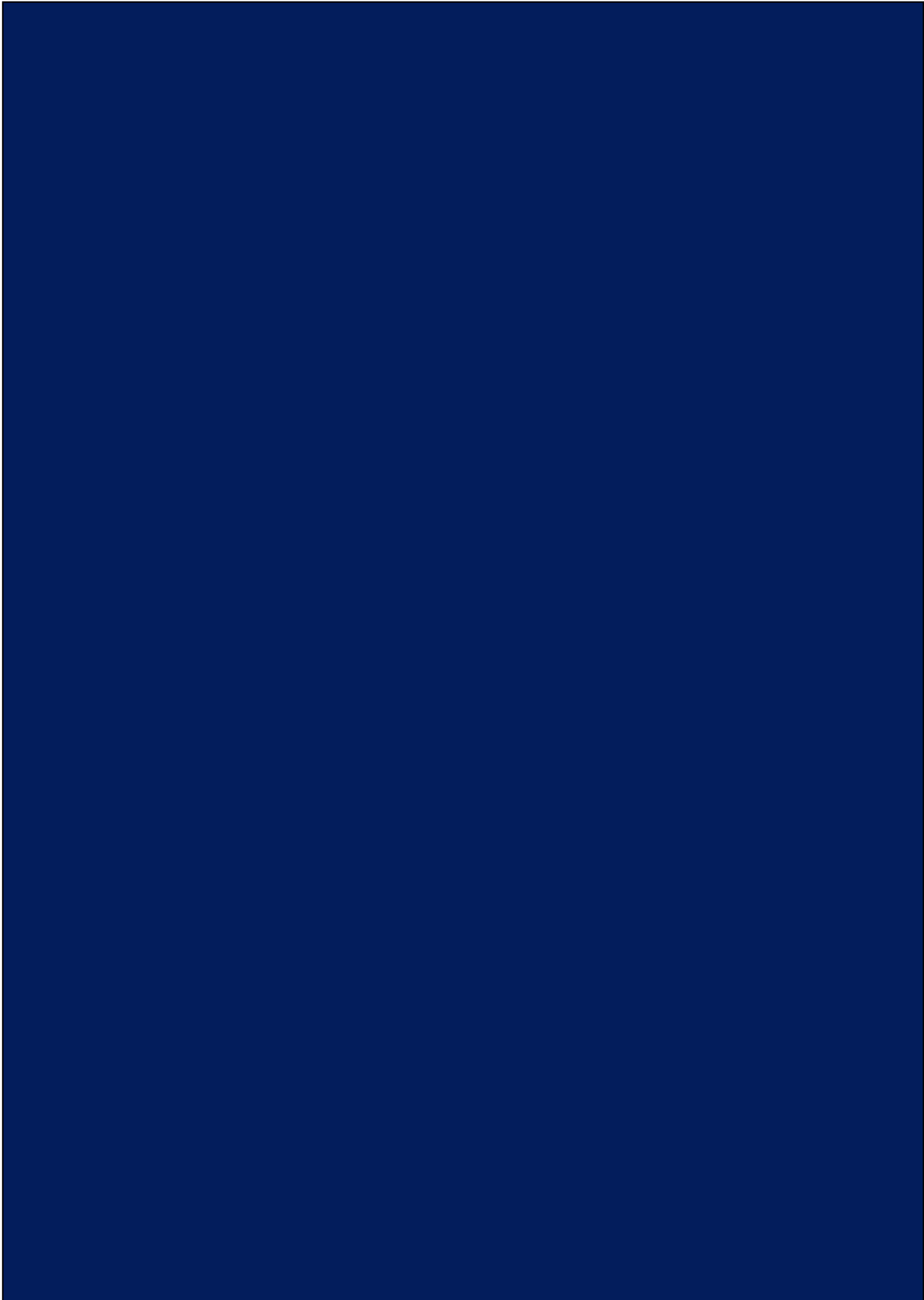
The continued current account surpluses imply that Denmark's net asset position increases from barely 10 per cent of GDP at the end of 2010 to 38 per cent of GDP by the end of 2020, cf. table 2.7.

Table 2.7
Savings, investments, current account and net asset position

	2009	2010	2011	2012	2015	2020
Per cent of GDP						
Investment ratio, private sector	15.1	14.2	14.7	15.0	17.2	17.4
Savings ratio, private sector	21.4	22.2	22.5	23.4	21.1	19.9
Private financial savings	6.4	8.4	8.2	8.7	4.2	2.6
General government budget balance	-2.8	-2.9	-4.0	-4.6	-0.5	0.0
Current account	3.6	5.5	4.2	4.1	3.7	2.6
Net asset position	4.6	9.6	13.1	16.4	26.6	38.1

Note: In contrast to the private financial savings and the current account the public balance includes capital transfers. The summation is therefore not entirely accurate.

Source: Statistics Denmark and own calculations.



3. Outlook for public finances to 2020

3.1 Overview of public finances

The economic forecast to 2012 is based on *Economic Survey*, December 2010, as updated on the basis of subsequent information with special import for public finances. The projection for public finances to 2020 is based on a scenario that includes the priorities in fiscal policies, including the Fiscal Consolidation Agreement (2011-13) and the government's reform initiatives concerning retirement, student grants and disability pension/flex job etc.

Public finances have weakened as a consequence of the financial crisis and the fiscal measures taken in order to mitigate the downturn. The general government surplus of 3.3 per cent of GDP in 2008 has turned into a deficit of 2.9 per cent of GDP in 2010, cf. table 3.1 (on a national accounts basis). The general government deficit on EDP-basis was 2.7 per cent of GDP in 2010, cf. box 3.1.

Based on the updated projection for 2010-12 and the Fiscal Consolidation Agreement etc. the general government deficit is estimated to be around 4 per cent of GDP in 2011 and 4.6 per cent of GDP in 2012, cf. table 3.1. The estimate for 2012 includes a one-off effect on public finances of approx. 1.6 per cent of GDP owing to the repayment of contributions to the early retirement that follows from the proposed retirement reform. This one-off effect in 2012 is not included in the structural balance.

As a consequence of the large deficits, Denmark has entered the excessive deficit procedure (EDP) and has received an EU-recommendation to start consolidation of public finances in 2011, to tighten fiscal policy in order to improve the structural balance by 1½ per cent of GDP in 2011-13, and to bring the deficit below 3 per cent of GDP by 2013. The Fiscal Consolidation Agreement of May 2010 aims to ensure compliance with the EU-recommendation, cf. below.

Table 3.1
Public finances and debt

	ESA	2008	2009	2010	2011	2012	2013	2014	2015	2020
Per cent of GDP										
Revenue	ESA	54.2	54.3	54.1	52.0	52.1	52.6	53.0	52.7	52.3
- of which taxes		48.2	48.2	48.2	46.3	46.8	47.1	47.5	47.3	46.8
Expenditure	ESA	51.0	57.2	57.0	56.0	56.7	54.3	54.2	53.3	52.3
Public balance ¹⁾	B9	3.3	-2.8	-2.9	-4.0	-4.6	-1.8	-1.2	-0.5	0.0
Structural public balance		2.4	-0.2	-1.7	-1.1	-0.9	-0.2	-0.3	-0.5	0.0
EMU debt		34.5	41.8	43.6	43.0	47.4	48.0	46.4	46.1	44.0
Public net debt		-6.6	-4.6	-1.1	2.9	7.4	8.4	8.7	8.4	5.6
Net debt of the state and municipalities		-6.6	-4.6	-1.1	3.0	7.4	8.4	8.7	8.3	5.4

1) National accounts basis. Estimates for the public balance on an EDP-basis are presented in annex table 2. The deficit in 2012 includes effects of the one-off payment of early retirement contributions which follows from the proposed retirement reform (effects amounting to 1.6 per cent of GDP).
Source: Statistics Denmark and own calculations.

The public balance from year to year is strongly influenced by the estimated revenues from pension yield taxation, which after the record year in 2010 are expected to be lower than normal especially in 2011 and to a lesser degree in 2012, *cf. figure 3.1*. The revenues from pension yield taxation are expected to be low in 2011 mainly because bond yields are assumed to increase through the year and pension funds thus suffer capital losses on their bond portfolios. This may imply negative tax that can be carried forward to 2012 and thus may reduce revenues next year.

Estimates of the revenues from pension yield taxation are uncertain as they depend on developments in financial markets. Since the turn of the millennium, when the taxation of pension yields was changed to the accrual principle, revenues from pension yield taxation have shown very large annual fluctuations, e.g. from close to 0 per cent of GDP in one year to around 2½ per cent of GDP the following year, *cf. figure 3.1*.

Box 3.1**Public balance and debt reporting under EDP**

In accordance with the Stability and Growth Pact Denmark reports on the general government deficit and public gross debt (EU-definition) to the European Commission under the Excessive Deficit Procedure (EDP).

The public balance on the EDP-basis differs in some aspects from the balance according to the Danish national accounts. The public balance on EDP-basis includes net interest income from central government interest rate and currency swaps. Also, the treatment of central government revenues from the 2001 sale of UMTS-licenses differs between the national accounts and the EDP-basis.

For EDP purposes all government revenue from the sale of UMTS licenses is accrued to the year 2001. In other words the revenue is counted as a one-off income, while the government *de facto* receives revenue from this source until 2011. In the national accounts, Statistics Denmark has chosen to spread the total revenue over the 20-year period for which the licenses are valid.

In total these corrections have only marginal effects on the general government balance. The correction wrt. interest rate and currency swaps improves the public balance on EDP-basis in 2010 (0.2 per cent of GDP), while the correction for UMTS-licenses reduces the public balance on EDP-basis slightly (0.0 per cent of GDP). The general government balance on EDP-basis is -2.7 per cent of GDP in 2010, *cf. table a*. On national accounts basis the public balance is -2.9 per cent of GDP in 2010.

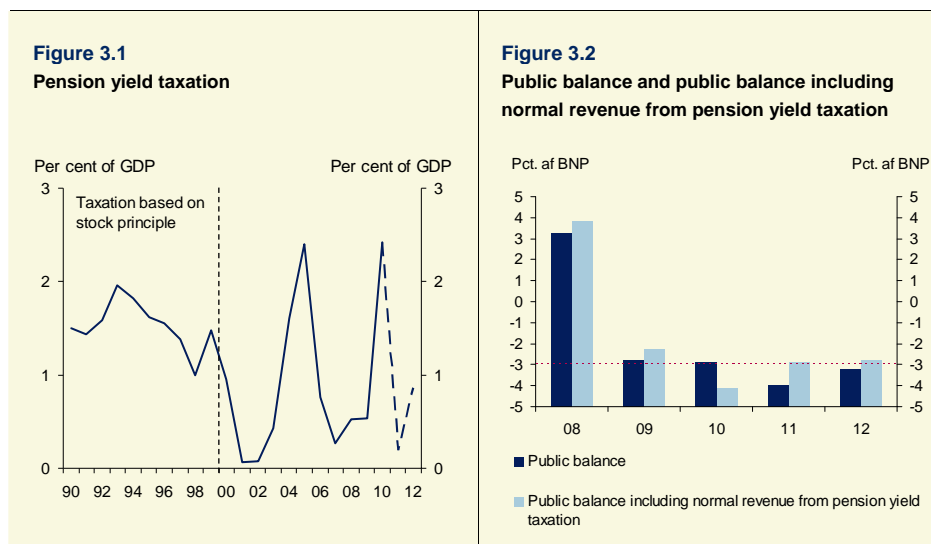
Table a**Public balance on EDP-basis and National Accounts basis, 2008-2013**

Per cent of GDP	2008	2009	2010	2011	2012	2013
Public balance (EDP-basis)	3.2	-2.7	-2.7	-3.8	-4.5	-1.7
Public balance (National Accounts basis)	3.3	-2.8	-2.9	-4.0	-4.6	-1.8

Source: Statistics Denmark and own calculations.

It was essentially the record-high revenue from the pension yield tax in 2010 that caused the general government deficit to unexpectedly remain below 3 per cent of GDP last year. With normal revenue from the pension yield tax, the deficit would have been more than 4 per cent of GDP. In a similar vein, the currently expected increase in the deficit from 2010 to 2011 is partly because the very high pension yield revenue in 2010 is unlikely to recur in 2011.

Disregarding fluctuations in the pension yield tax, the general government deficit is expected to decline gradually from 4 per cent of GDP in 2010 to close to 3 per cent of GDP in 2012 (when correcting for the one-off repayment of early retirement contributions owing to the retirement reform in 2012), *cf. figure 3.2*. To a large extent, the narrowing underlying deficit reflects the effects of the Fiscal Consolidation Agreement in 2011 and 2012.



Source: Own calculations.

With the Fiscal Consolidation Agreement consolidation of the public economy begins in 2011. The Fiscal Consolidation Agreement includes consolidation measures for a total of 24 billion DKK towards 2013 and coupled with other planned fiscal policy, up to 90 per cent of the fiscal easing in 2009 and 2010 is withdrawn towards 2013.

The Fiscal Consolidation Agreement implies that (real) public consumption growth is kept broadly stable in 2011-13. The agreement also includes a number of tax measures that strengthen public finances by around 10 billion DKK in 2013, a shortening of the unemployment benefit period from 4 to 2 years and a number of concrete budget improvements in the central government etc., cf. box 3.2. On a net basis, the Fiscal Consolidation Agreement is estimated to strengthen labour supply by around 10,000 persons.

With the Fiscal Consolidation Agreement and other planned measures, fiscal policies are assessed to be in line with the EU-recommendation, cf. box 3.3 and "Analysis by the Commission services of the action taken by Denmark", the European Commission, January 2011. Adjusted for cyclical developments and other temporary factors the structural deficit is estimated in CP11 to decrease by 1½ per cent of GDP from 1.7 per cent in 2010 to 0.2 per cent of GDP by 2013. The projected deficit for 2013 is below the 3 percent limit in the Stability and Growth Pact.

In the years towards 2020, public finances will be under rising pressure from the demographic developments with more elderly and a shrinking workforce as well as from declining revenues from the North Sea and energy taxes relative to GDP.

The reform proposals regarding retirement, student grants, disability pension and flex job can contribute to achieve structural balance in 2020. In addition, (real) public consumption growth amounts to 0.8 per cent per year in 2014-2020 in the projection.

The financial crisis and the weakening of public finances means that government EMU debt is expected to be above 47 per cent of GDP by the end of 2012. This includes an increase in EMU debt of around 1½ per cent of GDP due to the repayment of early retirement contributions in connection with the proposed retirement reform. From 2013-2020 EMU debt is expected to decline as a share of GDP, in part because the positive effects of the reform initiatives begin to take effect from 2014.

Public net debt, which also includes the public sector's financial assets, is projected to turn from a net asset position of 6½ per cent of GDP at the end of 2008 to a net debt position of approx. 7½ per cent of GDP by the end of 2012. The Fiscal Consolidation Agreement dampens debt accumulation, and net debt is expected to decrease from around 8½ per cent of GDP in 2013 to approx. 5½ per cent of GDP by 2020.

Box 3.2**Fiscal Consolidation Agreement**

The Fiscal Consolidation Agreement was concluded in May 2010 and the relevant legislation has been adopted in the Parliament. The Agreement includes, inter alia, the following measures/initiatives:

- Public consumption growth (in real terms) will be kept broadly stable in 2011-13
- Enhanced mechanisms to ensure that actual spending does not exceed budgeted spending in local governments
- The automatic annual adjustment/indexation of thresholds in the tax system – notably income thresholds for personal income taxes – is suspended in 2011-13
- The planned increase in the income threshold for the top-bracket tax in 2011 is deferred for three years
- The duration of the unemployment benefit period is reduced from 4 to 2 years
- A ceiling on tax deductions of union membership fees and limitations on tax deductions of certain employer contributions

The measures in the Fiscal Consolidation Agreement imply real growth in government consumption (relative to earlier plans) of around ½ per cent per year in 2011 and 2012 and approx. -¼ per cent in 2013. The increase in government consumption relative to CP09 is financed by other savings. The change from 2012 to 2013 should be seen in light of reduced outlays for active labour market schemes when the unemployment benefit period is reduced to 2 years.

The agreement is estimated to strengthen labour supply by more than 10,000 persons, reflecting the labour market reforms.

Box 3.3**Compliance with the EU-recommendation**

In July 2010 Denmark received a recommendation from EU to tighten fiscal policy by ½ per cent of GDP per year on average during 2011-13 and to bring the deficit below 3 per cent of GDP by 2013.

Based on the estimated direct budgetary impact, consolidation in 2011-13 amounts to a total of approx. 3 per cent of GDP, *cf. table a*. This corresponds to approx. 90 per cent of the estimated fiscal easing in 2009 and 2010. A number of other factors weakens public finances by approx. 1 per cent of GDP towards 2013. This weakening of public finances reflects a structural decline in revenues from the North Sea and increased public spending (structural) on pensions and interest payments on higher debt. Including these factors, public finances thus should improve by approx. 2 per cent of GDP from 2010 to 2013 based on a "bottom-up" assessment. This is more than the estimated structural budget improvement of 1½ per cent of GDP from 2010 to 2013 (based on a "top-down" assessment including changes in labour supply etc.) .

Table a**Fiscal Policy measures to comply with the EU-recommendation**

	2011	2012	2013	2011-13
Consolidation total (direct budget impact)	1,1	0,9	1,0	3,0
- lower public consumption	0,6	0,1	0,3	1,1
- lower public investments	-0,1	0,2	0,2	0,3
- lower income transfers (incl. UIB reform)	0,1	0,3	0,1	0,6
- Spring Package 2.0 financing (tax) elements	0,1	0,0	0,4	0,5
- Fiscal Consolidation Agreement, (tax) elements	0,3	0,1	0,1	0,5
- other elements	0,1	0,1	-0,2	0,0
Other structural factors affecting the fiscal balance¹⁾	-0,4	-0,4	-0,2	-1,0
Underlying change in fiscal balance (bottom-up)	0,8	0,5	0,7	2,1
Change in structural balance (top-down)	0,5	0,2	0,7	1,5

1) Includes North Sea revenues and expenditures for pensions and interest payments.
Source: Own calculations.

In January 2011, the EU-Commission concluded that Denmark is implementing fiscal measures in accordance with the EU-recommendation. The Commission noted that Denmark has implemented the measures in the Fiscal Consolidation Agreement and that the Fiscal Bill for 2011 confirms the reduction in public consumption growth, *cf. European Commission "Analysis by the Commission services of the action taken by Denmark"*, January 2011.

3.2 Structural budget balance

Of the total weakening of public finances of approx. 6¼ per cent of GDP from 2008 to 2010 around 4 percentage points reflect a reduction of the structural budget balance, which measures the budget balance corrected for the impact of business cycle developments and other temporary factors. This primarily reflects budgetary stimulus enacted in 2009 and 2010.

Table 3.2
Structural budget balance

	2008	2009	2010	2011	2012	2013	2014	2015	2020
Per cent of GDP									
1. Public balance	3.3	-2.8	-2.9	-4.0	-4.6	-1.8	-1.2	-0.5	0.0
2. Cyclical adjustment	1.1	-1.7	-1.8	-1.6	-1.5	-1.1	-0.5	0.0	-
3. Special items in total	-0.2	-1.0	0.5	-1.2	-2.2	-0.5	-0.3	0.0	-
<i>Of which</i>									
Corporate tax ¹	-0.2	-0.5	-0.4	-0.2	0.0	-0.1	0.0	0.0	-
Vehicle registration tax	-0.1	-0.5	-0.4	-0.3	-0.3	-0.2	-0.1	0.0	-
Pension yield tax	-0.4	-0.5	1.4	-0.8	-0.2	-0.1	-0.1	0.0	-
Net interest payments	0.5	0.1	-0.1	0.0	0.0	-0.1	0.0	0.0	-
North Sea revenue ²⁾	0.5	-0.4	0.0	0.2	0.0	-0.1	0.0	0.0	-
Others ³⁾	-0.4	0.7	0.0	-0.1	-1.7	0.1	0.0	0.0	-
4. Structural balance (1.-2.-3.)	2.4	-0.2	-1.7	-1.1	-0.9	-0.2	-0.3	-0.5	0.0
Memorandum items									
Output gap	0.2	-3.4	-2.1	-1.8	-1.7	-1.2	-0.6	0.0	0.0
Employment gap	2.5	-0.3	-2.4	-2.2	-2.0	-1.3	-0.7	0.0	0.0
Weighted cyclical gap	1.2	-2.0	-2.2	-2.0	-1.8	-1.3	-0.7	0.0	0.0

1) Excl. hydro carbon tax and corporate taxes from corporations liable to carbon tax payments.

2) Hydro carbon tax and corporate taxes from corporations liable to carbon tax payments, excise tax on oil pipelines and profit sharing.

3) Including net current and capital transfers, e.g. EU-contributions, foreign aid, block grants to the Faroe Islands and Greenland, purchase and sale of land and rights. These special items can vary considerably from year to year. Special notice has been taken to the capital transfer of 5 billion DKK in 2010 concerning the pension yield tax so that this does not enter the structural budget balance.

Source: Statistics Denmark and own calculations.

In 2010 the estimated structural budget deficit is 1.7 per cent of GDP. Based on the announced measures, the structural deficits are estimated at 1.1 per cent of GDP in 2011, 0.9 per cent of GDP in 2012 and 0.2 per cent of GDP in 2013, *cf. table 3.2*.

The structural improvement of 1½ per cent of GDP from 2010 to 2013 and the projected reduction of the deficit to below 3 per cent of GDP in the latter year is in accordance with the EU-recommendation.

Throughout the years 2009-14 the projected deficits are larger than the estimated structural deficits, primarily because cyclical conditions are not assumed to be back to neutral before 2015.

In 2009-2012 the revenues from corporate taxes and vehicle registration taxes are expected to be lower than the estimated trend level, and (other) cyclical developments also contribute negatively to the actual budget balance. Except for the high revenue in 2010 the revenues from pension yield taxation are also expected to be lower than the assumed trend level in 2009-2012.

From 2012 to 2015 economic activity is assumed to revert to normal implying output and employment gaps of zero by 2015. At the same time, the corrections concerning special items are assumed to gradually close and reach zero by 2015. From 2015, the projected developments are thus assumed to be on a structural path, and from 2015 the actual budget balance is thus equal to the structural budget balance.

The impact of discretionary one-off measures on total public finances (net lending) and the central government CIL-balance is – according to the guidelines for Stability and Convergence Programmes – outlined in *box 3.4*.

Box 3.4**Discretionary one-off measures in 2010 and 2011**

Discretionary one-off measures etc. are estimated to reduce the central government CIL-account by 2¼ billion DKK and the public balance by 3½ billion DKK in 2010, cf. *table a*. This mainly reflects one-off expenditures due to the change in pension yield taxation from institutional to individual basis in 2010.

In 2011 the impact on the public balance of discretionary one-off measures is neutral, while the government CIL-account increases by 6½ billion DKK primarily as a consequence of payments of personal tax to local governments etc. for the income year 2008.

Table a**Discretionary one-off measures in 2010 and 2011**

Billion DKK	CIL-account	Public balance
One-off expenditure due to the change in pension yield taxation	-4,0	-4,0
Tax on payments from the special pension scheme	1,3	1,3
Payment of personal tax to local government etc. for income year 2007	0,9	-
Disbursements from IØ and IFU	0,1	-
One-year funds	-0,9	-0,9
Capital increase in SAS and share purchase in DONG etc.	-2,0	-
Transformation of Naviar to an independent company	-1,2	-
Transfer of high schools etc. after transition to independent institutions	3,1	-
Labour Market Holiday Fund	0,5	-
2010 total	-2,2	-3,6
Payment of personal tax to local government ect. for income year 2008	4,0	-
Portfolio reallocation of central government assets	2,0	-
Disbursements from IØ and IFU	0,6	-
Taking over of DR's pension fund	0,8	0,8
One-year funds	-0,8	-0,8
2011 total	6,6	0,0

Note: A positive value reflects an account increase, while a negative value reflects an account decrease.
Source: Budget Outlook 3, December 2010.

3.3 Fiscal policy stance

Fiscal policy was eased significantly in 2009 and 2010 in light of the financial crisis. The fiscal measures in 2009 and 2010 amount to approx. 3¼ per cent of GDP (measured by the direct

revenues) and were composed of 60 per cent on the expenditure side and the rest on the revenue side. Fiscal policy easing in these two years appears to have been greater than in other OECD countries.

The contribution to activity growth from fiscal policy is estimated to be 1½ per cent in 2009 and 0.7 per cent in 2010 including the impact on activity from SP-payments and payouts from certain private pension accounts, *cf. table 4.3* (in itself, the so-called "fiscal effect" does not include the activity effects of payouts from SP and private pension accounts, since these schemes are private saving schemes).

Table 3.3
Policy impacts on economic activity

	2009	2010	2011	2012	2013
Per cent					
GDP growth	-5.2	2.1	1.8	1.8	2.1
Output gap	-3.4	-2.1	-1.8	-1.7	-1.2
Percentage points					
First year fiscal effects	1.2	0.6	-0.4	-0.4	-0.5
SP-payments	0.4	0.0	-0.3	0.0	0.0
Private pension accounts	-	0.1	-0.1	0.0	0.0
Total first year impact (yearly growth)	1.5	0.7	-0.8	-0.4	-0.5
Fiscal policy and SP etc. from 2009 (GDP level)	1.5	2.7	2.5	1.8	0.8
Fiscal policy and SP etc. from 2009 (contrib. to growth)	1.5	1.2	-0.2	-0.7	-0.9
Change in interest rates since 2009 (growth)	0.5	1.5	1.4	-0.1	-0.7
Total (fiscal effect, interest rates etc.) (growth)	2.0	2.7	1.2	-0.8	-1.6

Note: The fiscal effect does not include the activity effects of payouts from SP and private pension accounts, since these schemes are private saving schemes.

Source: Statistics Denmark and own calculations.

The total discretionary easing etc. in 2009 and 2010 is estimated to increase the GDP-level by 2¾ per cent in 2010, including second-year effects of the easing in 2009.

With the consolidation of the public economy from 2011 most of the fiscal easing in 2009 and 2010 is withdrawn towards 2013. The assumed fiscal policy implies negative contributions to economic growth of around ¾-1 per cent of GDP in 2012-2013, measured by the multi-annual effects. In 2011, the impact on activity is roughly neutral, reflecting the impact in 2011 of the fiscal easing in 2009 and 2010.

Moreover, fiscal policy in 2011 should be considered in light of the easy monetary policy and low interest rates in Denmark. Model calculations suggest that the decline in interest rates since 2008 increase activity growth in 2011 by approx. 1½ per cent.

3.4 Revenues

In the 2020-projection, total public revenues decline from 54¼ per cent of GDP in 2008 to around 52 per cent of GDP in 2012. From 2012 to 2014 public revenues increase due to the tax measures in the Fiscal Consolidation Agreement, before decreasing to approx. 52¼ per cent of GDP by 2020, *cf. table 3.5*.

The decline in revenues as a share of GDP from 2008 to 2020 mainly reflects a reduction in the tax-to-GDP ratio of approximately 1½ percentage points. In addition, as of 2012, early retirement contributions subside as a result of the proposed retirement reform.

The declining tax-to-GDP ratio in part reflects a reduction of corporate tax revenue from a relatively high level in 2008. In addition, decreasing energy consumption in per cent of GDP – owing to technological improvements and initiatives in the 2008 Energy Agreement etc. – diminish revenues from energy taxes in per cent of GDP. Finally, the nominal principle of the tax freeze towards 2020 contributes to an underlying reduction in the tax-to-GDP ratio compared to a situation, in which excise taxes and the ceiling for the property value tax etc. were actively raised relative to current rules¹.

The tax reform in Spring Package 2.0 is fully financed (not counting dynamic effects from increased labour supply etc.). Tax reductions have been implemented from 2010 in order to support demand during the crisis, while the financing elements are implemented gradually through an increase in green taxes, higher excise duties on unhealthy food, lower deductions and removal of special arrangements for businesses etc. The reform is expected to strengthen fiscal sustainability by 5½ billion DKK through increased labour supply etc.

The tax elements in the Fiscal Consolidation Agreement and a normalisation of the revenues from pension yield taxation form a relatively low level in 2008 tends to increase revenues towards 2013. Towards 2020 the revenues from taxation of accrued returns on pension savings increase to approx. 1 per cent of GDP in line with, notably, growing pension assets relative to GDP.

¹ Following *Spring Package 2.0* the nominal principle in the tax freeze is included towards 2019. The tax reform is fully financed over time and strengthens public finances as of 2013 (and thereafter), *cf. CP09*.

Table 3.5
Public revenue

	ESA	2008	2009	2010	2011	2012	2013	2014	2015	2020
Per cent of GDP										
Public budget balance (Nat. Accts. basis)	B9	3.3	-2.8	-2.9	-4.0	-4.6	-1.8	-1.2	-0.5	0.0
Public expenditures		51.0	57.2	57.0	56.0	56.7	54.3	54.2	53.3	52.3
Public revenues		54.2	54.3	54.1	52.0	52.1	52.6	53.0	52.7	52.3
- Taxes (tax burden)		48.2	48.2	48.2	46.3	46.8	47.1	47.5	47.3	46.8
- Personal taxes etc. ¹⁾		21.4	22.4	20.5	20.4	20.6	20.7	20.8	20.6	20.2
- of which property value tax		0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6
- Labour market con- tributions		4.6	4.8	4.7	4.5	4.5	4.5	4.5	4.5	4.5
- Pension yield tax		0.5	0.5	2.4	0.2	0.9	0.9	1.0	1.1	1.0
- Corporate tax		3.3	2.5	2.7	3.0	3.0	3.0	3.1	3.1	3.1
- VAT		10.1	10.2	9.9	10.0	9.9	9.9	10.0	10.0	10.0
- Land tax etc.		1.2	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
- Excise duties etc.		6.0	5.5	5.7	5.8	5.8	6.0	6.1	6.1	5.9
- Social contributions		1.0	1.0	1.0	1.0	0.7	0.6	0.6	0.6	0.6
- Interest income	D41	1.7	1.9	1.7	1.6	1.6	1.6	1.7	1.6	1.9
- Other income		4.3	4.2	4.2	4.1	3.7	3.9	3.9	3.8	3.6

1) Personal taxes etc. cover withholding taxes (including property value tax), annual motor vehicle fees paid by households, inheritance tax and other personal taxes.

Source: Statistics Denmark and own calculations.

3.5 Expenditures

The share of public expenditures in GDP has increased from around 51 per cent of GDP in 2008 to around 57 per cent of GDP in 2010, after which public expenditures are projected to decrease gradually to 53¼ per cent of GDP in 2015 and 52¼ per cent of GDP by 2020, *cf. table 3.6*. The increase from 2008 to 2010 reflects both increasing primary expenditures and higher interest payments in light of the increase in public debt as well as a substantial decrease in real GDP. Measured relative to cyclically-adjusted GDP, primary expenditures increased from around 51 per cent in 2008 to 53¼ per cent in 2010.

Table 3.6
Composition of general government finances

	ESA	2008	2009	2010	2011	2012	2013	2014	2015	2020
Per cent of GDP										
Public budget balance (National account definition)	B9	3.3	-2.8	-2.9	-4.0	-4.6	-1.8	-1.2	-0.5	0.0
Public revenue		54.2	54.3	54.1	52.0	52.1	52.6	53.0	52.7	52.3
Public expenditures		51.0	57.2	57.0	56.0	56.7	54.3	54.2	53.3	52.3
- Primary expenditures		49.1	54.9	54.8	53.9	54.6	52.0	51.7	50.8	49.7
- Public consumption	P3	26.7	30.0	29.4	28.7	28.4	27.8	27.6	27.2	26.8
- Public investments		1.9	2.1	2.2	2.3	2.1	1.9	1.8	1.8	1.8
- Income transfers	D62	15.1	17.1	17.3	17.3	16.9	16.8	16.6	16.4	15.8
- Subsidies	D3	2.2	2.6	2.6	2.5	2.5	2.4	2.4	2.4	2.5
- Other primary expenditures		3.2	3.1	3.2	3.1	4.7	3.1	3.2	3.1	2.9
- Interest expenditures	D41	1.8	2.3	2.2	2.1	2.2	2.4	2.5	2.5	2.6
Per cent of cyclically-adjusted GDP										
Public expenditures		52.8	54.8	55.9	55.0	55.8	53.8	53.7	53.3	52.3
- Primary expenditures		50.9	52.6	53.7	52.9	53.6	51.4	51.3	50.8	49.7
- Public consumption	P3	27.7	28.7	28.8	28.2	27.9	27.5	27.4	27.2	26.8
- Public investments		2.0	2.0	2.1	2.2	2.1	1.8	1.8	1.8	1.8
- Income transfers	D62	15.6	16.4	17.0	17.0	16.7	16.6	16.5	16.4	15.8
- Subsidies	D3	2.3	2.5	2.6	2.5	2.4	2.4	2.4	2.4	2.5
- Other primary expenditures		3.4	3.0	3.2	3.0	4.6	3.1	3.1	3.1	2.9
- Interest expenditures	D41	1.9	2.2	2.2	2.1	2.1	2.4	2.5	2.5	2.6

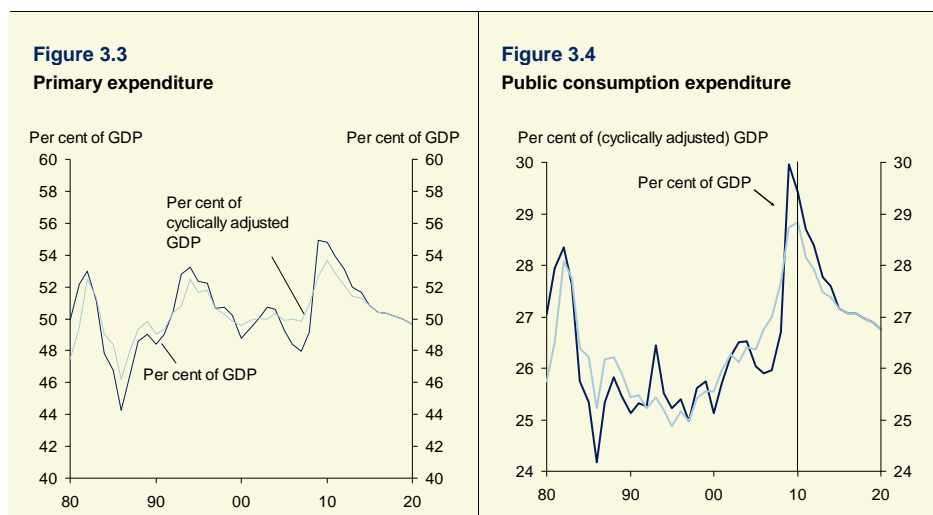
Note: The public expenditures as per cent of cyclical adjusted GDP controls for the estimated part of the changes in the expenditures' share of GDP that is due to the denominator effect of the business cycle etc. I.e. the public expenditures (in the nominator) to e.g. unemployment benefits are not controlled for the impact of the business cycle. The cyclical adjusted GDP is estimated by a Kalman filter.

Source: Statistics Denmark and own calculations.

Towards 2020 primary expenditures are reduced to just below 50 per cent of (cyclically adjusted) GDP, *cf. figure 3.3*. This is a key condition to ensure structural balance by 2020.

The reform proposals on retirement, student grants and disability pension/flex-jobs reduce the expenditure share towards 2020 by 2 percentage points through increased employment and GDP, and through lower outlays for income transfers. At the same time, the assumed

normalisation of the cyclical position towards 2015 lowers the expenditure share through higher GDP and lower outlays for unemployment benefit and labour market schemes.



Note: Primary expenditures are corrected for the repayment of early retirement contributions in 2012.
Source: Own calculations.

Public interest payments increase from 1.8 per cent of GDP in 2008 to 2.6 per cent in 2020. The increase in interest payments reflects the build-up of public debt in the aftermath of the financial crisis and from 2010 an assumed gradual increase in interest rates towards 2020.

Public consumption

On the basis mainly of the Fiscal Consolidation Agreement, real growth in public consumption is estimated to be -0.3 per cent in 2011, 0.5 per cent in 2012 and -0.3 per cent in 2013.

Taking into account the suggested reforms, public consumption expenditures can grow by 0.8 per cent (in real terms) per year in 2014-20. This corresponds to an increase of around 4 billion DKK per year.

In the past 30 years, real growth in public consumption has been 1.6 per cent per year on average. It is thus a basic condition that public consumption growth is reduced going forward. This requires tighter expenditure control and prioritization of public expenditures. Therefore, a new system with binding spending limits for central government, municipalities and regions is proposed, setting clear spending limits in line with the aim of structural balance in 2020.

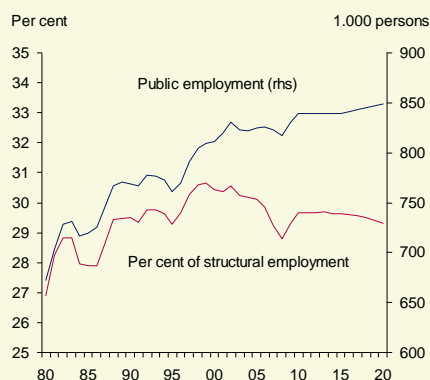
The assumed real growth of public consumption and the supposed normalisation of activity towards 2015 imply that public consumption expenditure is projected to decrease from approx. 29 per cent of cyclically-adjusted GDP in 2010 to 27 per cent by 2020, cf. figure 3.4. It is an important guideline in the 2020-scenario that public consumption expenditure cannot exceed 27 per cent of cyclically-adjusted GDP in 2020.

Public consumption as a share of GDP depends on production growth and thus the assumed productivity growth in the private sector. In the projection, private sector productivity growth is assumed to be around 1½ per cent on average. This is more than in the years since 1995. If the assumed higher productivity growth is not realized, nominal spending growth must be reduced to ensure structural balance in 2020. This would occur through the automatic adjustment of income transfers and by public wages following wage developments in the private sector, but may typically require lower real growth of public consumption as well.

In the projection public employment is assumed to be unchanged towards 2015 and to increase slightly towards 2020, *cf. figure 3.5*. The assumptions on public employment reflect the assumed moderate public consumption growth. Public employment thus decreases slightly as a share of total (structural) employment. In 2020 public employment is assumed to equal 29½ per cent of total employment, i.e. the same share as in 2007 before the crisis.

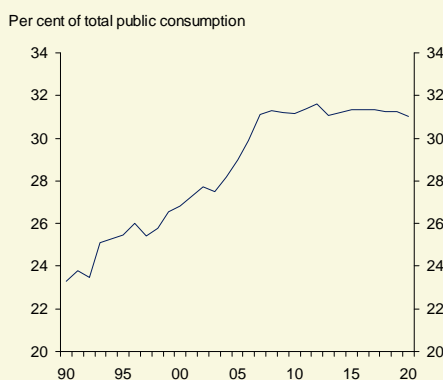
The evolution of public employment towards 2020 will in practice depend on how resources for public services are allocated between public employment and (net) purchases of goods and services from the private sector.

Figure 3.5
Public employment, 1980-2020



Note: Public employment is corrected for strikes in the public sector in spring 2008.
Source: Own calculations.

Figure 3.6
Public goods purchase quota



Note: Public goods purchase is calculated in per cent of total public consumption excl. depreciation.
Source: Own calculations.

Other expenditure

Due to the economic downturn public investments have been brought forward and initiated in 2009 and 2010. Thus public investments are expected to amount to more than 2 per cent of GDP in both 2009 and 2010, which is a high level by Danish historical standards. A certain overflow of public investments from 2010 to 2011 is expected. Therefore the high level of public investments in 2009 and 2010 is expected to continue in 2011.

Towards 2020 it is assumed that public investments gradually return to a more normal level. Thus public investments' share in GDP is assumed to decrease to 1¾ per cent in 2020. This corresponds to the historical average since 1990.

The share of social transfer expenditures in GDP depends on cyclical conditions. From 2008 to 2010 transfer expenditures increased from around 15 per cent of GDP to around 17 per cent of (cyclically adjusted) GDP, after which the assumed normalisation of the cyclical position and the effects of the reforms of retirement, student grants and disability pension are projected to reduce transfer expenditures to 15¾ per cent of (cyclically-adjusted) GDP by 2020.

Increased public pension expenditures in light of more pensioners contribute to an underlying increase in social transfer spending of around 0.4 per cent of GDP from 2013 to 2020.

3.6 Net lending by sub-sectors

The central government deficits are diminishing towards 2013, excluding the effect of repayments of early retirement contributions, which are assumed to take place in 2012 due to the retirement reform proposal. Local government finances are assumed to be in balance in the projection period, *cf. table 3.7*.

Table 3.7
Public finances by sub-sectors

	ESA	2008	2009	2010	2011	2012	2013	2014	2015	2020
Per cent of GDP										
General government budget balance		3.3	-2.8	-2.9	-4.0	-4.6	-1.8	-1.2	-0.5	0.0
Of which:										
Central government		3.7	-2.0	-2.4	-4.0	-4.6	-1.7	-1.1	-0.5	0.0
Local government		-0.4	-0.8	-0.5	0.0	0.0	0.0	0.0	0.0	0.0
Social funds		0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: It is technically assumed that net lending of local governments (municipalities and regions) is balanced for the period 2011-2020.

Source: Statistics Denmark and own calculations.

The central government surplus (net lending) of 3.7 per cent of GDP in 2008 is projected to deteriorate to a deficit of 4 per cent of GDP in 2011 and 4.6 per cent of GDP in 2012. As mentioned, the estimate for 2012 includes the repayment of early retirement contributions.

Given the consolidation of public finances towards 2013 and the assumptions concerning the reform proposals and public consumption growth towards 2020 as well as the assumed normalisation of economic activity, central government finances are projected to be in balance by 2020.

Local government finances shall in principle balance on a cash basis. The annual agreements on local government finances ensure full financing of the agreed expenditure growth, in part through the block grant. This applies within the framework of the tax freeze, which again applies for the municipalities as a whole and the regions as a whole, respectively.

In individual years there may be local government surpluses and deficits on a national accounts basis (net lending) of a certain magnitude. Statistics Denmark's latest figures for public finances in 2010 (published on March 23, 2011) showed a local government deficit on national account basis (net lending) of 8.6 billion DKK or 0.5 per cent of GDP. In the distribution of general government budget balance by sub-sectors in *table 3.7*, local government net lending is assumed to balance from 2011.

The *social funds* include unemployment insurance funds and the employees' wage guarantee fund (Lønmodtagernes Garantifond). Net lending in social funds rounds off to 0.0 per cent of GDP for the whole period 2010-2020.

3.7 Public debt

Based on the large general government budget deficits and the build-up of central government financial reserves public debt is increasing from 34½ per cent of GDP in 2008 to 48 per cent of GDP in 2013. From 2013 to 2020 the EMU-debt as a share of GDP stabilizes in line with the consolidation of the public sector's economy and the positive effects of reform proposals concerning retirement, student grants and the early pension scheme/flex jobs, *cf. table 3.8*.

Table 3.8
General government gross debt (EMU-debt)

	2008	2009	2010	2011	2012	2013	2014	2015	2020	08-20
Per cent of GDP										
EMU-debt (end-year level)	34.5	41.8	43.6	43.0	47.4	48.0	46.4	46.1	44.0	
Change in debt ratio		7.3	1.8	-0.5	4.3	0.7	-1.6	-0.3	-0.5	9.5
Contribution to the change in debt ratio										
- Primary budget balance		2.4	2.4	3.5	4.0	1.0	0.3	-0.3	-0.8	9.9
- Net interest payments		0.3	0.5	0.5	0.6	0.8	0.8	0.8	0.7	8.4
- Nominal GDP growth		2.0	-2.4	-1.4	-1.7	-2.0	-1.8	-2.3	-1.8	-18.1
- Financial conditions etc.		2.6	1.3	-3.1	1.4	0.9	-0.9	1.5	1.3	9.3

Note: Financial conditions etc. reflect e.g. the Social Pension Fund's stock of government bonds, which is deducted in the EMU debt. To this is added the effect of restructuring of government assets and liabilities (privatization etc.), payment changes in the tax area, issuance price losses, relending to state guaranteed entities etc.

Source: ADAM and own calculations.

Overall, EMU-debt is projected to increase by approx. 9½ per cent of GDP from 2008 to 2020, *cf. table 3.8*.

The projected primary balance of central and local governments add approx. 10 per cent of GDP to EMU-debt from 2008 to 2020, while the cumulated net interest balance of central and local governments amounts to approximately 8½ per cent of BNP, *cf. table 3.8*.

The growth in nominal GDP contributes in isolation to a reduction of the EMU-debt ratio of approx. 18 percentage points (i.e., when debt is measured as a share of GDP).

Finally, other financial items – reflecting in particular issuance price losses, relending to state guaranteed entities, restructuring of government assets and liabilities and the Social Pension Fund's holding of government bonds – contribute to an overall increase in the EMU debt of approx. 9¼ pct. of GDP from 2008 to 2020.

The public sector's financial assets are not included in the EMU-debt. In contrast, net public debt as measured by Statistics Denmark based on the national accounts takes into account all government financial assets and liabilities in the central and local governments and in social funds. As a consequence assets in the form of loans to state-guaranteed entities and shareholdings are included in the case of the central government². Net public debt is used in the assessment of fiscal sustainability³.

In 2000, net public debt amounted to 22½ per cent of GDP. By the end of 2008, the net public debt had turned into a net asset position of approx. 6½ per cent of GDP, *cf. table 3.9*. The general government budget balance development implies a build-up of public net debt to approx. 8¾ per cent of GDP towards 2014, after which the net debt is projected to decline to 5½ per cent of GDP by 2020.

Table 3.9
Projection of different public debt concepts, end-year

	2000	2008	2009	2010	2011	2012	2013	2014	2015	2020
Per cent of GDP										
EMU-debt	52.4	34.5	41.8	43.6	43.0	47.4	48.0	46.4	46.1	44.0
Net public debt ¹⁾	22.5	-6.6	-4.6	-1.1	2.9	7.4	8.4	8.7	8.4	5.6
Net debt of central and local governments ²⁾	23.6	-6.6	-4.6	-1.1	3.0	7.4	8.4	8.7	8.3	5.4

1) 2011-20 is technically projected based on the development of the general government budget balance etc.

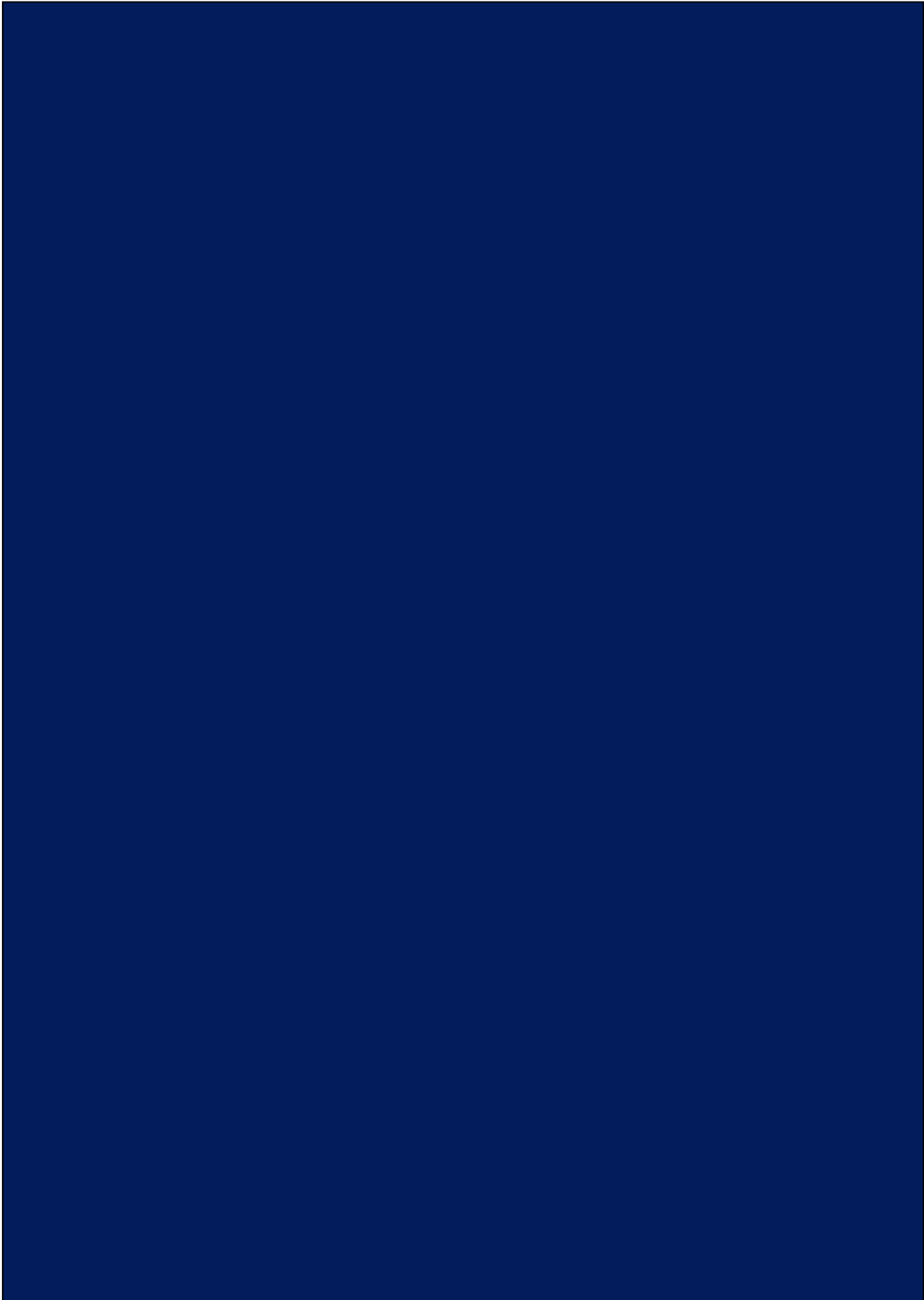
2) 2011-20 is technically projected based on the development of the budget balance of central and local governments.

Source: Statistics Denmark and own calculations.

² The net public debt (as opposed to the EMU-debt) valued at market value. Changes in net debt follow primarily the public balance (net lending), but is also affected by price adjustments concerning assets and liabilities.

³ Net debt is definitional aligned with net lending in national accounts.

Net assets in the social funds (i.e. the unemployment insurance funds and the employees' wage guarantee fund) are close to 0 per cent of GDP for the period 2008-2010. Thus, there is only a marginal difference between the national account figures for total public net debt and net debt of the central and local governments.



4. Sensitivity analysis and comparison with CP09

The projection in Convergence Programme (CP11) corresponds to the projection that form the basis of *Reform Agenda 2020*. The projection is based on the short-term outlook in *Economic Survey December 2010* updated with recent information with particular implications for public finances. This includes e.g. an increase in expected oil prices in 2011-2012.

There are now increasing signs that the moderate economic recovery is becoming more self-sustaining, but considerable uncertainties remain, including the strength of the current international upswing. In part the uncertainty reflects the large government net lending requirements in many countries which can lead to turmoil in financial markets, as well as the widespread need to tighten fiscal policies and gradually pull back the extraordinary monetary stimulus in the aftermath of the crisis. Meanwhile, private consumption and investment might rise quite substantially from their current depressed levels if expectations improve and growth prospects appear more solid. Uncertainty thus goes in both directions relative to the baseline.

The analyses below illustrate the sensitivity of public finances and the macroeconomic scenario to changing conditions in selected areas as required in the *Code of Conduct for Stability and Convergence Programmes*. The sensitivities are illustrated in relation to the common external assumptions for 2011 and 2012 (*cf. section 4.1.1*); in relation to a more positive, demand-driven scenario as well as a more negative scenario of higher interest rates (*cf. section 4.1.2*); as well as in relation to alternative assumptions about oil prices in the longer run (*cf. section 4.1.3*).

Section 4.2 compares the main projection in CP11 with last year's Convergence Programme.

4.1 Sensitivity analyses

4.1.1 The external assumptions of the EU Commission

The assumptions about the international economy in CP11 are roughly in line with the EU Commission's preliminary spring forecast and the *common external assumptions* that member states can use as basis for the stability and convergence programmes, *cf. table 4.1*.

Table 4.1**External assumptions**

	2010	2011		2012	
		CP11	EU	CP11	EU
Export market Growth	7.3	5.8	6.6	6.3	5.8
Crude Oil Price, USD per barrel.	80	106	113	100	112
Short interest rate, percentage points	0.8	1.4	1.6	2.0	2.6
Long interest rate, percentage points	2.7	3.3	3.4	3.9	3.7

Source: *Economic Survey December 2010* and the EU commission's "Common external assumptions".

For the years 2011 and 2012 as a whole the assumptions about export market growth are virtually identical to the *Common external assumptions*. The Commission, however, assumes somewhat higher oil prices in both 2011 and 2012. The common external assumptions also assumes a sharper increase in short term interest rates than in CP11, while long term rates conversely are slightly lower in 2012.

Table 4.2**Alternative scenarios: Foreign growth and interest rate assumptions**

	2010	2011	2012
CP11-scenario			
Real GDP growth	2.1	1.7	1.8
Unemployment (per cent of the labour force)	4.0	3.8	3.7
Public balance (per cent of GDP)	-2.9	-4.0	-4.6
Structural public balance (per cent of GDP)	-1.7	-1.1	-0.9
EMU debt (per cent of GDP)	43.6	43.0	47.4
Scenario based on the common external assumptions			
Real GDP growth	2.1	1.8	1.4
Unemployment (per cent of the labour force)	4.0	3.8	3.9
Public balance (per cent of GDP)	-2.9	-4.0	-4.6
Structural public balance (per cent of GDP)	-1.7	-1.1	-0.9
EMU debt (per cent of GDP)	43.6	43.0	47.6

Note: The public balance in 2012 and the debt from 2012 onwards are affected by the one-off repayment of voluntary early retirement contributions, equivalent to some 1.6 per cent of GDP, cf. *chapter 3*.

Source: Own calculations based on the ADAM model.

A model simulation incorporating the effects of the common external assumptions yields a largely unchanged GDP growth in 2011 as higher export market growth offsets the effect of higher interest rates, *cf. table 4.2*. In 2012, the common external assumptions lead to lower growth as both lower external growth and higher interest rates dampen demand. The resulting GDP growth is less than the EU Commission's forecast for Denmark in 2012.

The common external assumptions have only marginal effects on public finances, however, and the public balance is thus unchanged in both 2011 and 2012. This is because the budget impact of lower activity in 2012 is offset by higher revenues from the North Sea due to higher oil prices.

4.1.2 Positive and negative scenarios

As mentioned, uncertainties about the economic outlook run in both directions and the sensitivity to changed conditions is illustrated in two alternative scenarios.

1. *A positive scenario where the normalization of domestic demand proceeds faster than expected, specifically through faster private consumption growth. This scenario can be viewed in light of the fact that the households' savings ratio rose to historically high levels during the crisis and that indicators now show signs of stabilization on the housing and labour markets.*
2. *A negative scenario where both domestic and foreign interest rates are higher along the entire yield curve, e.g. deriving from a more rapid normalization of monetary policy in the euro area to guard against medium-term inflationary pressure while not reflecting improved economic conditions (noting also the more rapid increase in short-term interest rates in the external assumptions above).*

In the positive scenario the propensity to consume is increased gradually by approx. 1¼ percentage points from 2011 to 2014. The stronger domestic demand adds to GDP, and unemployment is reduced to below 3 per cent of the labour force. The budget balance improves mainly as a result of lower unemployment outlays and higher revenue from indirect taxes. The actual balance is in this scenario close to balance in 2014 and EMU debt is approx. 2¼ per cent of GDP lower than in the main scenario, *cf. table 4.3*.

Table 4.3
Alternative scenarios – positive and negative scenario

	2011	2012	2013	2014
Positive scenario				
GDP growth	2.1	2.2	2.4	2.0
Unemployment (per cent of the labour force)	3.7	3.3	3.0	2.7
Public balance (per cent of GDP)	-3.8	-4.1	-1.0	-0.2
- of which pension yield taxation	0.2	0.9	0.9	1.0
EMU debt (per cent of GDP)	42.8	46.7	46.5	43.9
Negative scenario				
GDP growth	1.4	0.8	1.7	1.6
Unemployment (per cent of the labour force)	4.0	4.4	4.7	4.9
Public balance (per cent of GDP)	-4.2	-6.0	-3.0	-2.6
- of which pension yield taxation	0.2	0.2	0.8	0.9
EMU debt (per cent of GDP)	43.2	49.0	50.8	50.6
Convergence Programme 2011				
GDP growth	1.8	1.8	2.1	1.8
Unemployment (per cent of the labour force)	3.8	3.7	3.6	3.5
Public balance (per cent of GDP)	-4.0	-4.6	-1.8	-1.2
- of which pension yield taxation	0.2	0.9	0.9	1.0
EMU debt (per cent of GDP)	43.0	47.4	48.0	46.4

Note: The public balance in 2012 and the debt from 2012 onwards are affected by the presumed single lump sum payment of voluntary early retirement contributions of approximately 1.6 per cent of GDP, *cf. chapter 3*.

Source: Own calculations based on the ADAM model.

In the negative scenario, the domestic and foreign interest rates permanently increase by 1 percentage point. This leads to a deterioration of the budget balance by 0.2 per cent of GDP in 2011 and by 1.2 to 1.4 per cent of GDP in 2012 to 2014. The budget deficit is thus 2.6 per cent of GDP in 2014 against 1.2 in the main scenario, and EMU debt has increased by close to 4 per cent of GDP. The sensitivity of public finances to short term interest rate is thus substantial.

One reason for the deterioration of the public balance especially in 2012 and 2013 is that the increases in interest rates reduce revenues from pension yield taxation^{1,2}. This is because

¹ It is assumed that the losses on pension assets imply that a negative tax of approximately 1 per cent of GDP can be forwarded to the following years. This is subject to great uncertainty and may vary significantly depending on, among other things, the development of the stocks prices, bond yields and assumptions about the forwarding of negative revenue from previous years.

² The reduction in revenues from the pension yield taxation in the short term has the nature of a postponement of tax revenues. Higher interest rates will eventually increase revenues, since higher interest rates means higher of

the rise in interest rates will lead to significant capital losses on the taxable bond portfolios of the pension companies, whereby the revenue from the pension yield tax is reduced considerably. The estimated revenues from pension yield taxation in 2011 of 0.2 percent of GDP is not reduced further³, but the revenue is reduced by 0.7 per cent of GDP in 2012 and 0.1 per cent of GDP in 2013 and 2014, because of negative taxes carried forward. The loss of revenue from the pension yield tax due to higher interest rates is not permanent and higher interest rates only have a modest impact on fiscal sustainability.

The increase in interest rates reduces economic activity, increasing unemployment to almost 5 per cent. This aggravates the public balance further through the automatic stabilizers. Simultaneously the interest payments on public debt are increased.

The resulting GDP level is almost 2 per cent lower in 2013 than in the main scenario, and the deficit on the public balance is equivalent to 3 per cent GDP (on a national accounts basis). On EDP basis the deficit for 2013 is thus still below the 3 percent limit in the Stability and Growth Pact in the scenario. Uncertainties about the actual balance are significant in light of a number of volatile income components such as pension yield tax and revenues from the North Sea, as well as the rather large cyclical sensitivity of Danish public finances.

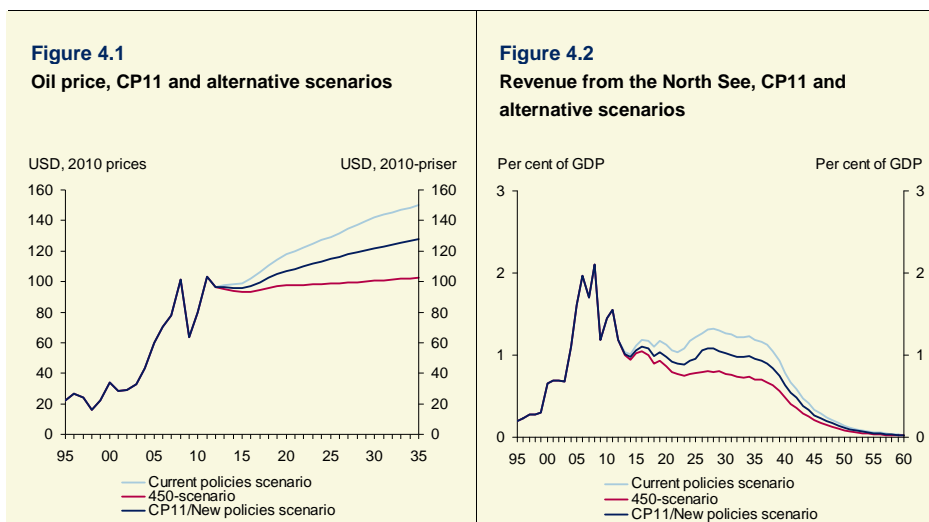
4.1.3 Scenario with alternative oil prices

The International Energy Agency (IEA) presents in its latest World Energy Outlook from the autumn of 2010 three scenarios for oil prices. In the baseline scenario for oil prices (new policies scenario) it is assumed that the announced plans on energy policies are realized, including in cases where concrete actions have not yet been implemented. In one alternative scenario, the oil price is estimated on the basis of unchanged energy policies (*current policies scenario*). In this scenario, the demand for oil and hence oil prices are higher than in the new policies scenario. In a second alternative scenario it is assumed that energy policy initiatives are on a scale that limits the global temperature rise to 2 °C (*450 Scenario*). In this scenario, the demand for and the price of oil is lower than in the new policies scenario.

The CP11 projection is based on the oil price from the IEA's central scenario. In this scenario the oil price rises from approx. 80 USD per barrel in 2010 to just over 107 USD per barrel in 2020 and approx. 128 USD per barrel in 2035, both measured in 2010-prices. After 2035 (the end of the IEA forecast horizon) the oil price is assumed to follow general price developments. Oil prices in the alternative scenarios are illustrated in *figure 4.1*.

return on pension assets. Measured in present value a higher interest rate thus strengthens income from pension yield taxation.

³ In the forecast from December 2010 it is estimated that the return on pension assets will in total be negative in 2011. The estimated pension yield tax revenue of 3.5 billion DKK reflects that the returns of some pension funds are likely to be positive.



Source: IEA, the Ministry of Taxation and own calculations.

The IEA's alternative scenarios affect projected revenues from the North Sea. The lower oil prices in the *450 scenario* weakens fiscal sustainability by 0.1 per cent of GDP compared to the main projection. Conversely, the higher oil price in the *current policies scenario* strengthens sustainability by 0.1 per cent of GDP through increased North Sea revenues.

Table 4.4
Alternative scenarios for the development in the oil price - impact on the fiscal sustainability

	Current policies scenario	450-scenario
Per cent of GDP		
Change in fiscal sustainability	+0.1	-0.1

Source: Own calculations.

The calculations do not include changes in production forecasts or investment in North Sea facilities that may flow from changes in oil prices. Similarly, the impact of the oil price on energy use and costs of meeting the CO₂ reduction targets are not included.

4.2 Comparison with Convergence Programme 2009

4.2.1 Changes in GDP growth and public finances since CP09

The growth in GDP was lower in 2009 than expected in CP09, which was published in February 2010, *cf. table 4.5*. Conversely, growth in 2010 is preliminarily estimated to 2.1 per cent, which is higher than expected in CP09. The business cycle is assumed to recover gradually towards 2015 with growth rates of approx. 2 per cent per year, and the GDP growth in 2011-15 is thus expected to be moderately lower than in CP09.

This is partly because the assumption about underlying productivity growth has been revised down from 2 per cent per year to 1½ per cent per year in the private sector (*cf. Chapter 2 and Annex A1*). Conversely, the proposals for reform of, e.g., the retirement system are estimated to increase growth potential by approx. ½ percentage points per year in 2014-20.

Table 4.5
Comparison with Convergence Programme 2009

	2008	2009	2010	2011	2012	2013	2014	2015	2020
GDP growth (per cent)									
CP09	-0.9	-4.3	1.3	1.6	2.0	2.3	2.6	2.6	1.4
CP11	-1.1	-5.2	2.1	1.8	1.8	2.1	1.8	2.4	2.0
Difference	-0.2	-0.9	0.8	0.2	-0.2	-0.2	-0.8	-0.2	0.6
Public balance (per cent of GDP)									
CP09	3.4	-3.0	-5.5	-4.2	-3.2	-1.9	-0.8	0.0	-1.0
CP11	3.3	-2.8	-2.9	-4.0	-4.6 ¹⁾	-1.8	-1.2	-0.5	0.0
Difference	-0.1	0.2	2.6	0.2	-1.5	0.1	-0.3	-0.5	1.0
Public net debt (per cent of GDP)									
CP09	-6.5	-3.8	1.8	6.0	8.4	9.4	9.4	8.5	7.5
CP11	-6.6	-4.6	-1.1	2.9	7.4	8.4	8.7	8.4	5.6
Difference	-0.1	-0.8	-2.9	-3.0	-1.0	-1.0	-0.6	-0.2	-1.9
EMU debt (per cent of GDP)									
CP09	33.4	38.5	41.8	46.2	48.3	48.1	46.1	45.0	44.0
CP11	34.5	41.8	43.6	43.0	47.4	48.0	46.4	46.1	44.0
Difference	1.1	3.3	1.8	-3.2	-0.9	-0.1	0.4	1.1	0.0

Note: In the CP11 projection, the public net assets of 1.1 per cent of GDP in 2010 are reversed to a net debt of 2.9 per cent of GDP in 2011. The reduction in net assets reflects primarily a reduction in state financial assets, while gross debt is declining slightly in per cent of GDP.

- 1) The deficit in 2012 (and EMU debt from 2012 onwards) in CP11 is influenced by the single lump sum repayment of voluntary early retirement contributions on approx. 1.6 per cent of GDP, *cf. chapter 3*.

Source: Own calculations.

The public deficit in 2009 amounts to 2.8 per cent of GDP, whereas it in CP09 was estimated to 3 per cent of GDP.

The deficit on the public finances is in 2010 estimated to 2.9 per cent of GDP and is thus significantly less than in CP09, in which a deficit of approx. 5½ per cent of GDP was projected. The improvement primarily reflects higher revenues from pension yield taxation in the light of sharp increases in stock and bond prices through 2010, *cf. Chapter 3*, but also that the unemployment rate has risen less than expected.

The estimates for the public balance in 2011-13 have been revised up slightly compared to CP09, leaving aside the "one-off" repayment of voluntary early retirement contributions,

which reduces the budget balance by approx 1½ per cent of GDP in 2012. The lower deficits are partly attributable to the fact that the cyclical situation is somewhat better than expected in CP09. As a result of the presented reforms etc. the public balance in 2020, as a whole, is estimated to be improved by approx. 1 per cent of GDP compared to CP09 (i.e., compared to the CP09 projection including requirements for consolidation and reforms to strengthen public finances). In CP09, the projected deficit was 1 per cent of GDP in 2020.

The public net asset position of approx. 6½ per cent of GDP in 2008 in CP11 is reversed to a public net debt position of approx. 8¾ per cent of GDP towards 2013, after which net debt is reduced to approx. 5 ½ per cent of GDP forward 2020. The increase in net public debt by 2013 is less than expected in CP09, and in 2020 net debt is approx. 2 per cent of GDP lower than in CP09.

In total, the EMU debt (in per cent of GDP) is estimated to increase towards 2013 and then decline slightly toward 2020. The EMU debt increases by approx. 13½ per cent of GDP during 2008-13, slightly less than in CP09 in which the EMU debt was expected to increase by 14¾ per cent of GDP from 2008-2013. Towards 2020 EMU debt is reduced to approx. 44 per cent of GDP.

Compared to the projection in CP09, CP11 includes new information in a number of areas. This includes, in particular, a revised short term outlook, an updated population forecast, the Fiscal Consolidation Agreement of May 2010 as well as the more recent reform proposals.

4.3 Changes in the sustainability indicator since CP09

In the Convergence Programme 2009 (CP09) the fiscal sustainability indicator in a scenario without further policy changes – and thus excluding the Fiscal Consolidation Agreement, May 2010 – was estimated at approx. -1¼ per cent of GDP, *cf. table 4.6*.

In Convergence Programme 2011 (CP11) the sustainability indicator in the scenario without further policy changes is estimated at approx. -0.35 per cent of GDP. The sustainability indicator has thus improved by approx. 0.9 per cent of GDP.

The change in the sustainability indicator from CP09 (without the requirement for consolidation and reforms) to CP11 (basic scenario without new policies) primarily reflects the strengthening of public finances obtained through Fiscal Consolidation Agreement.

In addition assumptions have been updated with respect to the demographic projections (*Statistics Denmark and DREAM population forecast, 2010*) and the short-term cyclical outlook, based on *Economic Survey, December 2010*.

Furthermore, some of the projection methods underlying the medium and long term projections have been reviewed. Overall, the changes in methods since CP09 are neutral with respect to the fiscal sustainability indicator, *cf. appendix 1*.

The main changes in the sustainability indicator reflect the following (*cf. Table 4.6*):

- The Fiscal Consolidation Agreement from May 2010 strengthens long term fiscal sustainability by some 1.15 per cent of GDP, equivalent to approx. 21 billion DKK. The Agreement is gradually phased in from 2010 with full effect (including effects of unemployment benefit reform) from 2015. As a consequence of gradual phasing-in, the impact on the sustainability indicator (discounted to the base year 2009) is slightly smaller than the strengthening of the structural balance of approx. 24 billion DKK.
- The population forecast from DREAM (an independent analytical unit) and Statistics Denmark from 2010 is used for forecasting population growth and -composition, labour force, life expectancy etc. Compared to DREAM's 2009 population forecast, which formed the basis in CP09, the population is larger in 2010 forecast, mainly because of higher net immigration. The increase in longevity (for 60-year-olds) is generally in line with the 2009 forecast. Overall the new population forecast affects sustainability marginally by approx. -0.05 per cent of GDP, equivalent to approx. -1 billion DKK.

Table 4.6
Changes in the sustainability indicator from CP09 to the CP11
(in the basic scenario without new initiatives)

	Billion DKK	Per cent of GDP
Convergence Programme 2009 (without new initiatives)	-24	-1.3
The Fiscal Consolidation Agreement, may 2010	21	1.15
CP09 incl. The Fiscal Consolidation Agreement	-3	-0.15
Statistics Denmark and Dreams coordinated population forecast, 2010	-1	-0.05
Structural primary balance in 2011	-3	-0.2
<i>Including:</i>		
- Number of early pensioners	-4	-0.25
- New production forecast for North Sea and new oil price assumptions etc.	2	0.10
- Other factors combined, including increased subsidies, EU contributions, etc.	-1	-0.05
Changed methodology	0	0
Convergence Programme 2011	-7	-0.35

Note: Amounts in billions DKK (2011 level) is calculated as the sum of per cent of GDP times cyclically adjusted GDP in 2011 (approx. 1840 billion DKK). Due to rounding, sums of contributions do not necessarily add to totals.

Source: Own calculations.

- Since CP09, which was based on Economic Survey, December 2009, three Economic Surveys have been published in May, August and December 2010 respectively. The latter form the basis for the *Reform Agenda 2020* and CP11, but it has been updated in light of subsequent information of special relevance for public finances. The structural primary balance in 2011 (i.e. last cyclical year in CP09) is weakened by 0.2 per cent of

GDP or about 3 billion DKK compared to CP09 (CP09 including the improvements in the Fiscal Consolidation Agreement).

- In the updated short term outlook, the number of disability pensioners in 2010 is approx. 12,000 higher than in Convergence Programme 2009 and the estimate for 2011 is revised upwards by approx. 10,000 people. Up to 2015 (and 2018) the number of disability pensioners is projected based on inflow rates by gender, age and origin computed on the basis of Income Register data for 2008. The projection further takes into account the excess mortality of the disability pensioners compared to general population, while increasing educational attainment is assumed to dampen the increase in the number of disability pensioners. In 2015, the number of disability pensioners is revised upwards by approx. 12,000 compared to the Convergence Programme 2009. This weakens the sustainability indicator by almost ¼ per cent of GDP, equivalent to just over 4 billion DKK⁴.
- The estimates on the tax revenues from oil and gas extraction in the North Sea have been updated in light of the DEA's most recent forecast for the North Sea production (May 2010) and the International Energy Agency's latest assessment of oil prices, of which the so-called *New Policies Scenario* constitutes the baseline scenario, cf. section 4.1. Overall, the effect of increased North Sea revenues is estimated to strengthen fiscal sustainability of approx. 0.1 per cent of GDP, equivalent to approx. 2 billion DKK.
- The methodological review conducted in connection with *Reform Agenda 2020* is overall neutral for public finances (cf. appendix A1).

Hence, overall the fiscal sustainability indicator is estimated at approx. -0.35 per cent of GDP, equivalent to approx. -7 billion DKK in the scenario without new policy initiatives.

4.3.1 Sustainability indicator in the main scenario incl. the Reform Agenda 2020

The proposals for reforms of the retirement system, student grants and early retirement and flex jobs are estimated to strengthen the fiscal sustainability by a total of approx. 0.9 per cent of GDP, cf. table 4.7 and chapter 5.

⁴ The marginal effect with unchanged methodology is stated based on the projection to 2015, excl. methodological changes. The upward adjustment is equivalent to the increase in the last cyclical year in CP09, i.e. in 2011. The effect on the total number of disability pensioners is increased in connection with the increasing age limits for voluntary early retirement and ordinary pension as of 2019 under current policies (cf. the Welfare Agreement).

Table 4.7
Contributions from the reform initiatives etc. to the sustainability indicator

	Billion DKK	Per cent of GDP
1. Convergence Programme 2011 (without new initiatives)	-7	-0.35
2. Convergence Programme 2011, main scenario	10	0.5
Difference (2.-1.)	17	0.9
Of which:		
- Reform of the retirement system	13	0.7
- Reforms of the student grant and early retirement system	3	0.2
- Expenditure on defence etc.	1	0.1

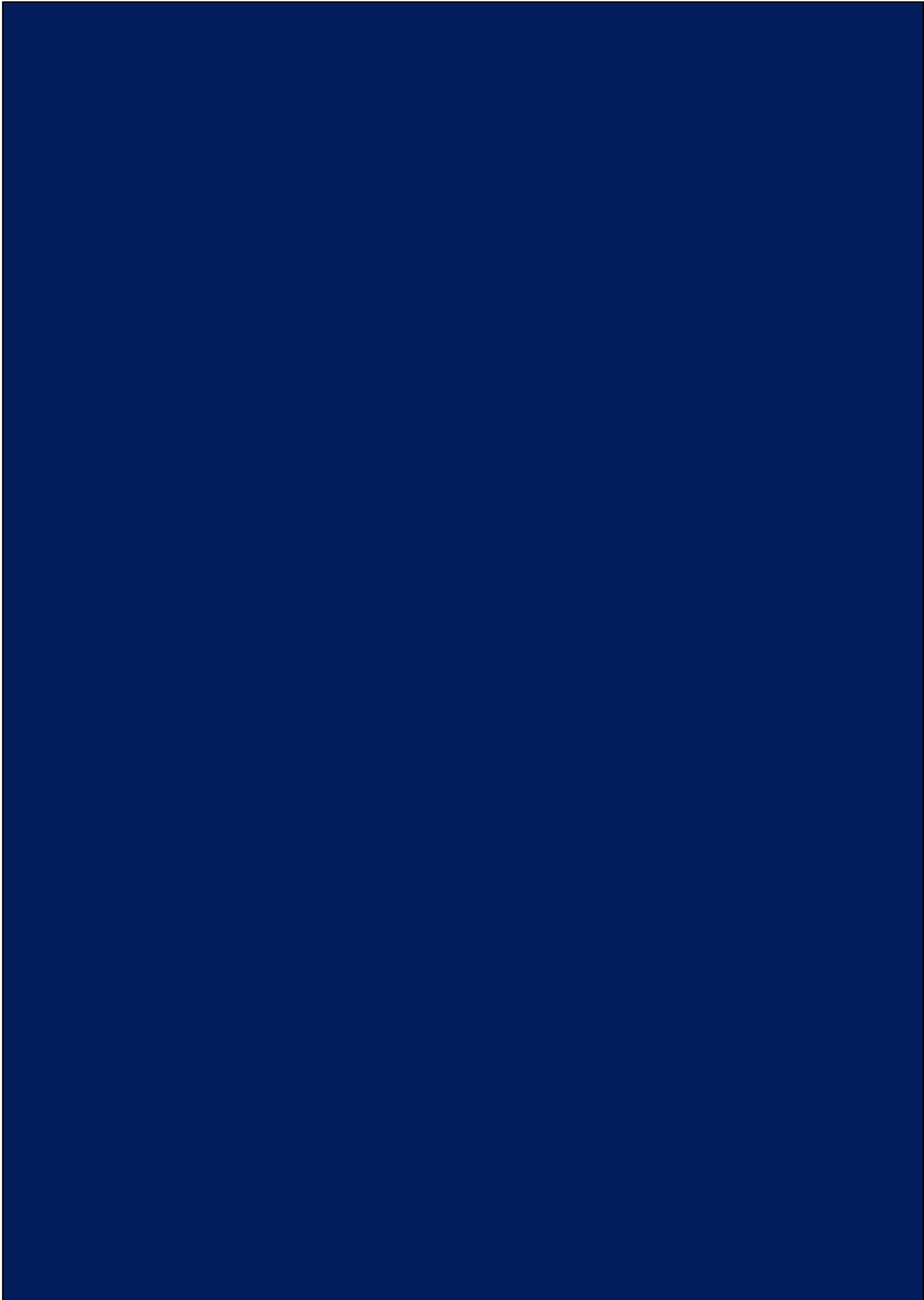
Note: Defence spending etc. includes efficiency improvements in the armed forces, which can release 2 billion annually from 2015 onwards. Real growth in public consumption is overall 0.8 per cent annually in 2014-20. It is slightly smaller than in the baseline scenario without new policies. The tax freeze is incorporated to the year 2020.

Source: Own calculations.

In addition, it is assumed that the real growth in public consumption constitutes approx. 0.8 per cent per year from 2014 to 2020. This is the growth rate made possible by the reforms while ensuring structural balance in 2020. Real growth in public consumption is slightly less than under the technical assumptions in the scenario without new policies (about 0.9 per cent per year in 2016-20). To ensure approximately the same resources available for frontline services in municipalities and regions, defence spending is reduced by DKK 2 billion annually from 2015 onwards.

The initiatives are sufficient to ensure structural balance in 2020. While meeting the requirement that the structural deficit should be no higher than 0,5 pct. of GDP towards 2020, this is the key medium-term target for fiscal policy. After 2020, the projections indicate a long span of years with deficits, but from around 2040/2045 (when the indexation of the pension age agreed in the Welfare Agreement has full effect and the older cohorts begin to diminish) the public balance improves again with a resulting surplus on the primary balance. As a result of the primary surplus in the last half-century the sustainability indicator is positive in this scenario corresponding to approx. ½ per cent of GDP, *cf. chapter 5*⁵.

⁵ For comparison, the sustainability indicator in the CP09 projection incl. requirements for consolidation and reforms around was 0.2 per cent of GDP. The higher sustainability indicator in CP11 is due to the reform initiatives etc. that ensure structural balance in 2020, where CP09 had a structural deficit of 1 per cent of GDP. The reforms strengthen the balance in 2020 by more than they do for long term sustainability, in particular because of the 5 year advancement of the Welfare Agreement.



5. Long term projection and fiscal sustainability

5.1 Projection principles and the effects of the proposal for a retirement reform

The long-term projection in the convergence programme is founded on the scenario to 2020, in which the business cycle is normalized (by 2015) and explicit policy priorities are incorporated to 2020. For the years after 2020, the projection rests on stylized assumptions, which essentially assume unchanged structures in the economy and unchanged policies, where “unchanged policies” include the effects of certain already-decided measures and reforms reaching far ahead in time. Hence, the scenarios take into account the projected effects of the Welfare Reform after 2020 and/or the proposed reforms on retirement, study grants and disability pension and flex job.

Fiscal sustainability implies that the tax and expenditure priorities that have been decided up to 2020, and the public expenditure path that occurs in the projection thereafter, can be financed without raising the tax burden and so that net public debt stabilizes as a share of GDP in the long term. Hence, the determination of fiscal sustainability can be seen as a “consistency check” of whether the policies planned until 2020 can be sustained after 2020, given unchanged taxes etc. In this vein, the projection for the period after 2020 reflects an extrapolation of the economic structures as they appear in 2020, and not an actual forecast.

The following *calculation principles* are applied after 2020:

- Public consumption expenditures are projected on the assumption that nominal expenses per user grow in line with wages and the number of users of public services evolves in line with the calculated impact of changing demographics. Public sector wages grow in line with private wages, and public net purchases of goods and services from the private sector make up a constant share of public consumption expenditures. These principles imply that the number of employees (whether in the private or public sector) providing tax-financed services can be unchanged relative to the number of users of public services and that the implied real growth in public consumption expenditure will depend on private sector productivity growth.
- Income benefits are assumed to rise in line with private sector wages such that income replacement rates remain constant (e.g., in case of job loss or retirement).

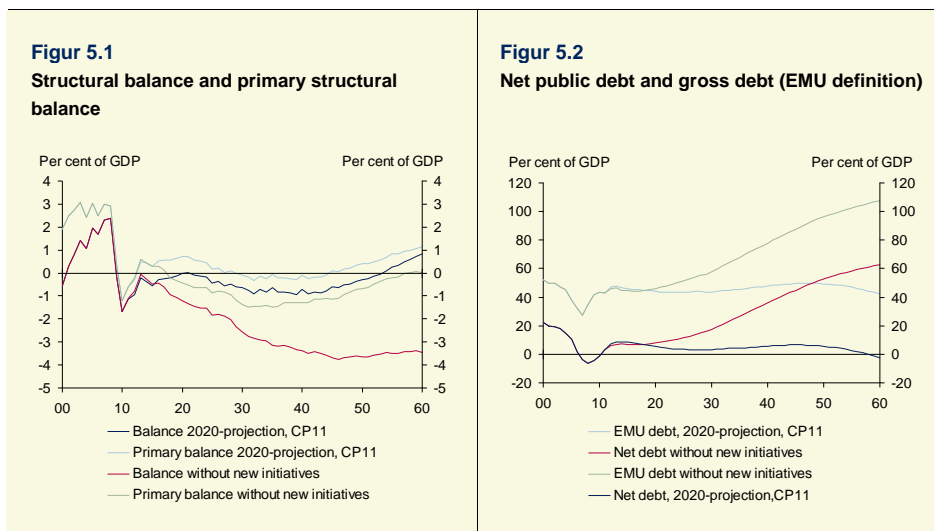
- Labour participation rates, and the propensities at which various income benefits are received, are assumed to be constant by age, gender and origin. The overall (structural) unemployment rate is constant (at 3½ per cent). Further included is a contribution to employment from a gradually higher level of education in the workforce, and for immigrants also gradually higher employment rates as the average number of years of residence in Denmark increases. The assumed effects of the Welfare Agreement are added to these basic assumptions (including the agreed indexation of the age thresholds in the Voluntary Early Retirement Pension scheme (VERP) and public old-age pension in line with longevity). In addition, the effects of the proposals for reforms of retirement, study grants, disability pension and flex jobs are included in the main projection.
- The long-term projection of public investment is derived from the principle that the ratio between the gross public capital stock and public production of goods and services is constant after 2020.
- Public subsidies and net foreign transfers are constant relative to GDP.
- The nominal principle of the tax freeze is included until 2020. After this, the tax burden is unchanged. Hence, tax rates in percent remain constant (in line with the tax freeze) while excise duties etc. in nominal amounts are assumed indexed to prices.
- The revenue from taxation of North Sea activities is projected on the basis of The Danish Energy Authority's long run forecast of oil and gas production and the oil price projections of the International Energy Agency (IEA) from 2010.
- A gradual improvement in energy efficiency is assumed in both consumption and production. The estimated fiscal consequences of the Energy and Climate agreement 2020 are also included. This mainly concerns lower revenue from energy taxes because of lower consumption of fossil fuels relative to GDP.

In the 2020-scenario, which includes the effects of the proposed reforms of retirement, study grants and disability pension, the structural balance is estimated not to fall below -1 per cent of GDP, while the primary structural balance is expected to show surpluses in most years, *cf. figure 5.1*. Up until around 2050, the public debt will be stable. Thereafter the calculations point with some uncertainty to a reduction in debt levels due to an increasing workforce and a decline in the number of persons outside the labour market, *cf. figure 5.2*.

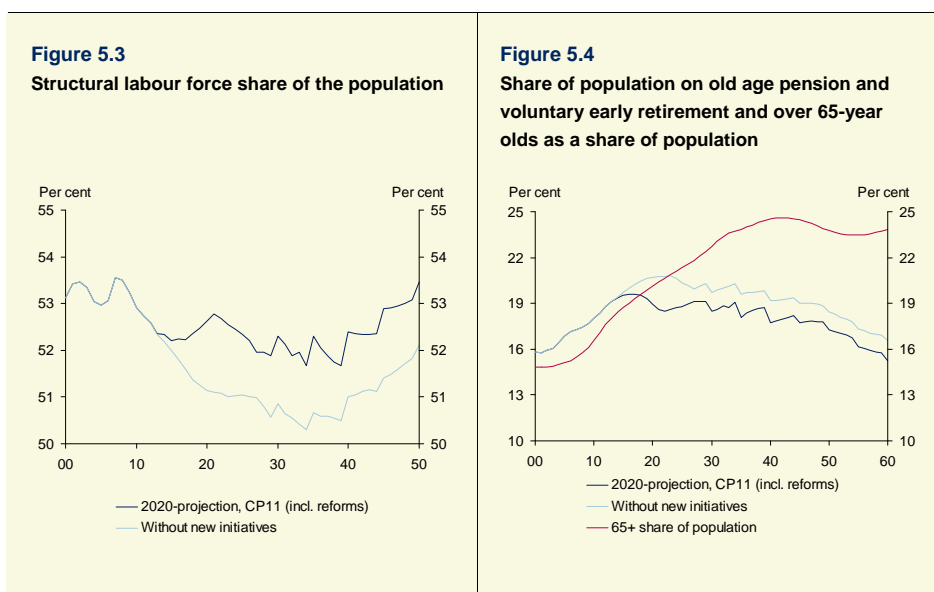
In a scenario that does not include new initiatives – chiefly the proposal for retirement reform – the structural deficit might, on the contrary, reach levels up to 4 per cent of GDP in 2050. In this scenario the fiscal consolidation agreement is included, while it is assumed that real growth in public consumption is halved compared to the last 30 years and that unemployment can be kept at around 3½ per cent in average over the business cycle. In the scenario, public debt increases quite sharply and fiscal policy does not meet the sustainability requirement.

The growing deficit towards 2050 is primarily caused by relatively large older cohorts and especially many pensioners etc. in this period compared to the workforce, while revenues from

the North Sea also fall. Initiatives in the proposed reforms ensure a larger workforce, thus countering the tendency for a large and growing deficit, *cf. figure 5.1-5.4.*



Source: Statistics Denmark and own calculations.



Source: Statistics Denmark and own calculations.

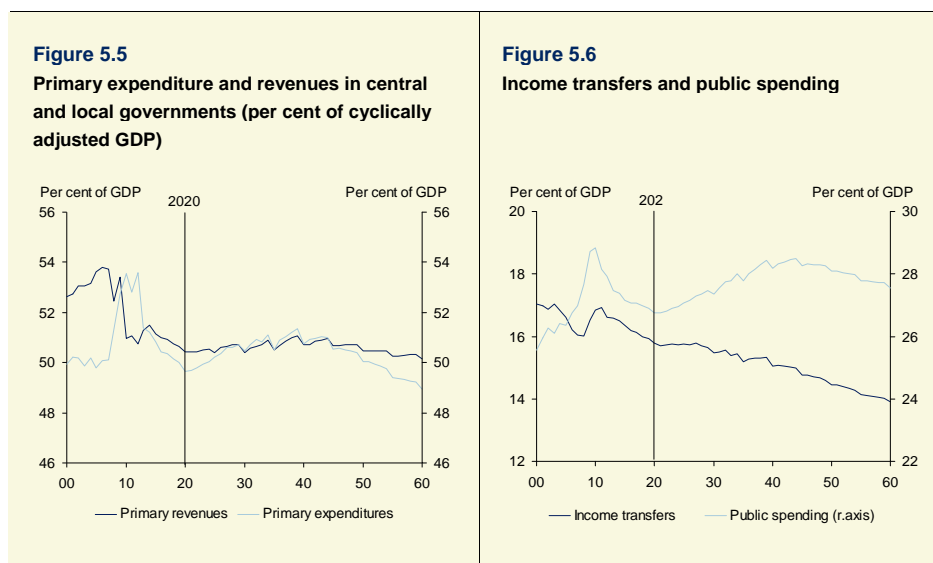
The developments in primary revenues and expenditures after 2020 are - beyond the retirement and disability pension reform, etc. - caused mainly by increases in spending on health and elderly care, higher tax revenue from payments from private pension schemes, declining

tax revenue from energy taxes and lower revenues from North Sea activities as the oil and gas reserves are depleted.

The primary revenue is relatively constant as a share of GDP in the projection after 2020, while primary spending grows as a share of GDP until 2030-40 and then decreases, cf. figure 5.5.

The increase in spending towards 2030-40 reflects in particular the demographic pressure for spending on health and elderly care, and government consumption thus grows as a share of GDP from 2020 to about 2040, cf. figure 5.6. Subsequently, the public consumption share declines again, mainly as a result of the indexation of the statutory ages for pensions and early retirement (until the VERP scheme according to the proposal is phased out), thereby increasing the labour force and thus GDP (without affecting projected spending). Moreover, older cohorts, according to the population forecast, become relatively smaller after 2040.

The projection of health expenditure includes the effects of so-called "healthy aging" and it is therefore assumed that the age-related health costs are reduced with increasing life expectancy and better health, cf. *Towards new goals - Denmark 2015, Technical Background Report to the 2015 Plan, December 2007*. Especially since the beginning of the millennium, health expenditure has increased more than the technical projection principles would imply.



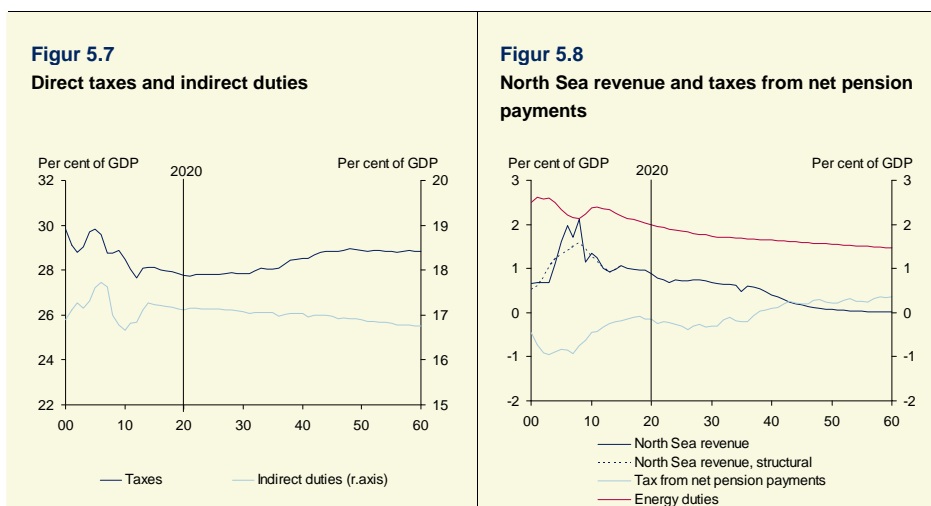
Note.: Expenditures in figure 5.5 and 5.6 are relative to GDP corrected for cyclical effects. Towards 2015 the expenditures are roughly corrected for cyclically determined changes in unemployment benefits etc. Revenues in figure 5.5 are corrected for temporary deviations from the structural level of revenue from the North Sea activity and pension yield tax.

Source: Statistics Denmark and own calculations.

In the projection transfer expenditure declines as a share of GDP, partly due to the reforms of student grants, disability and retirement. In the longer term, the decline in the transfer expen-

diture share is mainly due to lower old age pension expenses as the retirement age is indexed to longevity combined with the effect of a shift in the composition of the population as there will be fewer pensioners relative to the workforce, and hence less pensions expenses relative to GDP. Meanwhile, the expansion of labor market pensions will in time increase the share of pensioners with an additional income, thus reducing expenses for supplementary (means-tested) pension, housing allowances, etc.

Revenues from direct taxes (excluding corporate taxes from the carbon tax) are relatively constant as a share of GDP from 2015 to about 2030 after which they increase gradually, *cf. figure 5.7*. The increase largely reflects the impact of tax revenues stemming from rising (net) pension payments as the labor market pension system matures, *cf. figure 5.8*. Revenue from North Sea oil and gas declines as a share of GDP until 2050 as the resources are depleted.



Note: Revenues from direct taxes excludes corporate taxes from the carbon tax. Revenues from direct taxes in figure 5.7 and net pension payments in figure 5.8 are shown a 3 years moving average.
Source: Statistics Denmark and own calculations.

Revenues from indirect taxes as a share of GDP rise until 2014, partly due to an expected normalization of the business cycle and partly as a result of the tax reform in 2010 (Spring package 2.0). From 2014 to 2020 revenues from indirect taxes are reduced partly as a result of the Energy Agreement (reducing energy consumption in 2020) and the tax freeze. After 2020, revenues continue to decline slightly, mainly due to decreasing energy consumption as a share of GDP and a higher share of renewable energy that reduces the revenue from energy taxes.

5.2 Structural balance in 2020 ensures (at least) fiscal sustainability

The target of a balanced budget by 2020 - and the concrete initiatives to achieve this - implies that fiscal policies also meet the requirement of (at least) fiscal sustainability. The sustainability indicator in this scenario is estimated at around 0.5 per cent of GDP, when all reforms are implemented in full, cf. box 5.1.

Broadly defined fiscal sustainability implies that the policies planned towards 2020 can be sustained in the years after, while public debt stabilizes as a share of GDP in the very long run – given the assumptions on which the long term projections are based.

Fiscal sustainability, however, does not make special requirements on the profile of the public balance over time, or at which level the public debt will be stabilized in the long run. The requirement of fiscal sustainability is thus a necessary but not sufficient requirement in relation to the medium- and longer-term challenges for public finances.

Box 5.1**Impact on public finances of the presented reforms and better expenditure management**

In the scenario without new initiatives, the sustainability indicator amounts to approx. -0.4 per cent of GDP.

Taken together, the presented reforms strengthen fiscal sustainability by approx. 0.9 per cent of GDP, cf. table a. The reform of the retirement system is estimated to strengthen the fiscal sustainability by approx. 0.7 per cent of GDP (around 13 billion), of which some 2 billion DKK owes to the advancement of the Welfare Agreement, and approx. 11 billion DKK reflect the phasing out of voluntary early retirement scheme.

The presented reform of the student grant system (SU) is estimated to strengthen the fiscal sustainability by approx. 1 billion DKK, mainly due to higher labour supply and employment when young people complete education earlier.

The reform of disability pensions and flex-jobs is estimated to strengthen the fiscal sustainability by approx. 3 billion DKK, which is mainly due to reduced costs in the two programs. The effect on employment is estimated to strengthen the fiscal sustainability by ½ -1 billion DKK.

With a reduction in defence expenditures the fiscal sustainability is strengthened with an additional 0.1 per cent of GDP. Thus, the sustainability indicator is calculated at approx. 0.5 per cent of GDP.

The positive sustainability indicator in this scenario should be viewed in the light of the significant pressure on the public finances that persist during the first half of the 21st century despite the reforms with structural deficits of approx. 1 per cent of GDP (in the years around 2040).

The positive sustainability indicator should also be seen in light of the decrease in the average period on old-age retirement, which is caused by the indexing mechanism of the Welfare Agreement. This indexing mechanism (which is based on a constant period in old-age retirement, when the period is measured using the life expectancy of 60-year-olds) implies that the average period on old-age retirement – the period that may actually be realized in the projection when the pension period is measured using the life expectancy at the retirement age – decreases from approx. 17.2 years in 2040-50 to approx. 16.5 years in 2080-90, when.

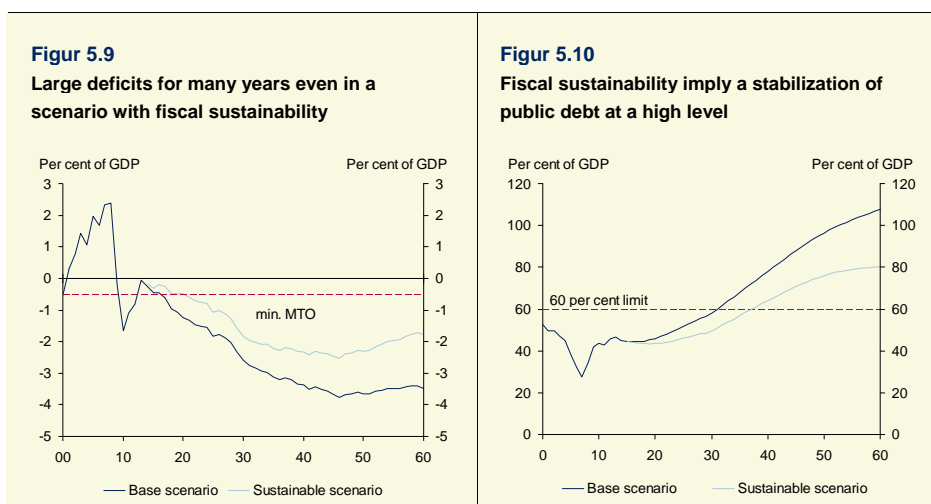
Tabel a**Impact on fiscal sustainability of the reform proposals**

Per cent of GDP	Fiscal sustainability
Scenario without new initiatives	-0,4
- Reform of the retirement system	0,7
- Reforms of the student grant and early retirement system.	0,2
Scenario incl. reforms	0,5
- Reduction in defence expenditures	0,1
CP11 scenario	0,5

A scenario with exact fiscal sustainability

According to the calculations, a permanent strengthening of the public finances of approx. 7 billion DKK on top of the Fiscal Consolidation Agreement is required to ensure fiscal sustainability in the scenario *without* the presented reforms and priorities. In a scenario where such consolidation is implemented towards 2020, the projected structural deficit is, however, around 2-3 per cent of GDP for many years, and EMU debt rises to approx. 80 per cent of GDP by 2060, cf. figure 5.9 and 5.10.

Hence, the requirements of the Stability and Growth Pact will not be met, especially in periods of economic downturns, where the public deficits can be significantly larger than the structural level. The scenario with exact fiscal sustainability therefore has, as a consequence of the large deficits and debt over a long period, an embedded risk of the financial markets losing faith in the fiscal policy.



Note: The red dotted line in figure 5.9 shows the minimum requirement for the Medium Term Objective (MTO) in the EU's Stability and Growth Pact of $-\frac{1}{2}$ per cent of GDP.

Source: Own calculations.

The sustainable scenario shows deficits on the public balance in every year until 2100, while the primary balance weakens until 2050, after which it gradually strengthens and eventually turns into a surplus¹.

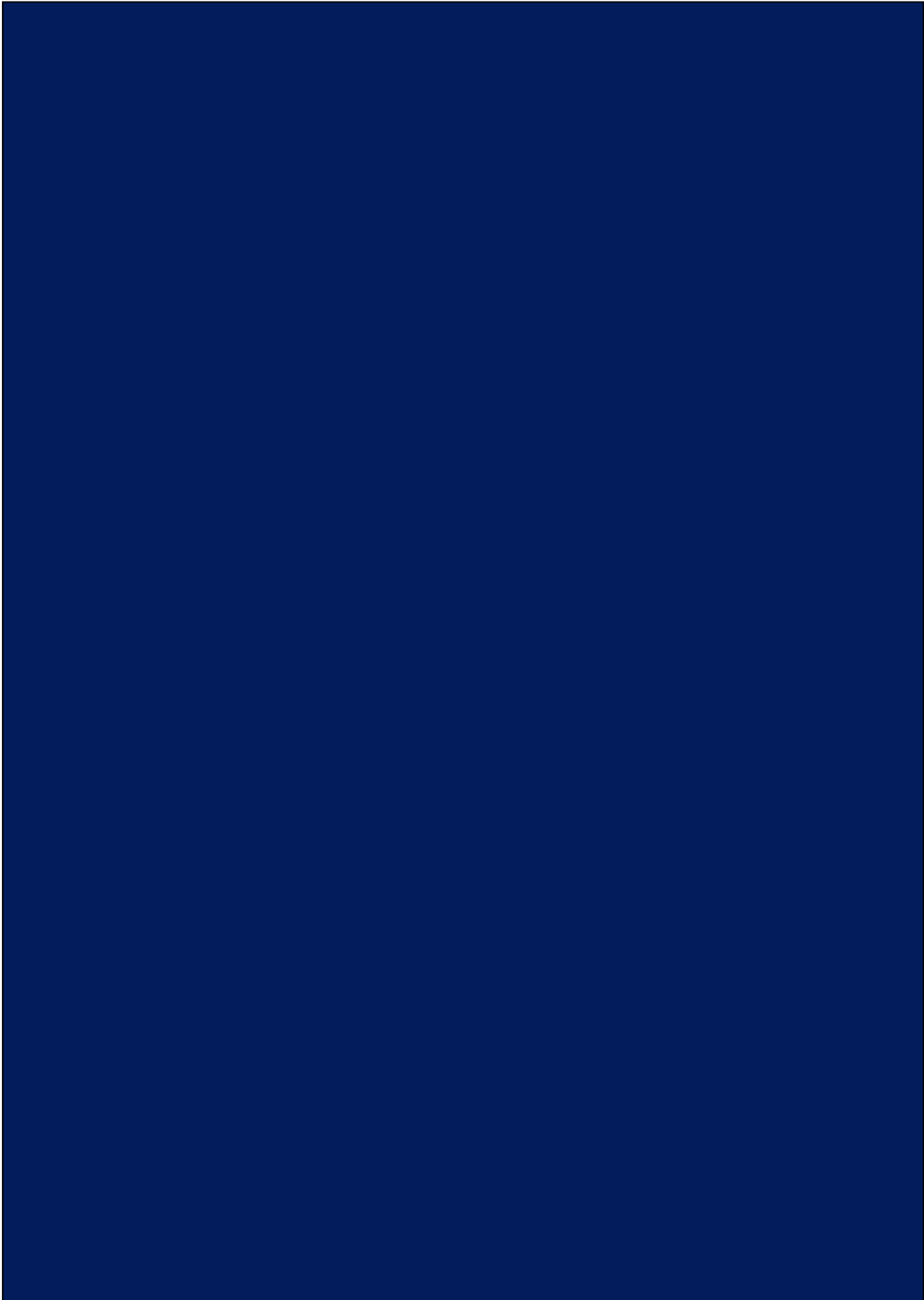
¹ The improvement in the primary balance over the long run reflects, in part, that the number of years on old-age pension is reduced for generations who can retire after 2040 (under the Welfare Agreement). I.e., the scenario (including the Welfare Agreement and a fiscal tightening of around 7 billion DKK) is sustainable in part because future generations in the projection work longer and have fewer years on old age retirement relative to the generations who may retire up until approx. 2040.

The surpluses on the primary balance in the very long run are large enough to finance the interest payments on the higher debt, which is built up over the next 40-50 years. This means that the debt gradually stabilizes relative to GDP. The fiscal policy thus meets the fiscal sustainability requirement because the primary balance is strengthened from 2050 to 2100 in the calculations.

Realization of such an improvement in the primary balance - and fiscal sustainability - places quite ambitious demands on fiscal policies and economic structures over the century. The registered unemployment rate should remain unchanged at 3½ per cent of the labour force on average over the coming decades. Growth in public consumption should be permanently lower than historically. And, in accordance with the principles of the Welfare Agreement, active decisions need to be taken every five years to increase the voluntary early retirement and old-age retirement age by up to 1 year

It is unlikely to be a credible strategy and would be risky to plan the fiscal policy towards 2020 in the expectation that these conditions will be met over such a long horizon and that the finances are thus strengthened in about 40-50 years.

In previous medium-term plans and projections, the target of structural balance (or surplus) inside the planning horizon was consistent with fiscal policies that fairly accurately met the requirement of fiscal sustainability. Hence, although the targets for the structural balance were the primary operational targets also in previous plans, there was no conflict or discrepancy between the two objectives (of structural balance/surplus or fiscal sustainability, respectively). To some extent, this has changed -- because the fiscal sustainability requirement does not preclude growing deficits in the years and decades ahead. It is therefore natural to now place even greater emphasis on structural balance as the key target for fiscal policy than in the past.



6. Public finances and institutional framework

6.1 Composition of general government expenditures

General government expenditures amount to almost 1,000 billion DKK in 2010 which corresponds to 57 per cent of GDP, *cf. table 6.1.*

Table 6.1
General government expenditures by function, 2007-2011

	2007	2008	2009	2010	2011 ¹⁾
Per cent of GDP					
General public services	6.8	7.0	7.7	7.6	7.2
Defence	1.7	1.5	1.5	1.5	1.5
Public order and safety	1.0	1.1	1.2	1.1	1.1
Economic affairs	2.7	2.5	2.9	3.0	3.0
Environmental protection	0.5	0.5	0.5	0.5	0.5
Housing and community amenities	0.6	0.6	0.6	0.4	0.4
Health	7.3	7.5	8.5	8.2	8.3
Recreation, culture and religion	1.5	1.6	1.7	1.6	1.6
Education	6.6	6.8	7.8	8.0	7.7
Social protection	21.4	21.8	24.7	25.0	24.8
Total expenditures	50.0	51.0	57.2	57.0	56.1

1) Statistics Denmark's budget statistics for 2011 and the Ministry of Finance's latest estimates for GDP in 2011.

Source: Statistics Denmark and own estimates and calculations.

As a consequence of the economic downturn which followed the global crisis, the share of general government expenditures in GDP increased from 51 per cent in 2008 to 57 per cent in 2010. The rise in the expenditures-to-GDP ratio should partly be seen in light of increases in income transfers and public consumption expenditures – e.g. health care, education and social protection areas – during the downturn. The increase in the expenditures-to-GDP ratio

reflects both automatic stabilizers, cf. the increase in income transfers, as well as a marked fiscal policy expansion and the sharp fall in production during the crisis.

The medium term projections for the Danish economy do not specify the composition of expenditures by function (COFOG). Instead a projection of general government expenditures by type of transaction, among these public consumption, income transfers and public investments, is included, cf. *chapter 3*.

6.2 Pressure on health, research and educational spending

A more efficient public sector and sharp prioritization of spending shall ensure resources going forward to core welfare areas such as health care and education.

Health care spending has for a number of years been under pressure, partly as a result of technological developments which enable treatment of more and more diseases. Furthermore, increases in the number of elderly people raise the demographic component of public spending pressures on health care.

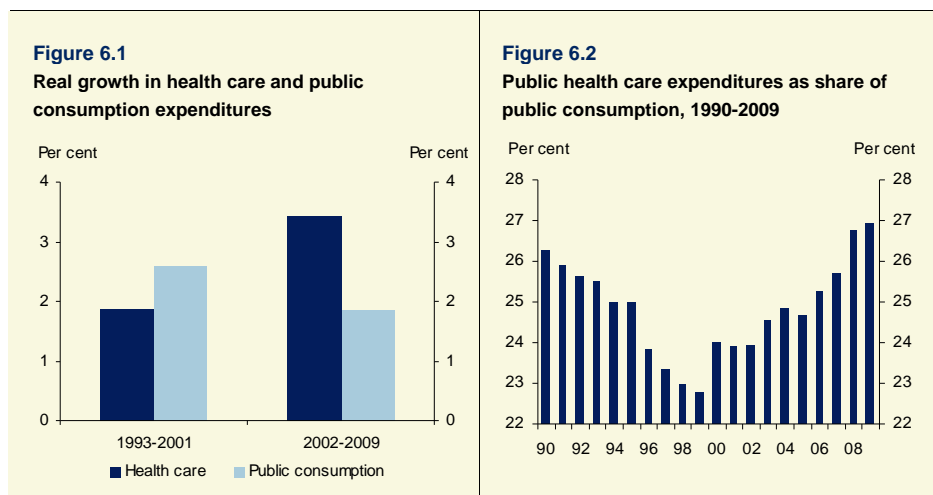
In contrast the demographic trends involve fewer pupils thereby reducing demographically-induced expenditures in primary schools. However, there will still be a pressure on educational spending to meet the ambitious objectives regarding youth education and tertiary education.

Reducing health care expenditure growth

Since 2001 health care spending has been characterized by significant growth rates. From 2001 to 2009 public spending in health care increased (in real terms) by 3½ percent per year, while total public consumption expenditures increased by 1¼ per cent per year. In contrast the increase in health care spending was lower than the increase in total public consumption for the period 1993-2001, cf. *figure 6.1*.

Simultaneously, productivity has risen and new figures from Statistics Denmark indicate that the increase in public production of health care (output) since 2001 has been larger than the increase in the resources used (input). According to the output-based figures, health care production increased by approx. 5 per cent per year from 2001 to 2008.

In light of the growth in spending, health care expenditures have constituted an increasing share of total public consumption since 2001, cf. *figure 6.2*. In contrast, health care spending decreased relative to total public consumption expenditures in the 1990's.



Note: The real growth in health care is calculated using the same price-deflator as for total public consumption.

Source: Statistics Denmark and own calculations.

The production capacity in the health care sector has increased considerably in recent years – and somewhat more than what follows from the demographic trend towards more elderly. From 2001 to 2009 3,000 more doctors and approx. 4,000 more nurses were employed in hospitals and the number of surgeries performed has increased by 40 percent in the same period.

According to the *Fiscal Consolidation Agreement* a further 5bn DKK are earmarked to growth in the health care sector in the period 2011-2013, while growth in health care expenditures after 2013 must be accommodated within the overall limits for total public consumption. As more than one quarter of total public consumption is devoted to health, it is a key assumption underlying the 2020-projection that previous years' growth in health care spending by 3½ per cent per year is reduced.

To reduce the growth in health care spending it is essential to continue the work on effectiveness and strengthened management and prioritization, thereby ensuring that the large capacity at hospitals and GPs which has been built up during the last 10 years is better exploited and used in a manner that provides the most value for patients.

Educational and research objectives implies higher spending in the short term

The objectives concerning research, youth education and tertiary education also put pressure on public consumption expenditures towards 2020. The following objectives on globalization are included in the so-called Welfare Agreement (Agreement on Future Prosperity, Welfare and Investments in the Future) from June 2006:

- Public R&D expenditures are increased so that as of 2010 they amount to 1 per-cent of GDP.

- By 2010, at least 85 percent of young people should complete (at least) secondary education, and by 2015 at least 95 percent.
- By 2015, at least 50 percent of all young people should complete tertiary education while at the same time, the average age at study completion should be reduced.

According to the globalization agreement the public research appropriations should increase with GDP, and the growth in research spending must be financed within the overall limits for total public consumption.

Fulfilment of the educational objectives by 2015 will increase employment in the long term but this will not be sufficient to offset the weakening of public finances which takes place in the more medium term.

6.3 Effectiveness, prioritizing and competition in the public sector

It is the intention to continue the work on efficiency and increase the competition exposure in the public sector to prioritize resources to welfare service as health care and education in the municipalities and regions, while fewer resources are used on administration.

According to an agreement from 2008 initiatives have already been taken to release local resources to higher quality of welfare services equivalent to 5bn DKK from 2009 to 2013. The initiatives include reduction of administrative burdens and continuing the effort for efficient workflows in big welfare areas as health care, education and elderly care. Furthermore, there is still a potential for efficiency gains after the Local Government Reform in 2007.

The work to make resources available to health care also continues in the regions. It is essential that capacity is utilized efficiently and resources are prioritized to treatment of patients.

Therefore, productivity gains of 2 percent per year are required in the health care sector, which means that every year more treatments are performed at unchanged costs. Also, concrete initiatives are needed to ensure higher administrative efficiency in the regions, better purchases and lower absence due to illness. The agreed investments in hospitals for more than 40bn DKK in the years to come will make higher efficiency gains possible by establishing new hospitals and apparatus that contribute to efficient workflows and treatments.

The further work will include a series of initiatives among both municipalities and regions:

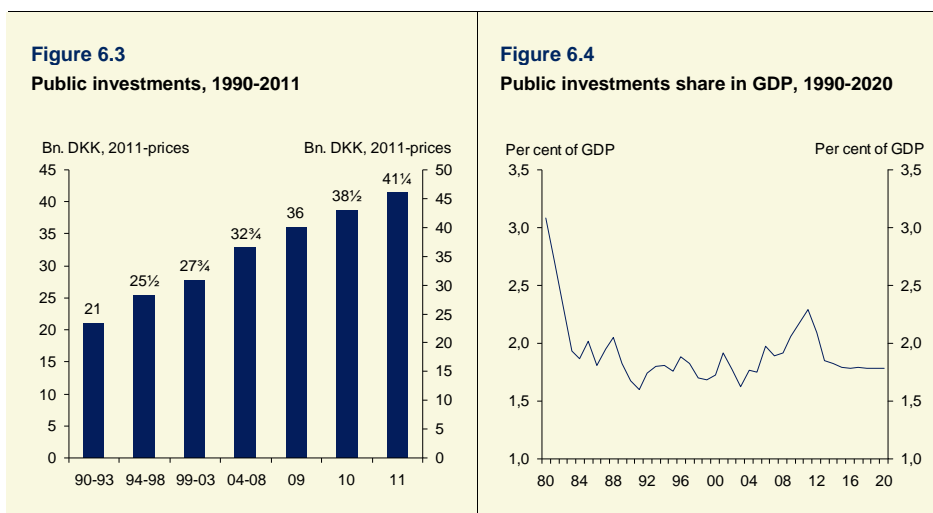
- Ambitious strategies to reduce administrative costs in municipalities and regions.
- Digitalisation to automate workflows, ensure consistency across sectors and ease the citizen's dialog with the public sector.
- De-bureaucratisation to make resources available by simplifications or elimination of administrative requirement and procedures.
- More competition and joint purchase and thereby competition against private firms ensuring the best and cheapest price.

- Diffusion of new welfare technology in big health care areas, public schools and social protection.
- Lower absence due to illness.
- Diffusion of best practises/benchmarking to ensure that municipalities and regions learn from each other.

6.4 Public investments

Due to the economic downturn public investments have been brought forward and initiated in 2009 and 2010. Thus public investments are expected to exceed 2 per cent of GDP in both 2009 and 2010, which is a high level by Danish historical standards, *cf. figure 6.3 and 6.4*. A certain spill over of public investments from 2010 to 2011 is expected. Therefore the high level of public investments in 2009 and 2010 is expected to continue in 2011.

Towards 2020 it is assumed that public investments gradually return to a more normal level. Thus public investments' share in GDP is assumed to fall to 1¾ per cent in 2020. This corresponds to the historical average since 1990.



Source: Statistics Denmark and own calculations.

To support growth in the coming years rather extensive investments in hospitals, day-care institutions, schools, roads and railways have been decided. Towards 2018 the projection for public investments include the implementation of the so called Quality Fund amounting to 50 billion DKK, which shall co-finance new and improved physical facilities in the central public service areas (hospitals, public schools, day-care institutions etc.).

In addition, approximately 100 billion DKK have been set aside and earmarked for investments in the transportation sector towards 2020, *cf. table 6.2*, and large investment projects have been decided, e.g. the Metro Cityring and the Fehmarnbelt Fixed Link, which are organ-

ized in separate entities and treated as private sector investments in the national accounts. These investments have started, and the activity will be increased in the coming years.

Table 6.2
Planned investment projects

	Billion DKK	Period
2011-prices		
Quality fund area:		
Hospitals (incl. funding from the regions)	41 ¹⁾	2009-2018
Day care, public schools, elderly area etc. ²⁾	9 ³⁾	2009-2013
	14	2014-2018
Applied Public Service Technology	3	2009-2015
Infrastructure fund mv.:		
Transportation investments under the fund	97	2009-2020
Motorway Holstebro-Herring	3	2013-2018
Other large infrastructure projects:⁴⁾		
Metro City Ring	22	2007-2018
Fehmarnbelt Fixed Link	48	2009-2020

- 1) 2009-prices.
- 2) Improved physical environment with respect to day-care, public schools, sport facilities targeted towards children and young ones and the elderly area.
- 3) It is prerequisite for the use of means stemming from the Quality Fund that the individual municipality contributes with equivalent funding to the investment projects. By the implementation the Quality Fund municipalities' investments in the mentioned areas will be increased from a total of approximately 25 billion DKK to 34 billion DKK in the period 2009-2013.
- 4) Indexed to 2011-price level using the central government construction price index.

6.5 Tax policy since 2000

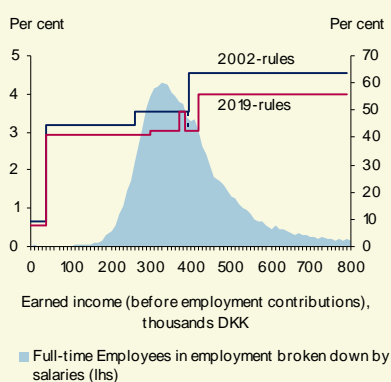
Since 2001 the tax freeze has been the cornerstone of tax policy.

The 2020-plan maintains the tax freeze as the operational basis for tax policy. As a general rule this implies that taxes cannot be raised relative to current legislation, including the legislation contained in Spring Package 2.0 and the Fiscal Consolidation Agreement.

Towards 2019 the tax reform in Spring Package 2.0 will be fully phased-in. The reform is fully financed in the long term, and is expected to strengthen public finances from 2013 onwards. The reform is estimated to strengthen labor supply by about 18.500 people and improve fiscal sustainability by approximately 5½ billion DKK.

The tax reform in Spring Package 2.0 should be seen as a continuation of the tax agreements from 2003-04 and 2007, which introduced and increased the earned income tax credit and raised the income thresholds for the top and middle tax, in particular. Overall, the three tax agreements significantly reduced marginal tax rates for almost all workers, even after allowing for tax increases in the Fiscal Consolidation Agreement, *cf. figure 6.5*.

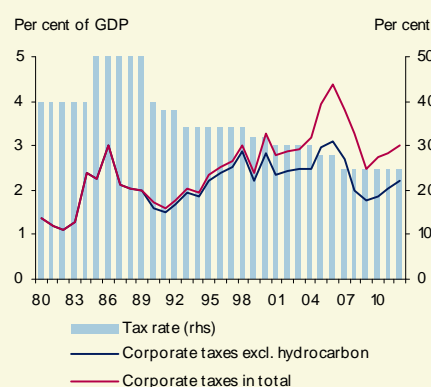
Figure 6.5
Scale marginal tax rates



Note: 2002-rules denote marginal tax rates and income thresholds which would have been in effect in 2002 given a fully phasing-in of the low income tax reduction due to the Whit-sun package. The dotted line represents a situation where the green check (incl. allowances for 2 children) is received.

Source: Own calculation based a sample covering 3.3 percent of the population.

Figure 6.6
Development in corporate taxes and tax rates, 1980-2012



Note: Corporate taxes also include taxes on hydrocarbon etc.

Furthermore the corporate tax rate in Denmark has been reduced from 30 percent in 2001 to 25 percent in 2007, *cf. figure 6.6*. In total, the corporate tax rate has been halved since 1989. The progressive reductions of the Danish corporate tax rate are in line with developments in most other OECD countries.

At the same time the corporate tax base has been increased, partly financing the reduction of the formal tax rate. Compared to the late 1980s where the corporate tax rate was 50 percent, revenues from corporate taxes are the same or higher as a share of (cyclically-adjusted) GDP, even if corporate taxes from hydrocarbon-producing companies are excluded. In recent years, corporate tax revenues have been severely affected by the financial crisis. Thus the significant decline in recent years is considered to be cyclical in nature.

Overall, most of the Welfare Commission's proposals concerning income taxes and corporate taxes have been implemented in recent years. Marginal tax rates on income and corporate

taxes have been reduced. Furthermore there has also been a movement towards a more uniform taxation of savings and investments. The tax value of the interest deductibility will gradually be reduced from 2012 for households with large interest payments, which may reduce the tendency for high gross indebtedness of households.

In addition to maintaining the tax freeze and reducing income taxes, tax policy has aimed at ensuring robust tax bases. Thus, the reduction of corporate taxes can strengthen the incentive to locate activity, tax base and turnover in Denmark. In the area of excise duties, it has also been an aim to ensure that Danish rules are robust towards cross-border activity.

Those increases in excise taxes that have been implemented have primarily focused on products and services which are detrimental to the environment and climate. In connection with the energy agreement in 2008 the CO₂ duty was raised and a special NO_x duty was introduced. Since 2008, moreover, energy taxes have been indexed to the expected development of net prices. The revenue from these excise tax increases has been transferred back to the private sector in the form of tax cuts in other areas.

In 2007 the taxation of vehicles was reformed. The changes strengthen incentives to buy smaller, more fuel efficient cars. In addition, the incentive to choose vans rather than cars was reduced. Overall, the adjustment in 2007 (along with rising oil prices, etc) has contributed to reducing the average CO₂ emissions from passenger transport in Denmark. Finally, it has been decided to exempt electric and hydrogen cars from duties until 2015 in order to support the deployment of these technologies in Denmark.

Summary on changes in personal income taxes since 2001

Since 2001 there have been 3 major tax agreements, which have aimed at reducing taxes on earned income: The Spring Package from 2004, the 2007 Tax Agreement and Spring Package 2.0 from 2009. Conversely the Fiscal Consolidation Agreement from 2010 included tax increases as a part of the consolidation of public finances and fulfillment of the EU recommendation. Among other things the four reforms have led to:

- The middle income tax threshold was initially increased and subsequently the middle income tax was abolished altogether with Spring Package 2.0. As a consequence it is estimated that 1.9 million people no longer pay the middle income tax.
- The top income tax threshold has been increased. It is estimated that when the changes have been fully phased in – including the increase in the top income tax threshold in 2014 – 240,000 people will no longer pay the top income tax.
- The Earned Income Tax Credit was introduced in 2004 and has since been increased, so that it currently amounts to 4.25 per cent of the labor market contribution tax base (however, capped at 13,600 DKK in 2011).
- Taxation of positive capital income has been lowered, while the value of the interest deductibility (and other tax deductions) gradually will be reduced towards 2020. Taxation of various forms of savings has been made more uniform.

Among other things the tax agreements have reduced the top marginal income tax rate in an average municipality from approximately 59.8 percent (on income after labor market contribution) in 2002 to approximately 52.3 percent, *cf. table 6.3*. As part of the Spring Package 2.0 the so called health care contribution amounting to 8 per cent will gradually be phased out from 2012 to 2019 and replaced by a corresponding increase in the basic income tax rate. The value of the interest deductibility will be reduced for interest expenditures above 50,000 DKK for singles and 100.000 kr. for couples. This allowance is fixed in nominal terms.

Table 6.3
Key tax rates

	2002 ¹	2004- Agreement	2007- Agreement	Spring Package 2.0	Fiscal con- solidation agreement
Tax rates:					
Average municipal and church tax	33.7	33.7	25.7	25.7	25.7
Health contribution	-	-	8.0	0.0	0.0
Low Income Tax	5.14	5.14	5.14	11.64	11.64
Middle Income Tax	6.0	6.0	6.0	-	-
Top Income Tax	15.0	15.0	15.0	15.0	15.0
Total (incl. avg. church tax rate)	59.8	59.8	59.8	52.3	52.3
Tax ceiling (excl. church tax)	59.0	59.0	59.0	51.5	51.5
Labor Market Contribution	8.0	8.0	8.0	8.0	8.0
Earned Income Tax Credit	0	2.5	4.25	5.6	5.6

- 1) For simplification purposes the low income tax rate and the average municipal tax rate in 2002 have been adjusted for municipal tax rate increases and the compensating low income tax rate reductions for the period 2002-2011. In 2002 the average municipal tax rate was 33.3 per cent and the low income tax rate 5.5 percent.

Note: Tax rates given full phasing-in.

The reduced marginal tax rates increase marginal wages, i.e. the amount remaining after tax of the last earned krone. Increased marginal wages tend to strengthen labor supply (both hours worked and presumably productivity) for those persons already employed.

As a benchmark, for a given amount of lost revenue a reduction of progressive taxes (i.e. middle and top income tax rates) has a larger effect on labor supply than e.g. a reduction of the basic income tax rate.

As mentioned, since 2001, four larger tax agreements have been adopted. The 2004-agreement, the 2007-agreement, Spring package 2.0 and the tax elements in the Fiscal Consolidation Agreement. In total, it is estimated that the four tax agreements will increase labor supply equivalent to almost 35,000 persons, *cf. table 6.4*.

Table 6.4
Effect on labor supply due to the four tax agreement since 2001

	Effect on hours worked	Effect on employment	Total
Full Time Equivalents			
2004-agreement	6,450	3,250	9,650
2007-agreement	6,400	1,150	7,550
Spring Package 2.0	17,650	600	18,300
Tax elements in the Fiscal Consolidation Agreement	-2,200	450	-1,750
<i>Total effect of the Fiscal Consolidation Agreement</i>	<i>-2,200</i>	<i>14,450</i>	<i>12,250</i>
Total (Tax reforms)	28,350	5,450	33,750
Total, Tax reforms and other elements of the Fiscal Consolidation Agreement	28,350	19,450	47,750

Note: Spring Package 2.0 also includes effects due to the so-called service check. The labor supply effects due to tax agreements include the effects of changes in duties. The estimates in the table are based on updated calculations and can therefore differ from the original estimates presented at the same time as the agreements. However the differences are minor.

Source: Own calculation based a sample covering 3.3 percent of the population.

6.6 Improved expenditure control

To fulfil the fiscal and expenditure objectives towards 2020 it may be necessary to rethink the mechanisms and procedures through which public expenditures are controlled. It is not sufficient to set ambitious objectives. It is crucial that actual expenditures develop in line with the decided limits.

Therefore the government proposes the introduction of a new expenditure control framework based on expenditure ceilings, which shall ensure that the targets for public spending are respected. In particular, this means that the Danish Parliament shall agree on expenditure ceilings for central government, municipalities and regions respectively in accordance with the central objective of structural budget balance in 2020. The expenditure ceilings shall be determined according to a scenario, in which only financing initiatives that are backed by a majority in parliament, are taken into account.

An expenditure control framework based on expenditure ceilings maintains important elements of the current expenditure policy framework, but will also strengthen the current system in a number of respects. In the current system the objectives for expenditure policy are formulated in coherence with medium term macroeconomic plans thereby supporting the fulfilment of the general fiscal and expenditure policy objectives. This practice can be strengthened by the introduction of binding expenditure ceilings based on the 2020-plan.

In addition, the objectives for expenditure policy have traditionally focused on general government consumption expenditures. Introducing expenditure ceilings will increase focus on the totality of public expenditures that are central to fulfil the fiscal policy objectives. At the same time considerable focus remains on the operating costs that are associated with the running of public institutions and production of public services.

Thus, the existing framework entails some weaknesses, which the government's proposal for a new framework based on expenditure ceilings can improve:

- The expenditure objectives have not previously been transformed into parliamentary decisions on binding limits in the shape of decided target numbers or annual ceilings.
- The expenditure objectives have hitherto primarily included public consumption expenditures, i.e. about half of the aggregate public expenditures. Henceforth, the ceiling for central government is suggested to include the main parts of all central government expenditures, while the expenditure ceilings for the municipalities and regions respectively remains focused primarily on the operating costs.
- The benchmark target for the public consumption expenditures as a share of (cyclically-adjusted) GDP has solely been formulated for the end-year in the 2015-plan – and not for the individual years towards the end-year. Henceforward it is suggested to implement expenditure ceilings for the individual years.
- The expenditure objectives have solely been based on the principles of Statistics Denmark's national accounts, which are not directly comparable to the way budgets and accounts are calculated. It is suggested that the objectives in future are translated into explicit limits for the public expenditures as these are calculated in public budgets and accounts – including e.g. the fiscal bill and central government final accounts.

New expenditure control framework: Expenditure ceilings for central government, municipalities and regions

In order to obtain better expenditure control, which contributes to the realisation of the overall medium term objectives for the fiscal and expenditure policy, the connection needs to be strengthened between the objectives in the medium term plans and the framework for the expenditures in central government, municipalities and regions.

The fulfilment of the macroeconomic objectives for the fiscal and expenditure policy is therefore suggested to be supported by multi-year ceilings for the public expenditures in central government, municipalities and regions respectively, thereby making the expenditures comply each year with the limits required to fulfil the overall objectives for public finances.

The new expenditure control framework is suggested to be embedded in a law on expenditure ceilings which is proposed to entail these main elements:

- *The expenditure ceilings shall fulfil the overall medium term objectives.* The expenditure ceilings shall be in accordance with the central objective of ensuring structural budget balance by 2020. At the same time the expenditure ceilings shall be determined according to a macroeconomic scenario only taking into account reform initiatives etc. which are backed by a political majority in the Danish Parliament.
- *The expenditure ceilings shall be determined by the Danish Parliament and have a binding status.* The expenditure ceilings shall be determined by the Danish Parliament. This creates a clear political obligation to comply with the ceilings each year.
- *The expenditure ceilings shall include central government, municipalities and regions.* The politically determined expenditure ceilings shall include separate expenditure ceilings for central government, municipalities and regions respectively. The ceilings for municipalities and regions shall set the limits for the annual negotiations with Local Government Denmark and Danish Regions on the municipal and regional economy and thereby for the municipalities' and regions' budgets and final accounts. The central government expenditure ceiling shall set the limits for the fiscal bill and the central government's final accounts. The government's proposal implies that the expenditure ceilings all in all are expected to cover approximately 4/5 of public expenditures.
- *The expenditure ceilings shall cover a 4-year period.* The expenditure ceilings shall be determined for a rolling 4-year period. The establishment of multi-year expenditure ceilings will increase focus on the overall conditions for budgetary policies and help steer expectations of future spending.
- *The expenditure ceilings shall state clear limits for budgets and final accounts.* The expenditure ceilings shall specify limits in money terms – quantified in DKK – for the expenditures in each individual year. That ensures transparency in relation to the annual final accounts in central government, municipalities and regions, which must comply with the ceilings. Moreover, it will establish a clear and operational framework for the in-year control and planning of public expenditures at the various levels of government.
- *The expenditure ceilings shall cover a broad range of public expenditures.* The central government expenditure ceiling shall include most types of public expenditures. The expenditure control framework shall cover not only public consumption, but also income transfers, subsidies and foreign transfers. Cyclically sensitive expenditures – such as unemployment benefits – are suggested to be excluded from the ceilings, so that the automatic stabilisers can operate in line with cyclical fluctuations. Moreover, interest payments on government debt and public investment expenditures are kept outside the

ceilings. The expenditure ceilings for municipalities and regions shall include their service/operating costs. In the regional sector the expenditure ceiling consists of two sub-ceilings for the health area (including medicine expenditures) and regional development, respectively.

- *The expenditure ceilings shall be underpinned by sanctions and improved finance management.* The expenditure ceilings for central government, municipalities and regions will be underpinned by automatic sanctions, and budget management and execution needs to be strengthened in all parts of the public sector. For the central government, offsetting measures must be imposed if the budget monitoring in a given fiscal year reveals signs of non-compliance with the expenditure ceiling. The central government expenditure ceiling shall automatically be reduced in the subsequent year if the final accounts imply that expenditures exceed the ceiling. Also regarding the municipalities and regions there shall be an expenditure control framework, which underpins exact compliance concerning the agreements with Local Government Denmark and Danish Regions. Among other things this will be enforced by use of collective and individual sanctions in case of non-compliance with the agreements.

The introduction of expenditure ceilings in Denmark is inspired, among others, by the examples of Sweden, the Netherlands and Austria, which in various designs apply expenditure ceilings to central government expenditures.

As part of the new expenditure control framework it is suggested that the Economic Council is given the task to annually evaluate the long term sustainability of the public finances as well as evaluating whether the decided expenditure ceilings are in accordance with the fiscal policy objectives and whether the expenditure ceilings are complied with, both during the planning- and budgeting phase and when the final accounts are available.

6.7 Institutional framework

The key guideposts for the planning of public finances and fiscal policy are:

- *Fiscal policy:* Should contribute to economic stability, structural budget balance in 2020 and a sustainable development in public finances in the longer term.
- *Expenditure policy:* The planned public expenditures towards 2013 reflect the Fiscal Consolidation Agreement, while the assumed development in public expenditures in 2014-2020 – and especially the composition of expenditures with respect to income transfers and public service expenditures – depends on the implementation of structural reforms. The government has proposed reforms concerning the early retirement scheme, disability pensions and student grants, which will increase employment and GDP towards 2020. The reforms increase the overall tax base and thereby create room for an increase in public consumption which is in line with assumptions in former medium term plans – in accordance with structural balance in 2020. The reforms imply a reduction of the number of income transfer recipients, thereby partially reducing public expenditures.

- *Tax policy:* Since 2001 the tax freeze has been the cornerstone of tax policy. In the 2020-plan the tax freeze is maintained as the operational basis of tax policy. Overall this implies that taxes cannot be raised compared to current rules, including the rules resulting from the Spring Package 2.0 and the Fiscal Consolidation Agreement.
- *Monetary and exchange rate policy:* A stable currency by virtue of the fixed exchange rate against the euro, which at the same time ensures low and stable inflation expectations. Responsible economic policies underpin confidence in the stable exchange rate so that low interest rates and a low interest rate spread against the euro can be maintained.

Fiscal policy objectives are based on the national accounts' specification of public expenditures and revenues, whereas the concrete implementation of fiscal policy is based on the fiscal bill and local government budget that are specified according to other accounting principles, classifications etc. that the national accounts.

As mentioned the government proposes the introduction of a new expenditure control system based on expenditure ceilings, where the overall objectives in the 2020-plan are converted into concrete 4-year expenditure ceilings for public expenditures by central government, municipalities and regions. The level of expenditure ceilings must correspond with the central objective of ensuring structural budget balance in 2020.

The budget process and agreements on the economy of local governments

The annual central government budget process begins in early spring, as the government determines the overall allocation of real public expenditure growth on spending areas, including municipalities and regions. On this basis, expenditure ceilings are reported to the individual ministries.

The government presents the budget proposal for the coming fiscal year in August¹. Subsequently, the budget proposal is subject to political reading in the Danish Parliament. Typically, a political agreement on the budget bill is reached between the government and one or more political parties in November, and the budget bill is thus normally adopted in December.

During the fiscal year the ministries are responsible for monitoring expenditures developments. The ministries are obliged to seek to finance any additional expenditure through savings elsewhere. The ministries are also obliged to inform the Ministry of Finance and the Danish Parliament about changes in the assumptions/premises e.g. in relation to cyclical expenditures. During the fiscal year the ministries prepare two reports on expenditure developments to the Ministry of Finance.

Thus, the Ministry of Finance has the means to monitor developments in total central government expenditures. Expenditure developments are reported to the Danish Parliament in Budget Outlooks published in May, August and December. Normally the final accounts for central government are available in April, i.e. about four months after the end of the fiscal year.

¹ The fiscal year follows the calendar year.

In June the government concludes an agreement with municipalities and regions on their overall expenditure and tax levels for the coming year and guidelines for political and economic priorities within specific service areas. The agreements are collective and apply for all municipalities and all regions as a whole, respectively.

Following the agreement on the economy in local governments, the individual municipalities and regions adopt budgets for the coming year in October. Due to the Fiscal Consolidation Agreement and the fiscal bill agreement for 2011 new mechanisms are introduced to support expenditure control in municipalities and regions. Among other things the mechanisms imply, that municipalities must present politically approved mid-year accounts. Annual accounts for municipalities and regions are normally available in May (the year after a given fiscal year).

Process for determination of expenditure ceilings

The Fiscal Consolidation Agreement contains as a central objective that public expenditures are kept at bay for the period 2011-2013. Thus, the Fiscal Consolidation Agreement *de facto* indicates fixed ceilings for public consumption towards 2013. Furthermore, this implies that expenditure limits concerning municipalities and regions towards 2013 are fixed – which includes the negotiations on the municipalities' and the regions' economy for 2012 due this spring.

Once the expenditure ceiling system is established, ceilings for the new fourth year has to be determined in the following years only, so that binding expenditure ceilings are always in place for a rolling 4-year period, *cf. table 6.5*. The government suggests that every spring a draft resolution will be put forward for debate in the Danish Parliament about the overall room for manoeuvre with respect to the total size and development of public expenditures within a sustainable fiscal policy framework. The resolution will contain a proposal with respect to expenditure ceilings for central government, municipalities and regions for the new fourth year.

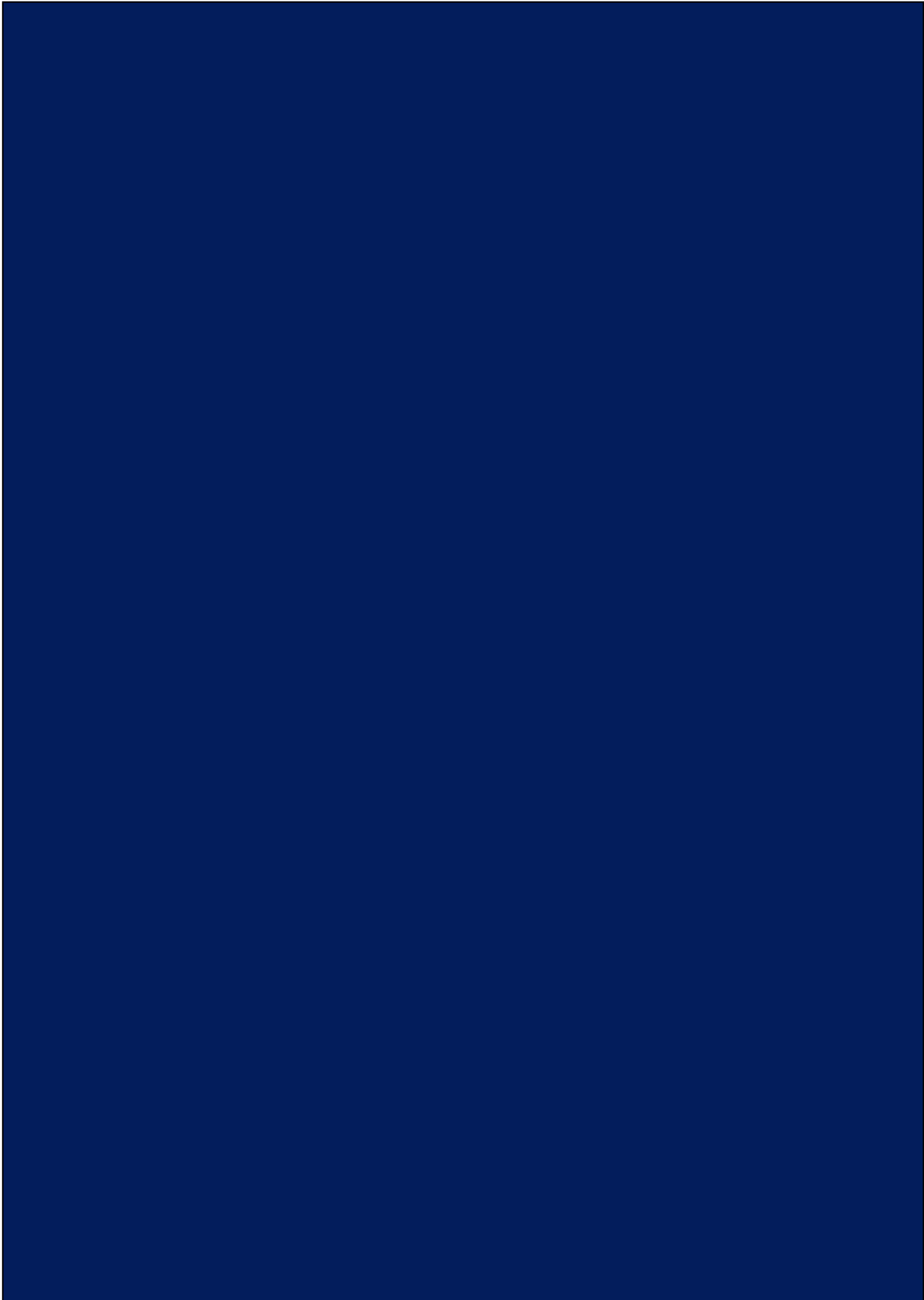
The government will put forward a bill on expenditure ceilings, which will contain rules for a new expenditure control system. Concrete proposals concerning the expenditure ceilings covering the period 2012-2015 will be presented in connection with the central government budget proposal for 2012.

Table 6.5
Determination of 4-year expenditure ceilings for central government, municipalities and regions

		Period covered by expenditure ceilings								
		2012	2013	2014	2015	2016	2017	2018	2019	2020
Date of determination	2011									
	2012									
	2013									
	2014									
	2015									
	2016									

Determination of new expenditure ceilings

Expenditure ceilings are already determined



A1. Methodological changes relative to CP09

The assumptions underlying the medium and long-term projections of the Ministry of Finance have been reviewed and the most important changes relative to the Convergence Programme 2009 are outlined below. Overall, the methodological changes are neutral with respect to the fiscal sustainability indicator, cf. *Table A1.1*.

Table A1.1
Effect on the fiscal sustainability indicator

	Billion DKK	Per cent of GDP
1. Methodological changes in total (sum of 2 to 9)	0	0.0
2. Productivity growth and interest rates	-2	-0.1
3. Education and labour market participation	-1	-0.05
4. Projection method for the voluntary early retirement scheme ¹⁾	4	0.2
5. Hours worked for older workers when the pension age is raised (W.A.)	2	0.1
6. Long-term wage share in the private sector	-3	-0.2
7. New data for pension assets, deposits and withdrawals, etc.	1	0.05
8. Civil servant pensions	-1	-0.05
9. Other changes, net	0	0.0

Note: Amounts in billions DKK (2011 level) are calculated as the amount in per cent of GDP multiplied by cyclically adjusted GDP in 2011 (approx. 1840 billion DKK). Due to rounding, the sum of contributions does not necessarily equal totals.

1) The effect is indicated for the reduction in the number of voluntary early retirees, beyond the reduction resulting from methodological changes under pt. 3 (education and labour market participation).

Source: Own calculations.

Productivity growth and interest rates

In Convergence Program 2009, the underlying productivity growth rate in the private sector and the urban business sector¹ was assumed to be about 2 per cent per year. In light of the relatively low productivity growth rate over the past 15 years or so, longer-run productivity growth is now assumed to be about 1½ per cent per year in the urban business sector and

¹ Private sector excluding agriculture, energy extraction and maritime services etc.

the private sector, which implies productivity growth of around 1.1 per cent for the economy as a whole (against approx. 1½ per cent in the CP09), *cf. Table A1.2*.

The assumptions about productivity growth correspond approximately to the average for the period 1990-2012, where the projection for 2012 is included to take account of a cyclical recovery in hourly productivity after the large (cyclical) decrease during the crisis. The assumed productivity growth rate is higher than the average since 1995 and therefore requires a sustained improvement in the rate of productivity increase. The assumed underlying productivity growth in the private sector broadly corresponds to the assumptions for Denmark in e.g. the OECD's medium term projections, which, among other things, assume a gradual convergence in the productivity growth rates among comparable countries in Europe.

Tabel A1.2**Productivity growth**

	Avg. 1990- 2012	Avg. 1995- 2012	CP09 2020- 2050	CP11 2020- 2050
Per cent per year				
Private non-agricultural industries	1.4	1.1	2.0	1.5
Private sector excl. energy extraction	1.5	1.2	1.9	1.5
Private sector	1.4	1.0	1.9	1.4
The whole economic	1.2	0.8	1.5	1.1

Tabel A1.3**Long term government bond yields, inflation and real interest rates**

	Avg. 1990- 2010	Avg. 1995- 2010	CP09 2020- 2050	CP11 2020- 2050
Per cent per year				
Nominal interest rate (10-year)	5.8	4.9	5%	5%
Inflation	1.9	1.9	1.9	1.9
Real interest rate	3.9	3.0	3.8	3.3
Real GDP-growth	1.6	1.4	1.8	1.4
Excess real interest rate	2.0	1.2	1.7	1.7

Note: The productivity growth in the public sector is not measured in the national accounts. In table A1.3, inflation is measured by the private consumption deflator; and the excess real interest rate relative to the GDP deflator.

Source: Statistics Denmark and own calculations.

The yield on 10-year government bonds, which in Convergence Programme 2009 was assumed to be 5.75 per cent in longer run, is reduced to 5.25 per cent in the CP11. Hence, the assumed interest rate is slightly higher than the average for the period 1995-2010 (close to 5 per cent), but lower than the average since 1990 (approx. 5¾ per cent), *cf. Table A1.3*. In both periods the average inflation rate was equal to the assumed medium-term inflation rate of 1.9 per cent (as measured by private consumption deflator), but in the early 1990s interest rates were relatively high in light of the German unification boom and exchange rate turmoil in the EMS. The assumed interest rate of 5.25 per cent corresponds to the OECD medium term assumptions for Denmark (5.3 per cent) composed of an expected German interest rate of 5 per cent and a moderate yield spread of around ¼ of a percentage point.

At an assumed inflation rate of approx. 1.9 per cent per year (measured by private consumption deflator), real interest rates are thus approx. 3.3 per cent, which is lower than in the period since 1990, but higher than in the period since 1995. Real interest rates are lower by ½ percentage point compared to CP09.

The growth-adjusted or “excess” real interest rate (as measured by the interest rate relative to nominal GDP growth) is essentially unchanged relative CP09. This implies, among other things, that the weighting of future primary balances in the calculation of the fiscal sustainability indicator is unchanged compared to CP09.

As real growth rates in public consumption towards 2015 are maintained in line with the Fiscal Consolidation Agreement and the 2015-plan, the changes in the productivity growth and interest rates overall imply a slight weakening of fiscal sustainability by approx. 0.1 per cent of GDP, equivalent to approx. 2 billion DKK.

At an unchanged excess real interest rate, changes in productivity growth do not affect the fiscal sustainability if public revenues and expenditures evolve in line with GDP and the net public debt is initially close to zero. A number of public expenditure and revenue items, however, are partly decoupled from GDP. This applies for example to revenues from the North Sea and in the current projection also for public consumption, because the real growth in this component, as mentioned, is fixed until 2015. This is what leads to the aforementioned weakening of the fiscal sustainability indicator.

Education and labour market participation

The Ministry of Finance's medium and long term projections incorporates an impact of education on labour participation rates. Both in the form of a contribution from increases in the average educational level stemming from unchanged propensities to enter and complete education at various levels (entry and completion rates), and in form of a contribution from the further increase in educational attainment from meeting the government's key educational targets: These are that at least 95 per cent of a cohort should complete at least a secondary education and at least 50 per cent complete a tertiary education by 2015 (as measured by the so-called “profile model” taking account of observed entry and completion rates etc.).

The estimates of the impact of education on participation rates have been updated based on the working paper *Sammenhængen mellem uddannelse og erhvervsdeltagelse*, Ministry of Finance Working Paper Series 2011, see also the *Reform Agenda 2020, Chapter 6*.

The analysis indicates that between 25 and 50 per cent of the observed (historical) differences in participation rates across educational groups can be attributed to the effect of education itself, while the remaining differences must be attributed to other factors such as innate characteristics and skills acquired in childhood, motivation and health. These factors may be positively correlated with a person's likelihood to complete an education, but will not necessarily change very much simply because the person actually completes an education.

A reasonable central estimate for the historic effect seen over the period 1981-2007 is that the increased educational level has increased the participation rate by almost 40 per cent of the proportional (full) effect, cf. *table A1.4*. This estimate is also used going forward in relation

to the rise in the educational level stemming from unchanged behaviour in the educational system. The increase in the educational level, which will happen without a change in education propensities, is therefore assumed to increase employment by nearly 30,000 persons in the long term. This is consistent with the assumptions in CP09.

Table A1.4**Estimates of the effect of increases in the educational level on the participation rate**

Per cent	Interval	Central estimate
Historical effect of the increased educational level (1981-2007)	25 – 50	39
Effect of additional increases in the educational level	0 – 40	25

Note: The effect refers to the proportion of the hypothetical full or "proportional" educational effect, which actually is reflected in the participation rate. The interval for the effect of the additional increase in the educational level is estimated on basis of the estimated effect for the period 1995-2007 for the age groups 30-59 and for the younger age groups (30-49 years) in the whole sample.

Source: *Sammenhængen mellem uddannelse og erhvervsdeltagelse*, The Ministry of Finance, Working Paper Series 2011.

The analysis also suggests that the marginal increase in the participation rate due to higher educational attainment has been smaller for younger generations compared to older generations, and that the effect has been declining over time. Both these factors suggest that the marginal effect on the participation rates of further increases in the educational level gradually decreases as a higher proportion of the population already has obtained an education.

Based on the analysis it is estimated that the marginal effect on the participation rates of further increases in educational attainment - beyond the current propensities towards education - is between 0 and about 40 per cent of the proportional effect, with a central estimate for the marginal effect of 25 per cent of the proportional effect, *cf. table A1.4*. This estimate is used in the calculations of the effects of further increases in the educational level.

In *Reform Agenda 2020* it is estimated that meeting the educational targets in itself weakens fiscal sustainability by close to 0.1 per cent of GDP, partly because the full positive effects on employment of a higher educational level only occur in the long term (towards around 2060), while larger expenditures on education and the reduction in labour supply due to more students occurs towards 2015. In isolation the public balance in 2020 is weakened, because the positive effects are still too small to outweigh the associated costs for public finances.

All together, the changes in the assumptions about education and labour market participation in CP11 lead to a marginal weakening of the sustainability indicator of approx. 0.05 per cent of GDP or approx. 1 billion compared to CP09².

² The weakening reflects that the mirror image of the employment effects of education – in terms of fewer transfer recipients – are calculated at a more detailed level. Thus, the increase in employment in CP09 was only matched by a corresponding reduction in the number of disability pensioners, while the reduction in CP11 is divided into several transfer recipients groups (including voluntary early retirement), of which disability pension is only just over half. Interacted with the increased age limits for pensions and the VER under of Welfare Agreement, the number of early pensioners is therefore higher in the long run.

The voluntary early retirement scheme (VER)

In connection with *Reform Agenda 2020*, a new long run projection was made for the number of people in voluntary early retirement (VER). This update has led to a downward adjustment of the number of voluntary early retirees in the long run of around 20 per cent, cf. *table A1.5*.

Table A1.5**Number of voluntary early retirees in CP11 compared to CP09**

1.000 persons	2010	2011	2012	2015	2020	2030	2050	2020-29	2050-80
CP11	125	118	113	107	91	101	71	75	77
CP09	127	123	123	126	109	121	92	91	100
Difference	-3	-5	-10	-19	-18	-20	-21	-16	-23
In per cent	-2	-4	-8	-15	-16	-16	-22	-18	-23

Note: The number of voluntary early retirees is measured in full-time persons.

Source: Statistics Denmark and own calculations.

The downward adjustment reflects two main factors:

- In *Economic Survey December 2010*, the estimated number of voluntary early retirees in 2011 is approx. 5,000 lower than in CP09, which was based on the estimate in *Economic Survey December 2009*. This downward revision and the estimated further decline into 2012 is assumed, in CP11I, to reflect a permanent reduction in the number of voluntary early retirees, whereas in CP09, the low inflow rate was partly attributed to earlier cyclical conditions³.
- In connection with the proposed reform of the retirement system 2011, a new assessment was worked out of trends in the number of people eligible for VER and the utilization rates – i.e. the proportion of those eligible that use the scheme. The projection is now based on models and estimates of the evolution of the number of eligible VER participants and their utilization rates. The details of the new projection principles are described in *Reform Agenda 2020, Appendix 5A*.

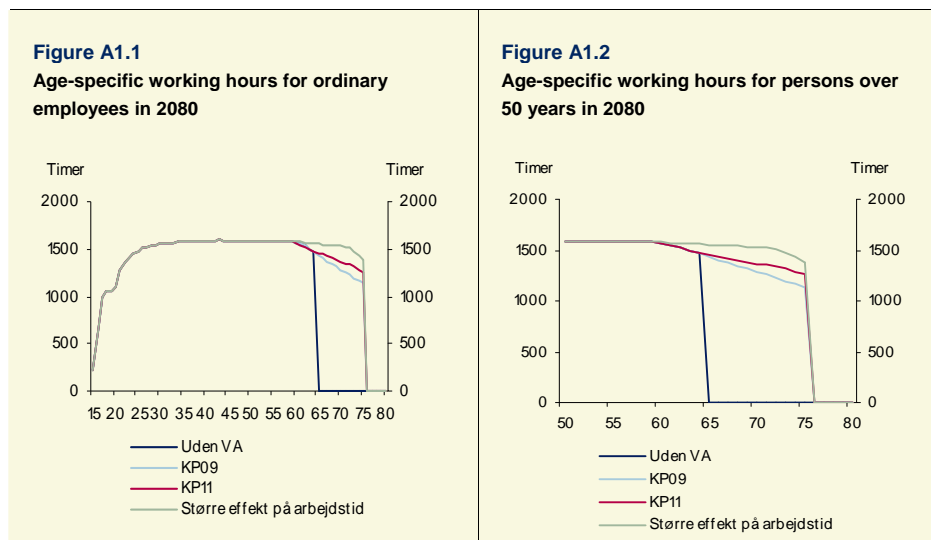
The downward revision to the number of early retirees since CP09 implies an improvement of the fiscal sustainability indicator. Including the effects of the revised estimates for VER contributions and payments of tax-free bonuses etc., the lower number of voluntary early retirees improves fiscal sustainability by some 0.2 per cent of GDP or about 4 billion DKK⁴.

³ In CP09, it was assumed that a portion of the decline that had been observed in the inflow into voluntary early retirement in 2007 and 2008 reflected the extraordinarily good job opportunities in these years, thus being of a temporary nature, and that the weakened prospects after the global financial crisis would result in a larger inflow into voluntary early retirement. The inflow to voluntary early retirement, however, has not increased through 2009 and into 2010, and the low entry rate is now interpreted as a structural or more lasting trend. It is further noted that the downward adjustment of the number of voluntary early retirees in 2011 (of approx. 4 per cent i.e. about one-fifth of the total downward adjustment) reflects an updated basis rather than modified methods.

⁴ The overall impact on the fiscal sustainability from fewer voluntary early retirees etc. compared to CP09 is approx. 5 billion DKK. As mentioned the changed methodology relating to education implied that the mirror image of the positive employment effect of education was no longer alone taken from early retirement, but also

Hours worked for older workers when the pension age is raised (Welfare Agreement)

Today, the average number of hours worked per year for “ordinary” employees⁵ is fairly constant from the age of 30 up until those about 60 years. From about 60 years and up to the retirement age, there is a gradual decline in working hours, which among other things reflects that more people are choosing reduced hours, less overtime etc., cf. figure A1.1 and A1.2.



Note: The figures show the average working hours for a man of Danish origin.
Source: Own calculations.

In *Convergence Programme 2009*, the downward trend in working hours was assumed to extend into the higher age groups, i.e. to people above the current pension age, when the pension age limit is raised according to the Welfare Agreement. Meanwhile, however, the presumed increases in the VER and pension age limits under the indexation rule in the Welfare Agreement occur as a result of higher life expectancy for 60-year-olds. The rising life expectancy reflects, in particular, better health for the older age groups and may imply, in conjunction with the increased age limits, that the declining trend in working hours from 60 to 65 years of age will be less pronounced or be delayed (i.e. occur at a higher age).

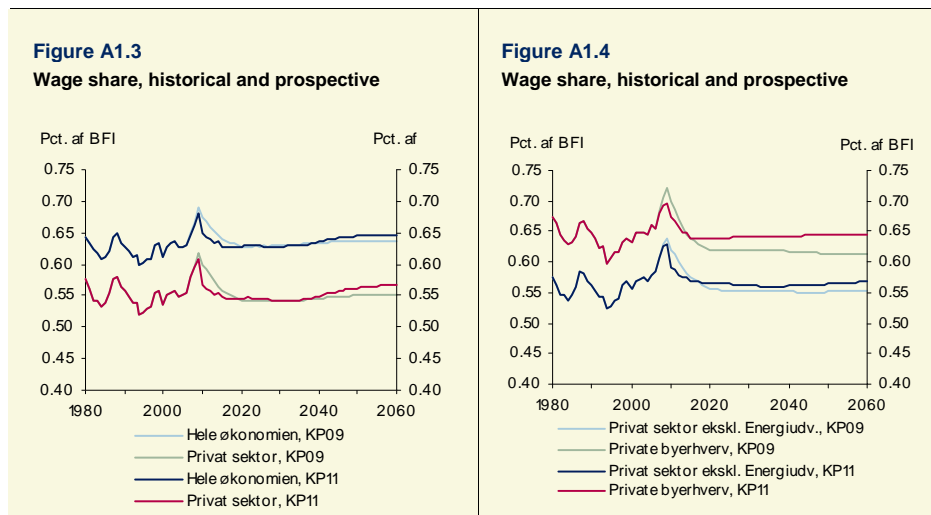
In *Reform Agenda 2020* and *Convergence Programme 2011*, the assumption is that there will be a continued, but slightly less pronounced downward trend in hours worked for the over 60-year-olds as health status improves and the pension age is higher. Compared to the assumptions in CP09, the revised assumptions strengthen fiscal sustainability slightly by approx. 0.1 per cent of GDP or about 2 billion DKK.

recipients of other transfers, including voluntary early retirement. The resulting downward adjustment is equivalent to one fifth of the total reduction in number of voluntary early retirees. The transition to a model based on the contributors and utilization rates in the VER, thus improve fiscal sustainability with approx. 4 billion DKK beyond the effect, which would be obtained in the absence of this model change.

⁵ I.e., excluding those in subsidized jobs, primarily “flex-jobs” for people with reduced work capacity.

Long term wage share in the private sector

In CP09, the long term wage share in the private sector was assumed to be broadly constant for the sector aggregate, and corresponded to a historical average for the period since 1980. The assumptions entailed a relatively sharp decline in the wage share towards 2015 and 2020. In CP11, this decline in the wage share is projected to occur somewhat faster than expected, while the private-sector wage share in 2020 is unchanged from CP09, cf. figure A1.3.



Source: The ADAM data bank, CP11 and CP09.

In CP11 the long term wage share in each of the sub-sectors of the ADAM model corresponds to a long term average from 1980 to 2006. Compared to CP09, this implies a somewhat higher and still approximately constant long term wage share in the urban business sector, cf. Figure A1.4.

For the private sector as a whole, however, the wage share gradually shifts up from approx. 2030 to 2060 as a result of changes in the industrial structure, primarily owing to declining oil and gas production in the North Sea as resources are depleted. The wage ratio in the private sector excl. the energy industry is, however, about constant over the long term in CP11, cf. figure A1.4.

Starting from a given nominal wage bill in the private sector (determined by employment and wage growth, etc.) a higher wage ratio is equivalent to a lower gross operating surplus in the private sector. A lower gross operating surplus means, at the end of the day, lower incomes and consumption that comes to taxation. Meanwhile, lower nominal GDP (owing to lower gross operating surpluses at unchanged wages) means *ceteris paribus* that government consumption expenditure etc. constitute a larger share of GDP, thereby weakening public finances (as spending per user is assumed to increase with the private sector wages).

Overall, changes to the assumptions about the determination of the long term wage share imply a weakening of the fiscal sustainability indicator of 0.2 per cent of GDP or about 3 billion DKK compared to the principles in CP09.

New data for pension assets and deposits and withdrawals etc.

Statistics Denmark, DREAM and the Ministry of Finance have completed a major joint review of the data basis for the statistics on pension assets, contributions and disbursements.

The revisions, which lower the estimated level for both the pension assets, contributions and disbursements, is the result of a new reconciliation of statistics from fiscal records against the FSA's financial accounts statistics. Most importantly, the transfer of existing retirement savings between pension funds (e.g. in connection with job changes) is no longer recorded as disbursements from one fund and contributions to another, since there are no fiscal or other substantial effects of such transfers. Pension assets have been revised down because the new figures only relate to pension provisions, whereas previously reported numbers also included such companies' equity and other debt.

The revisions imply, for instance, that the total value of pension assets excluding ATP, SP and LD is estimated at approx. 100 per cent of GDP in 2006 compared to approx. 110 per cent of GDP on the previous data basis. The difference in the levels is relatively constant over the period 2005-2010. Pension contributions are adjusted downwards from approx. 7 ½ to 6 per cent of GDP in 2006, while pension disbursements are revised down from nearly 5 ½ to just over 3 per cent of GDP, cf. *Table A1.6*.

Table A1.6

Data on pensions excl. ATP, SP and LD (CP09 and CP11)

Per cent of GDP	2006		2010	
	CP09	CP11	CP09	CP11
Pension assets	110	100	121	110
Pension contributions	7,4	6,1	7,9	6,0
Pension disbursements	5,4	3,1	5,9	3,6

Note: 2006 is the last year with full data coverage.

Source: The ADAM Data Bank, Statistics Denmark.

Overall, this revised data basis and associated changes in the pension projection improves the fiscal sustainability indicator by some 0.05 per cent of GDP or about 1 billion DKK. All other things being equal, the present value of "deferred taxes" from the private pensions assets is lower, when the calculation is based on a lower stock of pension assets. Conversely, however, lower contributions to (tax subsidized) pension schemes imply that the sustainability of public finances is slightly strengthened⁶.

⁶ When the relatively large changes in the data for pension contributions and disbursements do not have major effects, it partly reflects their opposite effects on net contributions, and partly that the tax equation in the projection model includes correction factors to ensure that the tax equation hits the actual, known revenues in histori-

Civil servant pensions

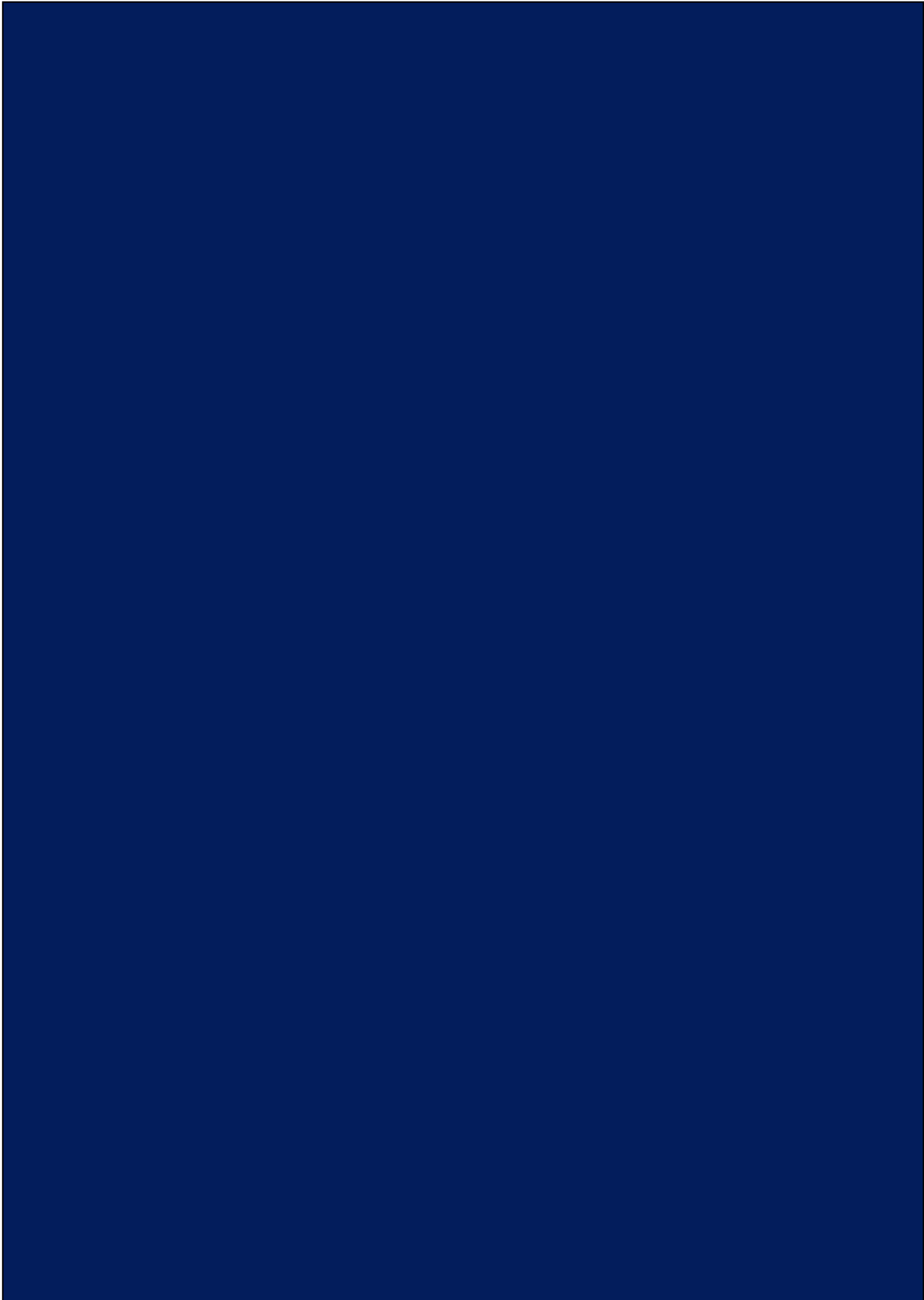
In addition to the direct expenditures for civil servant pensions, government revenue and expenditure data in the national accounts include an imputed (and, for the fiscal balance, budget-neutral) contribution for future pension obligations. On the expenditure side, the imputed contributions are included in the public payroll bill.

The number of civil servants is expected to fall towards 2055, as only police officers, military personnel etc. are hired on civil servant-terms while other groups that previously have received a civil servant appointment, now are employed on normal collective bargaining terms. As the number of civil servants falls, both the imputed revenue and expenditures will be reduced.

In CP11, spending on civil servants' pensions is based on The State Employer's Authority latest projections.

In CP11, the imputed contributions are projected based on the number of active civil servants and thus reflect the future pension liability. In CP09, the imputed contributions were projected as a constant share of GDP. The CP11-assumption implies that the imputed contributions decline going forward as the number of active officials is reduced. The public payroll is not reduced accordingly, since the lower imputed contributions are matched by off-setting contributions to labour market pensions as employees are hired on non-civil servant terms.

cal years. Changes in the calculated tax base therefore are mirrored in off-setting shifts in the correction factors, and it is there primarily changes in the profile over time, that affects the profile of tax revenues.



Annex tables according to the EU's "Code of Conduct"

Table 1a
Macroeconomic prospects

	2010	2009	2010	2011	2012	2013	2014	2015	2020
	Bn. DKK	Rate of change, per cent							
Real GDP	1,384.1 ¹⁾	-5.2	2.1	1.8	1.8	2.1	1.8	2.4	2.0
Nominal GDP	1,745.7	-4.9	5.4	3.3	3.5	4.1	3.8	5.0	4.1
Components of real GDP									
Private consumption	712.4 ¹⁾	-4.5	2.2	2.2	2.5	2.5	2.4	2.7	2.4
Government consumption	388.4 ¹⁾	3.1	1.0	-0.3	0.5	-0.3	0.8	0.8	0.8
Gross fixed capital formation	257.5 ¹⁾	-14.3	-4.0	4.4	2.7	5.3	4.2	3.8	3.7
Changes in inventories ²⁾	0.0 ¹⁾	-2.0	0.9	0.1	0.1	0.0	0.0	0.0	-0.1
Export of goods and services	765.9 ¹⁾	-9.7	3.6	3.8	3.9	4.4	4.0	5.0	4.3
Import goods and services	738.7 ¹⁾	-12.5	2.9	4.4	4.5	4.9	5.2	5.2	4.7
Contributions to real GDP growth									
		Percentage points							
Final domestic demand		-4.3	0.7	1.7	1.8	2.1	2.1	2.3	2.1
Changes in inventories ²⁾		-2.0	0.9	0.1	0.1	0.0	0.0	0.0	-0.1
External balance goods and services		1.1	0.5	-0.1	-0.1	0.0	-0.4	0.1	-0.1

1) Based on chained 2000-prices. Growth rates are also based on chained indices.

2) Contribution of changes in stock to GDP growth.

Source: Statistics Denmark and own calculations.

Table 1b
Price developments

	2010	2009	2010	2011	2012	2013	2014	2015	2020
	Level	Rate of change, per cent							
GDP-deflator	126.1	0.4	3.3	1.5	1.7	2.0	2.0	2.5	2.0
Private consumption deflator	119.8	1.3	2.6	2.4	1.4	1.9	1.9	2.0	1.8
Consumer price index	122.4	1.3	2.3	2.4	1.4	2.8	1.8	2.0	1.8
HICP	110.8	1.1	2.2	2.6	1.4	2.5	2.2	2.4	1.8
Net price index	124.7	2.1	2.0	2.3	1.4	1.3	1.8	2.0	1.9
Public consumption deflator	132.2	3.5	2.4	1.1	1.9	2.1	2.4	2.6	2.7
Investment deflator	112.9	-3.5	-1.7	1.1	1.8	3.7	2.7	4.1	1.3
Export price deflator	115.0	-8.4	7.2	2.8	1.6	0.8	1.3	1.5	1.8
Import price deflator	106.1	-7.7	4.4	3.5	1.4	1.3	1.5	1.5	1.6

Note: For all price indices 2000=100.

Source: Statistics Denmark and own calculations.

Table 1c
Labour market development

	2010	2009	2010	2011	2012	2013	2014	2015	2020
	Level	Rate of change, per cent							
Employment, 1,000 persons	2,763.9	-2.9	-2.1	0.1	0.3	0.5	1.0	0.7	0.6
Employment, hours worked (mill. hours)	4,315.2	-3.6	-2.0	0.1	0.2	0.5	0.9	0.7	0.9
Unemployment rate (per cent) ¹⁾ , harmonized EU-definition		6.0	7.4	7.0	6.6	6.3	5.9	5.5	5.5
Labour productivity, persons (1,000 DKK) ²⁾	500.8	-2.4	4.3	1.6	1.5	1.6	0.8	1.7	1.4
Labour productivity, hours worked (DKK) ³⁾	320.7	-1.7	4.2	1.7	1.6	1.6	0.8	1.7	1.1
Compensation of employees (bn. DKK) ⁴⁾	977.4	-1.0	0.5	1.8	2.7	3.2	3.8	3.9	4.2
Compensation per employee ⁵⁾	377.0	2.2	2.8	1.7	2.4	2.8	2.9	3.2	3.6

1) The number corresponds to the EU-harmonized unemployment in per cent of the labour force. The data is based on Statistics Denmark's Labour Force Survey (AKU). The structural unemployment is 3.4 per cent in 2015 based on the national unemployment definition. There is uncertainty with respect to the relation between the national and the harmonized unemployment definition.

2) Calculated as real GDP per person employed, where GDP is based on chained 2000-prices.

3) Calculated as real GDP per hour worked, where GDP is based on chained 2000-prices.

4) Based on current prices, i.e. growth rates are in nominal terms.

5) Calculated as compensation per employed wage earner.

Source: Statistics Denmark and own calculations.

Table 1d
Sectoral balances

	2009	2010	2011	2012	2013	2014	2015	2020
	Per cent of GDP							
Net lending/borrowing vis-a-vis the rest of the world	3.6	5.5	4.2	4.1	3.9	3.5	3.7	2.6
<i>Of which:</i>								
- Balance of goods and services	3.8	5.6	5.2	5.1	4.7	4.1	4.1	3.7
- Balance of primary incomes and transfers	-0.2	-0.2	-1.0	-1.1	-0.9	-0.7	-0.5	-1.2
- Capital account	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net lending of the private sector	6.4	8.4	8.2	8.7	5.6	4.6	4.2	2.6
Net lending of general government ¹⁾	-2.8	-2.9	-4.0	-4.6	-1.8	-1.2	-0.5	0.0
Statistical discrepancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

1) Public balance (net lending) is based on national accounts. In 2012 the general government deficit is extraordinary high due to the repayment of early retirement contributions in continuation of the suggested retirement reform.

Source: Statistics Denmark and own calculations.

Table 2
General government budgetary prospects (EDP-basis)

	2010	2009	2010	2011	2012	2013	2014	2015	2020
	Bn. DKK	Per cent of GDP							
Net lending (EDO B.9) by sub-sector									
General government (EDP-form)	-47.4	-2.7	-2.7	-3.8	-4.5	-1.7	-1.1	-0.5	0.0
Central government	-38.7	-1.9	-2.2	-3.8	-4.5	-1.6	-1.1	-0.5	0.0
Local government	-8.6	-0.8	-0.5	0.0	0.0	0.0	0.0	0.0	0.0
Social security funds	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
General government (S13)									
Total revenue ¹⁾	943.6	54.3	54.1	52.0	52.1	52.6	53.0	52.7	52.3
Total expenditure ²⁾	991.0	57.0	56.8	55.8	56.6	54.2	54.1	53.3	52.3
Net lending	-47.4	-2.7	-2.7	-3.8	-4.5	-1.7	-1.1	-0.5	0.0
Interest expenditures	30.7	1.8	1.8	1.7	1.8	2.1	2.3	2.3	2.5
Primary balance ³⁾	-16.7	-0.9	-1.0	-2.1	-2.7	0.4	1.2	1.8	2.5
One-off effects ⁴⁾		-1.0	0.5	-1.2	-2.2	-0.5	-0.3	0.0	0.0
Selected components of revenue									
Total taxes ⁵⁾	824.4	47.2	47.2	45.3	46.1	46.4	46.9	46.7	46.2
Taxes on production and imports	296.0	17.0	17.0	17.1	17.1	17.3	17.5	17.5	17.4
Current taxes on income and wealth etc.	524.6	30.0	30.0	28.0	28.8	28.9	29.1	29.0	28.6
Capital taxes	3.8	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Social contributions ⁶⁾	17.4	1.0	1.0	1.0	0.7	0.6	0.6	0.6	0.6
Property taxes ⁷⁾	37.4	2.3	2.1	2.1	1.8	1.7	1.8	1.8	2.0
Other (residual) ⁸⁾	64.4	3.8	3.7	3.6	3.4	3.8	3.7	3.6	3.5
Total revenue ²⁾	943.6	54.3	54.1	52.0	52.1	52.6	53.0	52.7	52.3
p.m.: tax burden ⁹⁾	841.8	48.2	48.2	46.3	46.8	47.1	47.5	47.3	46.8

Table 2 (continued)
General government budgetary prospects (EDP-basis)

	2010	2009	2010	2011	2012	2013	2014	2015	2020
	Bn. DKK	Per cent of GDP							
Selected components of expenditure									
Compensation of employees and intermediate consumption	509.3	29.8	29.2	28.5	28.1	27.5	27.4	27.0	26.6
- Compensation of employees	334.1	19.5	19.1	18.6	18.3	18.0	17.9	17.6	17.3
- Intermediate consumption	175.2	10.3	10.0	9.9	9.8	9.5	9.5	9.4	9.3
Total social transfers	329.7	18.8	18.9	18.9	18.5	18.4	18.2	17.9	17.3
- Social transfers in kind ⁸⁾	27.6	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.5
- Other than in kind	302.1	17.1	17.3	17.3	16.9	16.8	16.6	16.4	15.8
Interest expenditures	30.7	1.8	1.8	1.7	1.8	2.1	2.3	2.3	2.5
Subsidies	45.7	2.6	2.6	2.5	2.5	2.4	2.4	2.4	2.5
Gross fixed capital formation	37.7	2.0	2.2	2.3	2.1	1.9	1.8	1.8	1.8
Other (residual) ⁸⁾	37.8	2.1	2.1	2.0	3.6	2.0	2.0	1.9	1.7
Total expenditure ²⁾	991.0	57.0	56.8	55.8	56.6	54.2	54.1	53.3	52.3
p.m.: Public consumption	513.5	30.0	29.4	28.7	28.4	27.8	27.6	27.2	26.8

Note: Public balance figures are on EDP-basis. In 2012 the general government deficit is extraordinary high due to the repayment of early retirement contributions in continuation of the suggested retirement reform.

- 1) Excl. central government revenues from sale of UMTS-licenses.
- 2) Adjusted for swap-related flows and spending on infrastructure investments.
- 3) Defined as the EDP-definition the net lending plus EDP-definition of the interest expenditures.
- 4) Based on the calculation of the structural budget balance and includes temporary variations in revenues from pension yield taxation. North Sea activities, net interest, corporate taxes and other special items. The structural budget balance is not calculated on EDP-basis. The calculations of the structural budget balance are based on public finances according to national account principles.
- 5) Defined as the sum of taxes on production and imports, current taxes on income, wealth, etc., and capital taxes. Does not include compulsory social contributions, which are traditionally included in the tax burden.
- 6) Does not include voluntary and imputed social contributions, since these are not included in the tax burden.
- 7) Incl. interest income and dividends and land rent etc.
- 8) Statistic Denmark does not publish figures for all the subgroups (P.11+P.12+P.131+D.39+D.7+D.9 (other than D.91), D.6311, D.63121, D.63131, D.29+D.4 (other than D.41)+D.5+D.7+D.9+P.52+P.53+K.2+D.8), and no estimates are available for these individual components in the projections.
- 9) Defined as the sum of taxes on production and imports (incl. those collected by the EU), current taxes on income, wealth etc., and capital taxes and compulsory social contributions.

Source: Statistics Denmark and own calculations.

Table 3
General government expenditure by function

	COFOG	2008	2009
		Per cent of GDP	
General public services	1	7.0	7.6
Defence	2	1.5	1.5
Public order and safety	3	1.1	1.2
Economic affairs	4	2.5	2.9
Environmental protection	5	0.5	0.5
Housing and community amenities	6	0.6	0.6
Health	7	7.5	8.5
Recreation, culture and religion	8	1.6	1.7
Education	9	6.8	7.8
Social protection	10	21.8	24.7
Total expenditure ¹⁾	TE	51.0	57.0

Note: Short-term and longer-term projections do not include general government expenditures by function. The focus of both short-term and longer-term projections is public expenditures by type of transaction.

1) Adjusted for swap-related flows, i.e. comparable to expenditures in table 2.

Source: Statistics Denmark and own calculations.

Table 4
General government debt development

	2009	2010	2011	2012	2013	2014	2015	2020
Per cent of GDP								
Gross debt	41.8	43.6	43.0	47.4	48.0	46.4	46.1	44.0
Change in gross debt ratio ¹⁾	7.3	1.8	-0.5	4.3	0.7	-1.6	-0.3	-0.5
Change in gross debt ²⁾	5.5	3.9	0.8	5.8	2.5	0.2	1.9	1.3
Contributions to change in gross debt								
Primary balance ³⁾	-0.9	-1.0	-2.1	-2.7	0.4	1.2	1.8	2.5
Interest expenditure ⁴⁾	1.8	1.8	1.7	1.8	2.1	2.3	2.3	2.5
Stock-flow adjustment ⁵⁾	4.6	3.1	1.2	6.6	0.0	-3.3	-2.2	-3.7
p.m. implicit interest rate on debt ⁶⁾	5.0	4.4	4.1	4.4	4.6	4.9	5.2	5.8
Other relevant variables								
Central government account in Danmarks Nationalbank	11.7	10.2	8.2	8.0	-	-	-	-
Public net debt ⁷⁾	-4.6	-1.1	2.9	7.4	8.4	8.7	8.4	5.6
Net debt in central and local governments ⁷⁾	-4.6	-1.1	3.0	7.4	8.4	8.7	8.3	5.4

Note: In 2012 the general government deficit is extraordinary high due to the repayment of early retirement contributions in continuation of the suggested retirement reform.

- 1) Change in gross debt ratio is defined as $D_t/GDP_t - D_{t-1}/GDP_{t-1}$, where D is public debt measured in nominal terms (DKK).
- 2) Change in gross debt is defined as $D_t/GDP_t - D_{t-1}/GDP_t$, where D is public debt measured in nominal terms (DKK).
- 3) As defined in table 2.
- 4) As defined in table 2.
- 5) At present information is not available to split stock-flow adjustment into subgroups.
- 6) Proxied by interest expenditures divided by the debt level of the previous year.
- 7) In the specification of public net debt and net debt in central and local governments the central government liquid assets in Danmarks Nationalbank as well as other assets are subtracted.

Source: Statistics Denmark and own calculations.

Table 5
Cyclical developments

	2009	2010	2011	2012	2013	2014	2015	2020
Per cent								
Real GDP growth	-5.2	2.1	1.8	1.8	2.1	1.8	2.4	2.0
Per cent of GDP								
General government balance	-2.8	-2.9	-4.0	-4.6	-1.8	-1.2	-0.5	0.0
Interest expenditure ¹⁾	1.8	1.8	1.7	1.8	2.1	2.3	2.3	2.5
One-off effects ²⁾	-1.0	0.5	-1.2	-2.2	-0.5	-0.3	0.0	0.0
Per cent								
Potential GDP growth ³⁾	-0.2	0.3	1.3	1.5	1.5	1.5	1.7	1.5
Percentage points								
Of which, contribution from:								
- Labour	-0.2	0.0	0.0	0.0	-0.1	0.1	0.0	0.4
- Of which labour force	0.4	-0.2	0.0	0.0	-0.1	0.2	0.0	0.4
- Capital	0.6	0.6	0.7	0.7	0.9	0.8	0.9	0.5
- Total factor productivity	-0.7	-0.2	0.6	0.9	0.7	0.6	0.8	0.6
Per cent of GDP								
Output gap	-3.4	-2.1	-1.8	-1.7	-1.2	-0.6	0.0	0.0
Cyclical component ⁴⁾	-1.7	-1.8	-1.6	-1.5	-1.1	-0.5	0.0	0.0
Structural budget balance ⁵⁾	-0.2	-1.7	-1.1	-0.9	-0.2	-0.3	-0.5	0.0
Primary structural balance ⁵⁾	0.3	-1.2	-0.6	-0.3	0.5	0.5	0.3	0.0

Note: In 2012 the general government deficit is extraordinary high due to the repayment of early retirement contributions in continuation of the suggested retirement reform.

- 1) As defined in table 2.
- 2) Based on the calculation of the structural budget balance and includes temporary variations in revenues from pension yield taxation, North Sea activities, net interest, corporate taxes and other special items.
- 3) Including a contribution from indirect taxes (in real terms), which in isolation for example reduced GDP growth by 0.6 percentage points in 2009, compared to the GVA growth.
- 4) The calculation of the cyclical component is based on the output gap.
- 5) The structural budget balance is not calculated on EDP-basis. The calculations of structural budget balance are based on public finances according to national account principles. The primary structural budget balance is based on an actual primary balance defined via net interest expenditures and not gross interest expenditures.

Source: Statistics Denmark and own calculations.

Table 6
Divergence from previous update

	2009	2010	2011	2012	2013	2014	2015	2020
Rate of change, per cent								
Real GDP growth								
- Previous update	-4.3	1.3	1.6	2.0	2.3	2.6	2.6	1.4
- Current update	-5.2	2.1	1.8	1.8	2.1	1.8	2.4	2.0
- Difference	-0.9	0.8	0.2	-0.2	-0.2	-0.8	-0.2	0.6
Per cent of GDP								
Output gap								
- Previous update	-2.4	-3.0	-2.8	-2.1	-1.4	-0.7	0.0	0.0
- Current update	-3.4	-2.1	-1.8	-1.7	-1.2	-0.6	0.0	0.0
- Difference	-1.1	0.9	1.0	0.4	0.2	0.1	0.0	0.0
Actual budget Balance¹⁾								
- Previous update	-3.0	-5.5	-4.2	-3.2	-1.9	-0.8	0.0	-1.0
- Current update	-2.8	-2.9	-4.0	-4.6	-1.8	-1.2	-0.5	0.0
- Difference	0.2	2.6	0.2	-1.5	0.1	-0.3	-0.5	1.0
Gross debt level								
- Previous update	38.5	41.8	46.2	48.3	48.1	46.1	45.0	44.0
- Current update	41.8	43.6	43.0	47.4	48.0	46.4	46.1	44.0
- Difference	3.3	1.8	-3.2	-0.9	-0.1	0.4	1.1	0.0

Note: In 2012 the general government deficit is extraordinary high due to the repayment of early retirement contributions in continuation of the suggested retirement reform.

1) Statistics Denmark's latest EDP-reporting in April, showed a deficit of 2.7 per cent of GDP on EDP-basis in 2010.

Source: Own calculations.

Table 7
Long-term sustainability of public finances

	2000	2005	2010	2020	2030	2050	2060	2070
Per cent of GDP								
Total expenditure	53.1	51.9	57.0	52.3	52.8	52.4	51.0	50.3
Of which:								
- Age-related expenditure	27.2	28.3	32.5	29.0	29.1	28.7	27.7	27.6
- Pension expenditure	9.4	9.4	10.2	9.5	9.0	7.9	7.3	7.3
- Social security pension	9.4	9.4	10.2	9.5	9.0	7.9	7.3	7.3
- Old-age and early pensions	7.0	7.3	8.0	7.4	6.9	5.6	4.9	4.8
- Other pensions	2.4	2.2	2.3	2.1	2.1	2.3	2.5	2.6
- Occupational pensions								
- Health care	6.1	6.4	7.5	6.8	7.3	7.7	7.6	7.6
- Long-term care	1.2	1.2	1.3	1.3	1.6	1.9	1.8	1.8
- Education expenditure	6.2	6.6	7.8	6.6	6.4	6.6	6.3	6.4
- Other age-related expenditures	4.3	4.7	5.7	4.7	4.7	4.6	4.6	4.6
- Interest expenditure	4.3	2.6	2.2	2.6	2.3	2.4	2.0	1.3
Total Revenue	55.3	56.9	54.1	52.3	52.1	52.2	51.8	52.2
Of which:								
- Property income ¹⁾	1.9	1.5	1.7	1.9	1.8	1.7	1.7	1.7
- Revenue from pension payouts net	-0.4	-1.1	-0.7	-0.1	-0.2	0.5	0.5	0.8
Pension reserve fund assets	115.9	128.8	140.8	146.5	166.3	189.5	194.0	197.7
- Public pension fund assets ²⁾	1.1	0.0	0.0	-0.2	-0.4	-0.6	-0.7	-0.7

Table 7 (continued)**Long-term sustainability of public finances**

	2000	2005	2010	2020	2030	2050	2060	2070
	Per cent							
Assumptions								
Labour productivity growth	3.7	0.4	4.1	1.4	1.1	1.2	1.2	1.2
Real GDP growth ³⁾	3.5	2.4	2.1	2.0	2.1	2.1	2.0	2.0
Participation rate males (aged 20-64)	84.1	84.8	84.9	85.9	88.6	89.4	89.4	89.4
Participation rate females (aged 20-64)	75.3	76.1	75.6	77.3	80.3	82.0	81.9	82.1
Total participation rate (aged 20-64)	79.8	80.5	80.3	81.6	84.5	85.7	85.7	85.8
Unemployment rate	4.8	4.9	4.0	3.4	3.4	3.4	3.4	3.4
Structural unemployment	6.0	4.5	3.5	3.4	3.4	3.4	3.4	3.4
Population aged 65+, 1,000 persons	791.0	817.7	918.2	1,146.4	1,332.2	1,438.8	1,471.2	1,562.6

Note: Figures are based on national account principles. i.e. not on EDP-basis.

- 1) Includes public revenues from interest income and dividends.
- 2) Public funds assets is adjusted downward by almost DKK 300 billion in 2005 due to the changed classification of the ATP fund due to the revision of national accounts.
- 3) In some years after 2025 GDP growth is effected by the regulation of early- and old age person ages in line with longevity.

Source: Statistics Denmark and own calculations.

Tabel 8**Basic assumptions**

	2009	2010	2011	2012	2013	2014	2015	2020
Short term interest rate (annual average)	2.2	1.1	1.6	2.2	2.4	2.6	2.9	4.3
Long term interest rate (annual average)	3.6	2.9	3.4	4.0	4.2	4.3	4.5	5.3
Exchange rate USD/EUR (annual average)	138.9	132.4	138.6	138.6	138.6	135.8	133.1	133.1
Nominal effective exchange rate (1980=100)	107.8	104.0	104.2	104.2	104.2	104.2	104.2	104.2
World excluding EU, GDP growth	0.3	5.6	4.6	4.7	5.0	5.0	5.0	5.0
EU GDP growth	-4.2	1.8	1.8	2.0	2.2	2.5	2.5	2.5
Growth of relevant foreign markets	-10.6	7.3	5.8	6.3	7.6	1.8	0.9	4.1
World import volumes, excluding EU	-13.6	13.0	8.3	7.9	8.5	8.5	8.5	8.5
Oil prices	61.9	79.9	105.9	100.0	101.7	103.4	105.1	128.7

Source: ADAM, EU commission: 'Common external assumptions april 2011' and own calculations.

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