

Denmark's Convergence Programme 2008

December 2008

The Danish Government

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Schultz Distribution
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Cover: BGRAPHIC
Printed by: Schultz Grafisk
No. of copies: 200
Price: Free of charge
ISBN: 978-87-7856-901-1

Electronic Version:

Production: Schultz
ISBN: 978-87-7856-902-8

The publication can be downloaded at:

www.fm.dk



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The cutoff date for information is 5. December 2008 and the Fiscal Bill for 2009 was adopted on 11. December 2008.

1. Denmark's Convergence Programme 2008¹

1.1 Weakened prospects for growth and public finances in the next few years

Prospects for the international economy have weakened markedly over the last months, particularly after the escalation of the financial turmoil in September and October when interbank markets froze up and equity prices plummeted. The wide-ranging financial rescue plans currently being implemented in many countries and significant monetary policy easing, including in the euro area and in the USA, has led to some markets stabilization, but the uncertainty about the future course of events and the impact on the real economy is marked.

For the global economy, the decline in equity prices and weakening housing markets in many countries as well as generally high uncertainty are set to dampen consumption and investment. Moreover, bank lending is likely to be more restrictive in view of the banking sector's need for consolidation after the liquidity crisis and the high credit growth of the last few years.

On the other hand, oil prices and other raw material prices have fallen sharply. Inflation is set to decrease, interest rates have been lowered and additional rate cuts may follow. Going forward market interest rates should fall relative to monetary policy rates on the back of the many recent initiatives to restore functioning financial markets, including government-backed bank guarantees and ample access to liquidity at central banks in many countries. The US dollar has strengthened, improving European (and Danish) competitiveness.

Overall, growth prospects have been marked down sharply in Europe, the US and Asia with very weak or negative growth in 2009 in most OECD countries, followed by a moderate upturn in 2010².

In Denmark, unemployment is at a historical low (1³/₄ percent) and significantly below the estimated structural level, while employment remains very high. The prospect of an adjustment in the level of activity has been expected for some time. Thus, in Denmark's *Convergence Programme 2007* (CP07), growth was expected to be weak at around ³/₄ per cent per year in 2009 and 2010, and unemployment was expected to rise to around 3¹/₂ per cent of the labour force by 2011. Reflecting the high capacity pressures in the Danish economy, GDP growth has been subdued since late 2006,

¹ The Convergence Programme is prepared in accordance with the Stability and Growth Pact (primarily Council Regulation (EU) No. 1466/97 as amended by Council Regulation No. 1055/2005) and the "Code of Conduct" adopted by ECOFIN. Under the 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 convergence programme and the Council's opinion are transmitted to the Danish parliament.

² The Convergence Programme scenario is based on the *Economic Survey December 2008*. The assumptions regarding the international economy correspond to the Commission's *Economic Forecast, autumn 2008*, on which Member States (especially euro- and ERM II-countries) are invited to base their Stability and Convergence Programmes.

and continued demand growth has been reflected in higher imports. Total demand is now abating due to the escalating financial turmoil, stagnating international growth and declining house prices, which in turn reduces labour market pressures.

Accordingly, growth projections have now been reduced to -0.2 per cent in 2009 and 0.7 per cent in 2010. Unemployment is expected to be close to its structural level at around 3½ per cent in 2010, and labour market pressures are therefore set to abate faster than previously expected. Even in the absence of the financial turmoil Denmark would be facing a period of low growth and falling job numbers after a couple of years of very strong labour market pressures, *cf. CP07*.

For the Danish economy the events of the last few months have the following implications, among others:

- Public finances will deteriorate markedly in 2009 and 2010. The estimated fiscal surplus of around 50 billion DKR in 2008 (3 per cent of GDP) is expected to turn into balance in 2009 and a deficit of around 25 billion DKR in 2010 (1¼ per cent of GDP). The deteriorating fiscal balance partly mirrors the financial turmoil, including the drop in oil and equity prices which sharply lowers the income from specific revenue sources. The structural surplus is largely unaffected by cyclical changes and swings in oil and equity prices etc., but active fiscal policy decisions lower the structural surplus by close to 1 per cent of GDP in 2009. The structural fiscal balance is estimated to be around 1 per cent of GDP in 2009 and slightly less than 1 per cent in 2010. The structural balance is therefore in line with but in the lower range of the target interval in the 2015-plan calling for structural surpluses of ¾ - 1¾ per cent of GDP towards 2010.
- Over the last few months, the interest rate spread between Denmark and the euro area has widened. To stem capital outflows, Danmarks Nationalbank in October raised its key policy rate from 4.6 per cent to first 5 and then 5.5 per cent, while the ECB cut its refinancing rate by half a point to 3.75 per cent. When the ECB lowered interest rates in November and December to 2½ per cent, currency pressures had abated sufficiently for the Nationalbank to follow suit and lower its interest rate to 4¼ per cent, but the spread remained high at 1.75 per cent. Periods of financial turmoil are often associated with foreign exchange outflows and higher liquidity premiums in smaller markets.
- Overall, substantial uncertainty surrounds the outlook and the impact of the financial turmoil on the real economy. With a historically low unemployment rate of 1.7 per cent, the Danish economy is coming from a different position from most other economies, including the euro area and the US. While GDP growth has slowed considerably since end-2006, employment is at a historical high and the output gap is at a high (positive) level after the strong upswing since 2003. In view of this position with very high capacity utilisation and unemployment significantly below the structural level, as well as prospects for a shrinking labour

force and downward pressure on average working hours owing to demographics, the growth opportunities are in any case quite limited in the coming years.

Periods of financial distress require particular discipline in small economies which, like Denmark, follow a stable exchange rate policy and remain outside the euro area. Responsible fiscal policies and structural reforms that strengthen labour supply support the stable exchange rate policy and provide the best conditions for a lower interest rate spread vis-à-vis the euro area.

At the current juncture, the primary challenge is to get financial markets to function again, which includes avoiding a credit squeeze whereby otherwise sound companies and households have difficulties financing their activities. Meeting this challenge will support employment and help avoid a hard landing. A series of initiatives have been taken in order to support financial stability, *cf. box 1.1*.

Stabilization policies are thus generally aimed at achieving a controlled slowing in which the pressure on wages and competitiveness can abate, while retaining room for fiscal policy manoeuvre in case the global downturn is prolonged.

The fiscal policies adopted for 2009 – with the fiscal bill adopted on 11. December – entail an easing of 16 billion DKR (close to 1 per cent of GDP) as measured by the direct budgetary impact (that is, the direct impact on public revenues and expenditures). Fiscal policy is estimated to inject a stimulus to demand growth of around 0.4 per cent of GDP as measured by the first-year fiscal effect, *cf. chapter 4*. The fiscal stimulus includes tax cuts of 9 billion DKR in 2009 (½ per cent of GDP), mainly reflecting the tax agreement from 2007³. At the same time, public consumption spending is expected to grow by almost 5½ per cent in nominal terms in 2009, partly due to public sector wage growth of 5 per cent reflecting the collective bargaining agreement from last spring. In the wake of the financial turmoil, the suspension of payments to the Special Pensions scheme (SP) has been extended to 2009. In the projections, SP-payments are technically assumed to be suspended also after 2009. Households' real disposable income is expected to rise by 3¾ percent in 2009, which is almost on a par with 2004, when the so-called Spring Package took effect (fiscal stimulus containing income tax reductions etc.).

The deterioration in public finances also reflects the so-called automatic stabilisers in the shape of rising expenditures for e.g. unemployment benefits and lower tax payments, which dampen the slowdown without risks of inappropriate dosage and timing and without lasting deterioration of public finances. The automatic stabilisers are stronger in Denmark than in most other countries.

³ The 9 billion DKR in 2009 includes the compensating cut in state income taxes that under the "tax freeze" compensates for an increase in the average local government (income) taxes in 2008, *cf. chapter 4*. The annual compensation amounts to around 2 billion DKR, but the compensation for both 2008 and 2009 is enacted in 2009, so in this vein taxes are consequently reduced by 4 billion DKR in 2009 compared to 2008.

Box 1.1**Danish initiatives to ensure financial stability**

A range of initiatives have been launched over the last months to help stabilize financial markets. The initiatives include: a) Easier access to liquidity from Danmarks Nationalbank; b) Financial Stability Act; c) Agreement in the pension area; and d) Issuance of 30-year government bonds. Moreover, to foster improvements in public debt management, changes have been made to the regulations for The Social Pension Fund (Den Sociale Pensionsfond).

The initiatives for securing financial stability are described in more detail at the Ministry of Economic and Business Affairs' home page, cf. www.oem.dk.

Easier access to liquidity from Danmarks Nationalbank

During 2008 Danmarks Nationalbank has enacted a number of initiatives providing banks with easier access to liquidity at the central bank. In May, the central bank opened a new lending facility, supporting the exchange of liquidity in the money market by allowing banks and mortgage credit institutions the possibility to borrow against a new special type of bills, loan bills, on a weekly basis until May 2009. Until the end of September 2010 banks and mortgage credit institutes have access to borrow on the basis of excess capital solvency and certain types of securities. In cooperation with the ECB and the Fed, the central bank has established a reciprocal swap facility increasing the euro and dollar liquidity in the market.

Financial Stability Act

On October 10 the Danish parliament (Folketinget) passed the Financial Stability Act, under which financial institutions that are members of the Private Contingency Association will cover the claims against banks of up to 35 billion DKR from unsecured creditors, to the extent that such claims are not otherwise covered. Members of the Private Contingency Association operating in Denmark, branches of Danish banks operating abroad and foreign banks in Denmark are covered by the Act to the extent that the banks are not covered by others. Claims exceeding 35 billion DKR will be covered by the state. The state thus provides an unlimited government-backed guarantee for unsecured creditors. Members of the Private Contingency Association may pay the guarantee commission in shares in order to avoid weakening their liquidity position.

Agreement in the pension area

On October 31 the government and the Danish Insurance Association (Forsikring & Pension) made an agreement on new initiatives helping to ensure that pension savers do not incur unnecessary losses as a result of the financial turmoil. The new initiatives are to be seen in light of the difficult market conditions, which had brought insurance and pension companies in a position where they could be forced to sell out of their holdings of Danish mortgage bonds.

Issuance of 30-year government bonds

Danmarks Nationalbank has issued 30-year government bonds by auctions and tap-sale since November 11. The 30-year bonds are well-suited for risk-management in the pension sector by hedging exposures to long-term liabilities, and are expected to replace previous hedging instruments especially in euros. This may influence the foreign-exchange reserves to the extent that the previous hedging instruments have affected the foreign-exchange position of the pension sector.

Changes to the regulations of the Social Pension Fund (Den Sociale Pensionsfond – DSP)

To foster improved public debt management, the Social Pension Fund's regulations were changed on November 3 so that a higher share of the Fund's assets may be invested in securities other than government bonds, including in mortgage bonds. This increases the options for securing more government bonds in circulation in order to strengthen the liquidity in the government bond markets, in a situation where public debt has fallen significantly. Also, the changes facilitate the hedging of government interest rate risks related to the financing of government-subsidised (social) housing. In December 2008 the fund is expected to increase its investments in short term mortgage bonds by around 27 billion DKR. Through this transaction the state invests, via the DSP, in the same bonds used in financing subsidised housing and thereby covers the state's total interest rate exposure.

At the current juncture, the structural balance is estimated to decline from above 2 per cent of GDP in 2008 to around 1 per cent of GDP in 2009 and below 1 per cent in 2010, *cf. Economic Survey, December 2008*. At the outset, remaining possibilities for fiscal action should be used and take effect only when there is a high degree of certainty that the pressures on competitiveness and inflation are vanishing from the economy and it is judged that the automatic stabilisers and the evolution of financial conditions (particularly interest rates) are not adequate to safeguard against substantial imbalances in the economy.

1.2 Underlying trends in public finances may be less favourable than hitherto

The Danish economy has experienced a prolonged period of robust growth in production and employment and favourable conditions for public finances, both on the revenue side and as regards cyclical expenditures.

Public debt has been reduced sharply during the recent upswing and owing to high revenues from oil- and gas extraction in the North Sea as well as company taxes. In this vein, the fiscal surplus was historically high at 4½-5 per cent of GDP in 2005-2007 (75-80 billion DKR per year). The estimated 2008 surplus of around 3 per cent of GDP is also higher than what can be expected under normal conditions.

As mentioned, public finances are now expected to show rough balance in 2009 and a deficit of around 1¼ per cent of GDP in 2010. The estimates for 2009 and 2010 reflect the cyclical downturn and sharply lower oil and equity prices. In addition, income taxes are lowered in line the 2007 tax agreement, and spending on public services makes up a growing share of GDP. The adaption of the tax regime for accrued pension yields passed in December 2007 owing to EU legislation, is estimated to increase, as a one-off, the public sector's transfers to households by around 15 billion DKR in 2010 (0.8 per cent of GDP). These changes related to the pension yield tax do not affect the sustainability of public finances nor the structural balance.

Since 2001, when the initial 2010-plan was adopted, and up until 2007, the underlying developments in public finances have been more favourable than initially assumed. Hence, the structural balance and the fiscal sustainability have stayed on track, even though public consumption expenditures have increased more and taxes have been reduced more than assumed. This mainly reflects unexpectedly positive developments on the revenue side. Many OECD countries have likewise experienced so-called "revenue-rich growth" over the period. Internationally, these developments have been associated with a number of tax bases having grown faster than GDP in line with rising asset prices, including in particular for equities and property.

Also in Denmark, a number of tax bases have grown faster than GDP, including e.g. revenues from activities in the North Sea, and this has contributed to higher public revenues as a share of GDP despite discretionary reductions in taxation, *cf. chapter 2*. Meanwhile, the methods used for calculating the structural balance and the sustain-

ability indicator seek to correct for temporary shifts in tax bases relative to GDP. In the Ministry of Finance's calculation of the structural balance explicit adjustments are made for shifts in revenues from the tax on accrued pension yields that is highly dependent on developments in equity and bond prices. Corrections are also made for fluctuations in company taxes and North Sea-related revenues.

The decline in equity prices since 2007 and especially during the escalating financial turmoil in the autumn of 2008 has led to a significant reduction in pension wealth. To the extent this reduction is permanent, it will manifest itself in lower pension disbursements and hence lower tax revenues in years to come. By the same token, revenues from pension return taxation and equity income taxation may be lower⁴.

Alongside the financial turmoil, oil prices have plummeted since the summer of 2008, and revenue estimates from North Sea oil and gas extraction have been cut sharply over just a few months. When the Budget proposal for 2009 was presented in August, revenues from the North Sea were estimated at 40 billion DKR (2.1 per cent of GDP) but with a current oil price assumption of 55 \$ per barrel in 2009 revenues are now estimated at 18 billion DKR or 1 per cent of GDP. On current assumptions, the projected future income stream from the North Sea activities converted to a constant annual share of GDP (the so-called permanent revenue impact) is in line with last year's Convergence Programme.

Overall, the outlook for public finances has deteriorated since last year's Convergence Programme. This is so even though developments in the labour market have been stronger than expected until now, with e.g. rising participation rates among immigrants and descendants and lower inflows into voluntary early retirement pension (VERP). Key objectives in the 2015 plan are largely met in the CP08-projection, but the structural balance is on its way down below 1 per cent of GDP in 2010, and the demands on policies have intensified in terms of complying with expenditure targets and implementing structural reforms in order to ensure fiscal sustainability and continued structural surpluses or at least balance up until 2015.

1.3 Target compliance in the CP08 projection: overview

The overall fiscal policy targets in the 2015 plan presented in 2007 are:

- Sustainable fiscal policies (a sustainability indicator of 0).
- Surpluses on the structural balance through 2015. In the years towards 2010, the structural surplus should be in the range of $\frac{3}{4}$ - $1\frac{3}{4}$ per cent of GDP.
- Real public consumption growth of 1 percent per year on average in 2008-2015.
- As a guideline, public consumption expenditures should not amount to more than $2\frac{1}{2}$ per cent of GDP in 2015.

⁴ Meanwhile, increased saving among households in response to the wealth losses incurred can contribute to an increased tax base for capital income taxation.

Owing to higher price and wage growth for public consumption in 2008-2010 and fall-out from the financial turmoil, the sustainability indicator has currently been calculated to be slightly below zero (-0.1 per cent of GDP). The structural balance in 2015 is estimated to be only in rough balance, and the projections indicate that public consumption expenditures may exceed 26½ per cent of GDP in 2015, *cf. table 1.1*. Section 1.5 shows examples of alternative assumptions about e.g. long term oil prices or policy requirements that may contribute to enhanced target fulfilment.

In November 2008, the International Energy Agency (IEA) published a new outlook, in which the projected real price for crude oil was raised by 60-80 per cent compared to the IEA outlook from 2007. The fiscal sustainability indicator would be improved by around 0.2 per cent of GDP if the projections in the Convergence Programme were based on the new IEA projection. For caution and in view of the massive fall in oil prices since the summer of 2008 with current spot prices below 50 \$ per barrel, the CP08 projection is based on the 2007 IEA projection.

The projections in this year's Convergence Programme imply:

- The structural balance in 2015 amounts to -0.1 per cent of GDP. Mainly higher public consumption relative to GDP and lower disbursements from pension funds (due to lower pension wealth) lower the balance relative to CP07. The technical projections beyond 2015 – for which no political decisions have been made on overall fiscal priorities – point to structural deficits exceeding 1 per cent of GDP by 2020. The post-2015 deterioration mainly stems from higher health and elderly care spending, lower North Sea revenues and fiscal costs of the energy and climate targets. In the very long run – after 2030-2040 – the projected balance improves again owing to the indexation of pension age thresholds in line with the 2006 Welfare Reform as well as higher private pension disbursements.
- The current projection implies that public consumption may exceed 27 per cent of GDP in 2015 which is about ½ per cent of GDP more than the benchmark in the 2015 plan. The high share of expenditures compared to the benchmark does not reflect changed priorities in expenditure policies, *cf. below*. Real growth in public expenditures in 2007 to 2015 is in line with the projections in CP07.
- Ensuring fiscal sustainability requires structural reforms increasing employment by 20,000 persons and countering the tendency for average working hours to decline towards 2015. In the CP07 projection, these requirements strengthen public finances permanently by around 0.8 per cent of GDP or 14 billion DKR. With the Job Plan from February and the initiatives agreed in November to reduce sickness absence, close to 1/5 of the initial requirement regarding working hours is met, and the two reforms are estimated to strengthen public finances by around 0.1 per cent of GDP (around 2 billion DKR). The remaining requirement of around 12 billion DKR is, according to the projections, broadly suffi-

cient to ensure fiscal sustainability. Full sustainability can, according to the projections, be secured by measures covering the discrepancy of -0.1 per cent of GDP. That would be the case e.g. if new initiatives raise employment permanently by around 25,000 persons instead of the incorporated 20,000 persons.

Public gross debt (EMU debt) is estimated to increase from 26¼ per cent of GDP by end-2007 to 30¼ per cent by end-2008 and then to decrease to around 22½ per cent of GDP by 2015 given the projected surpluses for most of the period. Rising EMU debt from 2007 to 2008 mainly reflects the mentioned issuance of 30-year government bonds – where the corresponding central bank deposits are not offset in the EMU debt concept – and the new right of the Social Pension Fund to cover interest rate exposures through mortgage bonds that are not offset in the EMU debt calculation either (as opposed to government bonds). The public sector's net asset position, which includes all financial assets and liabilities, is projected to improve from 3½ per cent of GDP by end-2007 to around 6½ per cent of GDP by 2015.

Table 1.1
Overview of target compliance and implementation of required reforms

	CP08	CP07	Target/ benchmark
Per cent of GDP			
Fiscal policy sustainability indicator	-0.1	0.0	0
Structural surplus targets			
- Structural balance in 2009-10 (average)	1	1	¾-1¾
- Structural balance in 2015	-0.1	0.4	≥0
Targets and benchmarks for public consumption			
- Real growth 2008-09 (annual average)	1.4 ¹	1.4 ¹	1.4 ¹
- Real growth 2008-15 (annual average)	1.0	1.0	1.0
- Public consumption expenditures in percent of GDP, 2015	27.1	26.3	≤26½
Implementation of required reforms towards 2015			
- Implemented since DK2015-plan from August 2007	0.1	-	0.8
- Not yet implemented	0.7	0.8	
Note: The average real growth in 2008 and 2009 covers growth of 1.7 per cent in 2008 and 1 per cent in 2009 in CP07, and in CP08 a real growth of 1.6 per cent in 2008 and 1.2 per cent in 2009.			
Source: Ministry of Finance calculations.			

As mentioned, public consumption expenditures are projected to increase from 26¼ per cent of cyclically-adjusted GDP in 2007 to around 27 per cent in 2015, above the 26½ per cent benchmark. This partly reflects a revision of the GDP level in the historical national accounts data by Statistics Denmark which lifts the expenditure share

by 0.3 points compared to CP07, while not affecting sustainability⁵. Furthermore, the increase reflects higher price and wage growth in 2008 and projected for 2009 and 2010 on the basis of, notably, the collective wage agreements. The agreements imply public sector wages growing by 12.8 percent over 2008-10, above the 11 percent assumed in CP07. The wage agreement should be seen in light of pronounced labour market pressures and recruitment challenges in both the private and public sector. Private sector wage growth has also been adjusted upward since CP07. Real growth in public consumption in 2008-10 is, however, in line with the initial assumptions.

According to the 2015 plan the high level of expenditures implies *"an obligation to reassess the priorities in economic policy setting with a view to bringing the expenditure level in line with the benchmark"*. Decisions concerning the high share of expenditures will be taken when there is more certainty about cyclical developments, including effects of the financial turmoil, and the benchmark in 2015 is hence maintained. The high level of expenditures (the highest since 1983) underlines the importance of complying with the real consumption targets, including in counties and municipalities. In addition, the high spending level should be viewed in light of fiscal policy sustainability and the structural balance towards 2015 being broadly in line with earlier assumptions.

Accordingly, the broad fiscal policy priorities have not been altered in CP08 and real growth in public consumption towards 2015 is essentially as in CP07. Meanwhile, the challenges of expenditure prioritization are intensified by changes to the demographic outlook whereby the projected number of users of public services grows by ½ per cent more in the current projection to 2015 than in CP07⁶.

A large part of the assumed spending growth has already been allocated for specific purposes, including the "Quality reform" of public services, the targets to raise the share of young people completing an education, and the targeted increase in public research expenditures to 1 per cent of GDP as of 2010. Meanwhile, increasing public health expenditures are expected to account for a major part of the growth targets. To a large extent, therefore, expenditures for new initiatives will have to be found through prioritizing within the given expenditure growth rates.

1.4 Requirements for structural reforms

In order to secure sustainable financing of public expenditures in the longer term and a continuation of the tax freeze (the effects of which have been included up to 2015), increasing labour supply remains an essential challenge. In the CP08 projection the requirement for a largely sustainable fiscal policy and structural balance of around 0 per cent of GDP in 2015 is, as mentioned, the implementation of structural

⁵ A downward revision of nominal GDP in the historical years forming the basis of the projections, increases both the share of expenditures and revenues in GDP (for given revenues and expenditures in billion DKR) and therefore affects neither the structural balance nor the sustainability indicator.

⁶ With expenditures per user as in CP07, the increased number of users implied by demographics would in itself correspond to an increase in public expenditure's share of GDP of 0.1 per cent in 2015. The higher number of users reflects a higher birth rate and hence more children in the updated population projections, cf. *DRE.AM2008*.

reforms increasing the labour force by 20,000 persons and avoiding reduced average working hours from 2009 to 2015, *cf. chapter 2*. The projections thus include requirements to permanently improve the public finances by 0.7 per cent of GDP or 12 billion DKR. Reforms will also increase the growth potential which is currently quite limited, partly due to demographic developments.

A Labour Market Commission was established in December 2007 with the purpose of proposing labour market reforms to meet the reform requirements in the 2015 plan. The Commission presented a first report in October 2008, focusing on proposals to increase labour supply in the short term. The Labour Market Commission is expected to present its final report in the summer of 2009.

Furthermore, a Tax Commission was established in January 2008 to work out models for a tax reform containing a significant reduction in personal income taxes, including the marginal income tax. The reform proposals shall support the government's objectives in the areas of climate and environment policies, be well-balanced in terms of income distribution and be implemented within the sustainable fiscal framework laid down in the 2015 plan. The property value tax will remain unchanged. The Tax Commission will present their report in February 2009.

The reform requirement in CP08 (largely) ensures sustainable financing of expenditure priorities, the tax freeze and fiscal costs related to the energy and climate targets etc. In a projection with no further reforms, the prospects are (*cf. table 1.2*):

- A permanent financing need of around 14 billion DKR (0.8 per cent of GDP). The amount corresponds to the sustainability indicator of -0.1 per cent of GDP excluding contributions from reforms amounting to 0.7 per cent of GDP.
- A deficit on the structural balance of almost 1 per cent of GDP in 2015. In the projection excluding reforms, Denmark would not comply with the provisions in the Stability and Growth Pact according to which Denmark may not aim for a structural deficit higher than ½ per cent of GDP.
- Public consumption's share of GDP would exceed 27½ per cent in 2015 because GDP growth would be lower. This would be close to the level in 1982-1983 when the spending share was at a historical high.

Table 1.2			
CP08-projection and scenario without required structural reforms			
	CP08	Projection excl. reforms	Some consequences of scenario excl. reforms
Per cent of GDP			
Fiscal policy sustainability indicator	-0.1	-0.8	Not sustainable financing
Structural balance in 2015	-0.1	-1.0	Breach of EU rules
Public consumption in per cent of GDP 2015	27.1	27.7	In line with 1982-1983
Change in structural employment, 1,000 persons			
Growth in structural employment 2007-15	0	-20	Lower employment
Annual growth 2008-2015, per cent			
Real growth in potential production (excluding cyclical effects)	1.6	1.3	Low economic growth
Growth in number of working hours (excluding cyclical effects)	0.0	-0.3	Lower labor supply: shorter hours, lower employment
Source: Ministry of Finance calculations.			

In the absence of reforms, the annual growth in potential production will be reduced from around 1½ per cent in the CP08 projection to 1¼ per cent, and this assumes higher growth in productivity than during the last 10-15 years. In the projection excluding reforms, employment and total labour supply in terms of the total number of hours worked can be expected to fall towards 2015 (net of cyclical effects).

CP08 should be seen in light of *Denmark's National Reform Programme, October 2008*. The Reform Programme presents the Danish government's strategy for structural reforms, while the Convergence Programme's primary focus is on the development in public finances etc. – including effects of structural reform on the sustainability of public finances.

1.5 Assumptions and requirements that may affect target compliance

The projections in CP08 extend over many years and are subject to uncertain assumptions, including about demography and employment, North Sea revenues, returns on financial assets and more.

In CP08, for example, the oil price assumption is \$55 per barrel in 2009-2010 and based on the International Energy Agency's 2007 projections the Brent price is expected to rise gradually to \$66 per barrel in 2015 (constant 2008-prices). Due to increasing demand and longer-term scarcity of oil, the crude price is assumed to reach \$74 per barrel in 2030, significantly over the current spot prices of \$40-50 per barrel.

Oil prices have been very volatile over the last years and have dropped considerably since the peak of \$145 per barrel in the summer of 2008. The International Energy

Agency (IEA) published a new projection in November 2008 in which the estimated real price for crude oil has, as mentioned, been adjusted upwards by 60-80 per cent compared to IEA's 2007 projection, *cf. appendix 2*.

Given the marked fall in oil prices since the summer of 2008 and the current spot prices of \$40-50 per barrel, for cautionary reasons the central CP08 projection is based on the IEA prognosis from 2007⁷.

By including the new projections from IEA2008 in the CP08 projections, the revenues from the North Sea would be increased significantly based on preliminary estimates. The sustainability indicator would amount to around 0.1 per cent of GDP, and the structural public balance in 2015 would improve to around 0.2 per cent of GDP, *cf. table 1.3*. The projection includes an impact of higher oil prices on energy efficiency which reduces revenues from taxes on energy consumption, *cf. appendix 2*.

	CP08	CP08 incl. IEA2008	CP08 incl. higher em- ployment
Per cent of GDP			
Fiscal policy sustainability indicator	-0.1	0.1	0.0
Structural balance in 2015	-0.1	0.2	0.0
Public consumption expenditures in per cent of GDP in 2015	27.1	27.1	27.1

Source: Ministry of Finance calculations.

Increased employment would also strengthen target achievement. An increase in structural employment of for example 5,000 persons more than assumed due to new initiatives or otherwise would strengthen fiscal policy sustainability and the balance in 2015 by around 0.1 per cent of GDP, *cf. table 1.3*.

1.6 New initiatives and updated assumptions compared to CP07

Compared to the CP07 projection, new information included in CP08 covers the updated cyclical outlook, labour market trends and public finance data as well as effects from new initiatives, including the Job Plan and the Energy Agreement from 2008. The effects of the adjusted assumptions are summarized in *table 1.4* and cover particularly the following:

- Updated projections for public finances and cyclical conditions based on the *Economic Survey, December 2008*. The structural balance in 2009-2010 is close to

⁷ In addition, it may be noted that the Norwegian Ministry of Finance's projections (from October 7) are generally in line with IEA's 2007 projections in the short as well as medium term.

the estimates in CP07. Public consumption is higher, while spending on e.g. voluntary early retirement pension is lower. Higher structural employment and revenues from indirect taxes and property taxes strengthen the structural balance.

- New estimates for oil prices, North Sea production and the US dollar exchange rate have led to new estimates for North Sea revenues, *cf. above*. Overall, the estimated permanent revenues from North Sea activities are in line with the CP07.
- Pension wealth is estimated to be about 20 per cent of GDP lower by end-2008 than in CP07, based on the assumptions in the December Economic Survey. From 2008, yields on pension wealth are assumed to be normal. The assumptions weaken sustainability and the 2015-balance by 0.1-0.2 per cent of GDP.
- *Job Agreement 2008 and Initiatives against sickness absence*. The Job Agreement and the initiatives against sickness absence implement some 2 billion DKR (0.1 per cent of GDP) of the structural reform requirements in CP07 (of 14 billion DKR or 0.8 per cent of GDP). The Job Agreement from February includes changes to supplementary unemployment benefits, tax relief for 64-year olds who remain in full-time employment, increased efforts for international recruitment and more. The initiatives in the Job Plan raise labour supply by some 8,000 persons in 2012 (full time equivalents) and close to 3,000 persons in the long run⁸. The Job Plan implements almost 1 billion DKR worth of required structural reforms. The initiatives against sickness absence are expected to raise labour supply equivalent to 4,000 persons and to reduce expenditures related to sickness absence.
- *Energy Agreement 2008 and Climate targets*. The Energy Agreement from February includes more ambitious targets in energy and climate policy. The target towards 2011 is a reduction in gross energy use by 2 per cent compared to 2006 and an increase in the share of renewable energy in gross energy consumption to 20 per cent. Towards 2020 gross energy consumption is to be reduced by 4 per cent compared to 2006. At the same time rough estimates are included for the fiscal costs associated with a 20 per cent reduction in CO₂ emissions in the non-ETS sector from 2005 to 2020, which is the target assumed to be agreed for Denmark with the other EU member states⁹. In total, the estimated effect on sustainability from the energy and climate strategies is in line with the estimates in CP07, which is around 0.3 per cent of GDP or 5 billion DKR (including the Energy Plan 2005).

⁸ Estimates for effects related to the increased international recruitment have not been included. International recruitment may contribute to stronger growth and prosperity but in principle does not improve fiscal sustainability, since immigration of workers and their families imply both higher public revenues and expenditures. The bulk of the positive contribution to fiscal sustainability from the Job Plan stems from the adjustments regarding supplementary unemployment benefits, especially since other initiatives for increasing the short term labour supply are associated with expenditures or lower revenues. The tax relief for 64-year olds that remain in employment is temporary.

⁹ The projections do not include possible effects from a commitment of reducing CO₂ emissions in industries not subject to the emission trading scheme by e.g. 30 per cent towards 2020, which could be an EU requirement for Denmark if an international agreement is reached on reducing CO₂ emissions, *cf. appendix 3*.

- Updated information on: a) the population's labour market attachment and working hours by age, gender and country of origin, including the employment rate among immigrants and descendants, b) updated assumptions regarding influx to voluntary early retirement pension etc., c) revenues from property taxes in light of the developments in property valuations, d) an updated population projection (DREAM 2008) implying higher birth rates, more children and increased numbers of users of public services.

Table 1.4
Sustainability indicator – overview of changes from CP07 to CP08

	Per cent of GDP
1. Convergence Programme 2007	0.0
- Excluding requirements for working hours and employment	-0.8
- New estimates for North Sea revenues	0.0
- Lower pension wealth (lower net present value of deferred taxes, net)	-0.15
- Job Agreement 2008 and initiatives against sickness absence	0.1
- Energy Agreement 2008 – extra expenditures compared to targets included in the CP07	0.0
- New population projections, DREAM 2008	-0.1
- New labour market data (RAS2006, working time data etc.)	0.1
- Other factors in Economic Survey, December 2008	0.05
- Requirements for unchanged working hours and 20,000 more employed in CP08	0.7
2. Convergence Programme 2008	-0.1

Source: ADAM and own estimates.

1.7 Overview – Convergence Programme 2008

Fiscal policy strategies and targets towards 2015 are set out for in *chapter 2*. The short term outlook for the Danish economy and assumptions towards 2015 are presented in *chapter 3*. The public finances towards 2015 are described in *chapter 4*, including the institutional framework and quality in public expenditures etc. The long term sustainability of public finances is treated in more detail in *chapter 5*.

Changes compared to last years' Convergence Programme and sensitivity analysis, including effects related to the external assumptions based on the EU Commission's autumn forecast and IEA's oil price projections from 2008, are treated in *appendix 1* and *2*. *Appendix 3* examines the estimated public finance impact of climate and energy policies.

2. Policy framework and objectives through 2015

2.1 Introduction

The *Convergence Programme for Denmark 2008* (CP2008) incorporates the broad policy objectives and priorities that have been decided politically for the period up to 2015.

The policy framework set out in the 2015-plan generally aims at maintaining high and stable employment, good framework conditions for growth and sustainable developments in public finances. The concrete planning of fiscal policy is based on the fiscal objectives set out in the 2015-plan. The 2015-plan is updated at least once a year in connection with the Convergence Programmes to the EU.

The basis for the assessment of fiscal sustainability – and hence the determination of the medium-term budgetary objectives (MTO) – is a long-term projection going beyond 2015. The projection incorporates demographic changes and other factors that may affect public finances over time. The long-term projection beyond 2015 is based on technical assumptions plus the effects of the 2006 Welfare Agreement. Furthermore the projection takes into account certain other agreed policies that extend beyond 2015, including the Quality Fund for public investments in 2009-18 and Energy and Climate objectives toward 2020 and beyond, *cf. chapter 5*.

2.2 Objectives for economic policy

The central objectives for individual policy areas are as follows:

- *Fiscal, tax and expenditure policies:* Focus on stability, sustainable public finances and structural surpluses towards 2015 in accordance with the 2015-plan. In the plan, tax policies include, notably, a continuation of the tax freeze and lowering of income taxes in 2008 and 2009. The work of the Tax Commission will provide the basis for negotiations on a tax reform in 2009. The tax freeze remains in force before and after the tax reform. In real terms, public consumption is assumed to grow by, on average, 1 percent per year from 2007 to 2015. As a guideline for public consumption spending in the 2015-plan, expenditures on public services can amount up to 26½ percent of (cyclically-adjusted) GDP in 2015 – compared to around 26¼ percent of cyclically-adjusted GDP in 2007. The projection includes a “*Quality fund*” of 50 billion DKK for public investments in hospitals, schools, day care facilities etc. over the next decade. The 50 billion DKK constitute an increase in public investment measured in real terms, accumulated over 10 years, relative to a baseline level founded on the investment level in 2008.
- *Structural and labour market policies:* The 2015-plan from 2007 (and CP07) includes new structural policy requirements concerning employment and working hours

to ensure fiscal sustainability as well as structural surpluses through 2015 (given the planned tax and expenditure policies). The requirements were for new initiatives to strengthen non-subsidized employment by 20,000 persons ($\frac{3}{4}$ per cent) by 2015 and avert a decline in average working hour – even though demographic and other factors may weigh on average hours worked per employee. In CP08 the reform requirements are essentially the same but the Jobplan from February 2008 and measures to reduce sickness absence are taken into account. These measures mainly imply that the remaining challenge to maintain unchanged working hours is reduced (since the initiatives primarily imply higher working hours in the longer term). Consequently, CP08 shows that fiscal policy (with unchanged structural requirements) is about sustainable (-0.1 percent of GDP). Furthermore, a key condition is that earlier reforms yield the employment gains that have been incorporated. This applies, in particular, to the initiatives in the 2006 Welfare Agreement (including later retirement), *cf.* CP06. In addition, the initiatives in the Welfare Agreement concerning education, research and innovation support long-term potential growth. Productivity growth should also be strengthened by increased competition and lower administrative burdens.

- *Monetary and exchange rate policy:* Continued stable exchange rate and inflation developments via the fixed exchange rate against the euro. Importantly, responsible policies should contribute to a narrowing of the interest differential between Denmark and the euro area which has widened to 1.75 percentage points in light of the financial turmoil and consistent with safeguarding the fixed exchange rate.

Denmark fulfils the convergence criteria with respect to exchange rate stability, inflation, interest rates and public finances, *cf.* table 2.1.

Table 2.1**Convergence criteria, 2007**

	Consumer price inflation (HICP) ¹⁾	Government bond yields (10 year) ¹⁾	General government budget balance (EDP-form) ²⁾³⁾	General government debt (EMU-debt) ²⁾³⁾
	Per cent	Per cent	Per cent of GDP	
Denmark	3.4	4.4	4.9	26.2
EU27	3.7	4.6	-0.9	58.7
Euro area	3.4	4.4	-0.6	66.3
Convergence criteria	4.2	6.3	-3.0	60.0

Note: As part of the convergence criteria, a member country shall have participated in the ERM II for at least two years without serious tensions or devaluations. Denmark fulfils this criterion.

1) Data up until September 2008. The inflation rate is calculated as the percentage change in the latest available 12-month average HICP-index relative to the average HICP-index in the preceding 12 months. The interest rate is calculated as the average yield during the last 12 months.

2) Data for 2007.

3) The criterion regarding sound public finances is formally based on whether a member country is subject to a Council decision regarding an excessive deficit according to the Treaty's article 104(6).

Source: Eurostat and EU Commission autumn forecast, 2008 and own calculations.

The general government surplus equalled 4.9 per cent of GDP in 2007 according to the October reporting under the Excessive Deficit Procedure (EDP). The EDP-reporting in October was based on “*Economic Survey, august 2008*”, where the public surplus based on national accounts principles equalled 4.8 per cent of GDP in 2007. Hence, the difference between these two specifications of the fiscal balance is marginal.¹ The large public surplus in 2007 should be seen in the light of favourable cyclical conditions and large revenues from corporate taxes as well as oil and gas activities in the North Sea².

Since October, Statistics Denmark has released revised data for public finances on national account principles. In the new data, the 2007 public surplus has been revised down from 81 billion DKK (4.8 per cent of GDP) to 75 billion DKK (4.4 per cent of GDP). The revision primarily reflects lower revenue from personal and pension yield taxation. The revised data for public finances are incorporated in “*Economic Survey, December 2008*” and thus underlie the projections in CP08. The lower revenue from pension yield tax in 2007 does not affect the structural budget balance.

2.3 Fiscal policy

Fiscal policy is guided by two basic objectives in the 2015-plan:

- *Fiscal sustainability*. Implies that the planned policies towards 2015 as concerns public expenditure, taxation and structural initiatives can be sustained thereafter without fiscal adjustment becoming necessary to ensure a stable net debt-to-GDP ratio in the longer term, given the assumptions underlying the projections. In CP08 fiscal policy is broadly sustainable under the assumption that structural reforms are undertaken to increase employment by 20,000 persons and to counter the tendency of decreasing working hours.
- *Structural budget surpluses or balance in every year towards 2015*. The requirement of fiscal surpluses, or at least balance, is an objective in its own right alongside (and in accordance with) the requirement of fiscal sustainability. In part, the objective should be seen in light of the Stability and Growth Pact requirements concerning the medium-term balance for Denmark. The objective to ensure structural budget surpluses or balance towards 2015 is – like the fiscal sustainability requirement – broadly fulfilled in CP08, under the mentioned structural policy assumption.

¹ The treatment of swap interest rates and infrastructure investment pulls in the direction of a marginally higher public surplus based on EDP principles in 2007 (by about 0.0-0.1 per cent of GDP) while, on the other hand, the treatment of UMTS pulls slightly in the opposite direction (by 0.0 per cent of GDP).

² The structural budget balance, which corrects for cyclical effects and other temporary factors and should be seen as an expression of the underlying state of public finances, is estimated at 2.4 per cent of GDP in 2007.

Medium-term objective for public finances

The 2015-plan lays down the medium-term objectives for the structural budget balance. The MTO is set so as to encompass the projected path for the fiscal balance which, given the methods and assumptions adopted in the long-term projection, implies a sustainable policy. In the years towards 2010, structural surpluses are required to be in the range of $\frac{3}{4}$ to $1\frac{3}{4}$ per cent of GDP³. The operational target is specified as a range due to the uncertainties associated with the long-term projection and the structural balance.

Between 2011 and 2015, the medium-term objective calls for structural surpluses or at least balance.

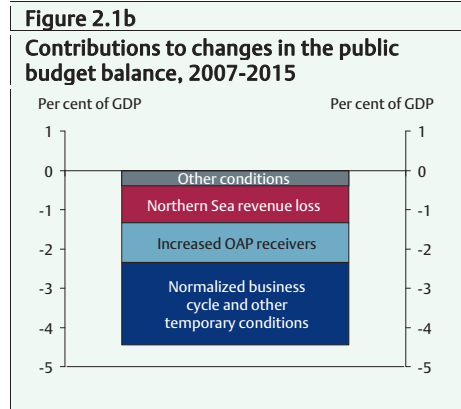
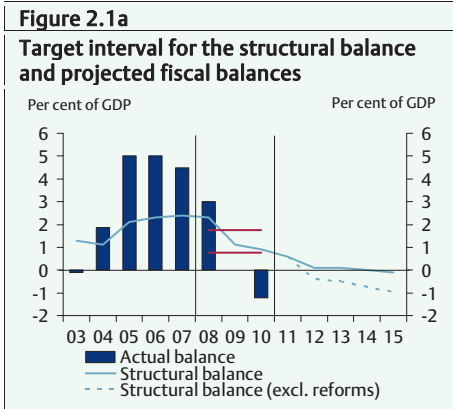
Complying with the medium-term objective for the structural balance is the primary operational target for fiscal policy. If the structural surplus is visibly below the lower bound of the target range, this would signal a need to adjust fiscal policy or economic policies more broadly.

In 2008, the actual surplus is higher than the estimated structural surplus, *cf. figure 2.1a*. The difference between the structural and actual surplus reflects transitory contributions to public finances. This is mainly a result of business cycle conditions with low unemployment and high employment in 2008, *cf. chapter 4*.

In 2009 and 2010, however, the balance is expected to be lower than the structural surplus. One reason is that revenues from company taxation and the tax on accrued pension returns are expected to be below structural. In 2010, the expected output gap is negative, and cyclical factors thus pull down the balance. Moreover, the balance is affected by a capital transfer of more than 15 billion DKR owing to a one-off compensation of pension savers related to an administrative change in tax subjects from institutes to individuals following an EU court ruling⁴. The change is designed so that its long-term impact on public finances is considered to be neutral.

³ The operational targets for the structural balance are specified given continued suspension of SP contributions. A reintroduction of the SP at 1 per cent would change the operational target to structural public surpluses of between $\frac{1}{2}$ - $1\frac{1}{2}$ percent of GDP. A reintroduction of SP contributions would in the short- and medium-term weaken public finances by app. $\frac{1}{4}$ per cent of GDP, as the SP contributions are deductible in income taxation. On the other hand, public finances are strengthened in the long-term, as larger pension wealth is accumulated and taxed when paid out. Hence the SP scheme is roughly neutral with respect to fiscal sustainability.

⁴ The change in the pension yield tax scheme adopted in December 2007 in view of EU-legislation is estimated to imply public transfers to households by a good 15 billion DKR in 2010, while increasing revenues from the pension yield tax by some 8 bill. Dkr. The compensation reflects a bringing-forward of negative taxes after the recent drop in equity prices and is off-set by higher pension yield tax payments in subsequent years. The magnitude of the compensation is uncertain. The fiscal balance is thus reduced by about 7 bill. Dkr. in 2010 as a consequence of the changes. The structural balance is not affected by this one-off. In addition, the rules changes imply a one-off compensation of 10 bill. Dkr. in 2008 to compensate for pension institutes' investments in index-linked bonds and residential property becoming subject to the pension yield taxation. This amount is not included the structural balance either.



Note: In figure 2.1b, the contribution to changes in the public budget balance between 2007 to 2015 from increased numbers of old-age pensioners is shown net of income taxes of public pensions.

Source: Economic Survey, december 2008 and the 2015-plan.

From 2008 to 2012 it is assumed that the business cycle will gradually normalize (ie. the present positive output gap vanishes) and that other transitory contributions to the actual balance gradually wane. As of 2012, the structural and actual balances coincide, as cyclical conditions and transitory factors are assumed neutral.

Half of the reduction in the actual surplus from 2007 to 2015 reflects the assumed normalization of the business cycle and other temporary factors by 2012. In addition, the reduction in the projected surplus reflects declining North Sea production and growing expenditures for public old-age pension as the number of pensioners increases, cf. figure 2.1b. The decreasing structural budget balance and the lower MTO threshold towards 2015 thus to a large extent reflects that the estimated structural level of the North Sea revenues declines from around 1½ per cent of GDP in 2007 to around ¾ per cent of GDP in 2015. Developments in revenues and expenditures towards 2015 are outlined in chapter 4.

In the absence of the required increase in labour supply through new reforms, the structural balance would be reduced to -1 per cent of GDP by 2015, cf. figure 2.1a.

The operational target for structural surpluses of between ¾ and 1¾ per cent of GDP towards 2010 and at least balance towards 2015 is in accordance with the EU Stability and Growth Pact. In general, the Stability and Growth Pact requires medium-term objectives between -1 per cent of GDP and “balance or surplus,” and furthermore requires a safety margin, so that countries do not exceed the 3 per cent of GDP limit for budget deficits in case of “normal” cyclical downturns.

The requirement of a safety margin currently implies that Denmark (as a minimum) should target a medium-term budget position in balance or a deficit of, at most, ½ per cent of GDP. To ensure that automatic stabilizers can play fully and hence con-

tribute to dampen cyclical fluctuations in activity, it is necessary to plan for a considerable margin with respect to the 3 per cent limit, as public finances in Denmark are particularly sensitive to cyclical fluctuations.

The targets for the structural budget balance fulfil the EU minimum requirements with some margin and should be seen in light of the fiscal sustainability objective. The strategy requires prudence in fiscal policy and adequate public surpluses in good times with low unemployment. Over time, this is a precondition for having the necessary room for manoeuvre to assist the economy in case of severe downturns with clear imbalances. Economic policies shall support the fixed exchange rate policy with a focus on stability and continued low inflation.

2.4 Tax policy

Based on the estimated effects of the tax freeze and the reduction in labour income taxation in 2004, the total tax burden has been reduced by around 30 billion DKK from 2001 to 2007 (approx. 2 per cent of GDP)⁵.

The tax agreement from autumn 2007 implies that the income tax is reduced by another 9½ billion DKK in 2008 and 2009. The tax agreement as a whole is estimated to increase the labour supply by some 8,000 full-time equivalents, primarily through increased working hours for groups with a lower marginal tax, *cf. CP07*.

The in-work tax allowance is raised from 2½ to 4 percent of earned income from 2008 and the maximum allowance is raised to 13,100 DKK. In 2009 the in-work tax allowance is raised further to 4¼ percent and the maximum allowance is raised correspondingly. In addition, the income threshold for the 6 percent middle-bracket tax is raised by 60,000 DKK to 365,000 DKK (before labour market contributions). This implies that around 575,000 persons avoid paying the middle-bracket tax. For this group of wage earners the tax effectively paid on the last earned krone is reduced by around 5½ percentage points. The average marginal tax is reduced by 1¼ percentage points.

As a part of the tax agreement, energy excise duties are price-indexed using the medium-term inflation rate of 1.8 per cent, so that energy duties are not eroded in real terms from 2008 onwards. In accordance with the tax freeze, the revenue from indexation is used for lowering income taxes. Indexation of energy duties supports the objectives in the energy and climate strategies. According to the tax agreement, moreover, the automatic regulation of the labour market contribution was abolished, in part to prevent pro-cyclical changes in the contribution rate. The contribution rate is therefore fixed at 8 percent. The tax agreement further implies that in 2009 changes to the income threshold(s) for the middle and top-tax brackets will be de-

⁵ The reduction in taxation by app. 30 billion DKR does not include the effects of altered taxation of the activities in the North Sea related to the prolongation of DUC concessions, which since 2004 has led to higher revenues from oil and gas production in the North Sea.

cided for 2010, with a view to prevent an increase in the number of persons paying top-bracket tax compared to 2007.

In 2008 municipalities raised the local government tax by around 2 billion DKK more than agreed. According to the tax freeze the higher local government tax will be neutralized by lower central government taxes. The central government bottom-bracket tax is thus lowered from 2009. The effect of increased local government taxation in 2008 and 2009 is neutralized altogether in 2009 and the central government taxation is thus lowered by 4 billion DKK in 2009.

The tax agreement from autumn 2007 and the neutralizing central government tax reduction contribute to an increase in total disposable incomes of around 11½ billion DKK in 2009, compared to 2007-rules – of which 2¼ billion DKK in 2008 and 9¼ billion DKK in 2009, *cf. table 2.2.*

Table 2.2**Impact of income tax reductions on household disposable income, 2008-10
Annual changes**

	2008	2009	2010
Bill. DKK (2009-level)			
In-work tax allowance	3.5	0.6	-
Personal income tax allowance	0.8	0.8	-
Middle tax allowance	-	3.9	-
Top and middle tax brackets ¹	-	-	0.9
Tax increase in municipalities ²	-2.0	-0.1	-
Neutralising central government reduction of the bottom-bracket tax ³	-	4.0	-2.0
Total tax reduction	2.3	9.2	-1.1

- 1) According to the tax agreement from 2007 the number of top-bracket tax payers are not allowed to increase from the 2007-level. In 2009 it will be decided to change the middle and top tax brackets in 2010, if the number of top-bracket tax payers increase from 2007 to 2008.
- 2) According to the Fiscal Bill the increased taxation in municipalities from 2008 to 2009 corresponding to 0.1 bill. DKK will be neutralized by a central government tax reduction, which will be included in the tax reform following the work of the Tax Commission.
- 3) Excl. The effect from the tax ceiling.

Source: Calculations based on a sample of 3.3 per cent of the population.

Since November 2001, the tax freeze has been the cornerstone of tax policies. The tax freeze is incorporated to 2015, which is the current planning horizon. The tax freeze implies that no tax or excise duty can be increased, whether it is fixed in per cent or as a nominal amount. Furthermore, a nominal ceiling is imposed on the property value taxation. Due to the nominal principle applied for excise duties (excluding energy duties) and property value taxation, the tax freeze in itself contributes to a gradual reduction in the tax burden in a standard situation with inflation of close to 2 per cent and increasing property values. Following the 2007 tax agreement energy duties are as mentioned indexed by 1.8 per cent per year.

The government platform of November 2007 sets out the government's intention to reform the Danish tax system. The aim is a notable reduction in labour income taxation, including lower marginal tax rates. The tax reform shall also support the government's ambitions in the energy and climate areas. The reform should be balanced with respect to income distribution, in agreement with the framework of the 2015-plan and robust with respect to developments in a more integrated world economy. The property value tax is not to be changed.

The government has set up a Tax Commission consisting of independent experts to work out models for tax reforms that comply with the criteria mentioned. The Commission shall present its proposals by early 2009.

The tax freeze is upheld unchanged before and after the tax reform.

2.5 Expenditure policy

The key guidelines for public spending in the 2015-projection are:

- Real growth in public consumption of 1.2 per cent in 2009, 1 per cent per year during 2010-2012 (where 2012 is the final year covered by the agreement on the globalization-related initiatives) and $\frac{3}{4}$ per cent per year during 2013-2015. Spending under these limits include initiatives in the quality reform, including the agreement between public employees and employers, and the globalisation effort (research and development, entrepreneurship and education). Furthermore, the limits contain scope for new priorities. In the annual budgets and agreements with municipalities and regions, annual real growth in public consumption remains the key spending limit.
- The scope for reallocating resources within the expenditure limits is particularly good in these years following, notably, the reform of municipalities. In June 2008 the government presented a plan for municipalities and regions to free up resources in order to improve service provision. The plan shall be implemented in collaboration with municipalities and regions and the government objective is to free up resources corresponding to 1 billion DKK in 2009 increasing to 5 billion DKK in 2015. The freed-up resources should remain in municipalities and regions to strengthen their ability to offer good services to citizens.
- Public consumption spending can grow in line with or slightly more than the economy at large. As a guideline, public consumption spending may equal 26½ per cent of GDP (cyclically adjusted) in 2015 – compared to 26¼ per cent of cyclically adjusted GDP in 2007. In CP08 public consumption expenditure

amounts to around 27 percent of GDP in 2015, i.e. around ½ percent of GDP above the guideline in the 2015-plan, *cf. chapter 1*.⁶

- A Quality Fund of 50 billion DKK for public investments in health care, public schools and day care etc. over the next 10 years. These 50 billion DKK constitutes an increase in public investments in real terms compared to the baseline level, accumulated over 10 years. The public investment-to-GDP ratio in CP08 is thus around 0.1 per cent of GDP higher during 2009-18 than in 1993-2008.

Real public consumption is assumed to grow by 1 per cent per year on average in 2008-15. The growth in real public consumption in 2008-15 is in line with the assumptions in CP07.

To prevent excess spending in municipalities, proposals have been adopted to ensure that local government budgets are in line with the tax freeze and the agreements with the government. The proposals imply that the central government block grant to municipalities is reduced, if the municipalities in the aggregate exceed the service- and investment budget in 2008. In addition, from 2009 onwards a part of the block grant to municipalities depends on whether or not local government budgets are in line with the agreements. Also, in the future local government block grants will be adjusted individually and collectively if aggregate taxation in the municipalities exceeds the agreements⁷.

In addition to resource growth, ongoing improvements in efficiency and productivity within the public sector can contribute to improve public services. In recent years, several reforms have been carried out with a view to create a more efficient public sector focused on delivering good services. Among other things, this includes the reform of the structure of municipalities and the allocation of tasks between different administrative levels, which has been in force since January 1, 2007. The reform of municipalities currently provides good opportunities for freeing up resources for services directly aimed at citizens through reprioritisation. The outlines of the government's plan to free up resources for service are described in box 2.1. To support this process, the government and Local Government Denmark have agreed that the government (together with Local Government Denmark) will make concrete suggestions for central government measures to free up resources in municipalities corresponding to ½ billion DKK in 2010 increasing to 2½ billion DKK in 2013.

⁶ Of this difference, Statistics Denmark's downward revision of nominal GDP data for 2005-07 explains 0.3 percentage points. A statistical downward revision of historical GDP values raises revenues and expenditures relative to GDP in a parallel fashion, and thus affects neither sustainability nor the structural budget balance.

⁷ The municipalities have adopted budgets for 2009 showing a total increase in municipality taxes of 89 million DKK (0.005 per cent of GDP). The government has decided to accept the tax increases, and thus the block grant to municipalities will not be reduced. According to the tax freeze, the tax increases in municipalities will be neutralized by a central government tax reduction, *cf. note 2 in table 2.2*. The central government tax reduction will form part of the political discussions on a tax reform following the work of the Tax Commission. Preliminary estimates of local government budgets for 2009 show that service and investment expenditure in total are in line with the agreements.

Furthermore, a strategy has been put forward to ensure high quality in public services, cf. the Quality Reform (*“Better Welfare and More Attractive Jobs”*).²⁸ The quality reform shall help ensure that the new municipality structure results in better public services. As part of the reform, the 2015-plan includes means to establish a *Quality fund for public investments* of 50 billion DKK. This allocates resources to invest in hospitals, schools, day care facilities etc. over the next 10 years. The investments in modern hospitals and labour saving technology should also facilitate improved work organization and better staff use.

Box 2.1

Plan to free up resources for services

On June 2nd the government launched a plan to free up resources to services directly aimed at citizens in municipalities and regions – and as a follow-up the government and the municipalities have agreed the aim of freeing up resources corresponding to 1 billion DKK in 2009 increasing to 5 billion DKK in 2013. It has been agreed with regions to free up resources corresponding to 250 million DKK in 2009. The freed-up resources remain in municipalities and regions to strengthen the ability to offer good services, without employees running faster. Four initiatives to free up resources are described below.

1. Lower administrative costs

E.g. by the use of new technology for digital solutions, by simplifying administrative rules and by centralizing certain administrative tasks in areas with economies of scale.

2. Lower expenditure for purchases and energy

In four major areas of purchasing the central government has reached an average cost reduction of about 40 per cent through more effective and coordinated purchasing. In municipalities and regions, which account for 2/3 of public purchases, there are also potential savings. In addition, a careful study has testified that energy consumption differs considerably between municipalities today implying a potential to reduce energy consumption.

3. Reduced sickness absence

The government objective is to reduce sickness absence by 20 per cent towards 2015. As a means to fulfil this objective, the government has agreed with the labour market organizations and a Parliamentary majority to increase efforts to reduce sickness absence, and 39 new initiatives with an initial cost of 170 million DKK have been launched. The agreement should increase labour supply by the equivalent of 4,000 persons.

4. New technology and better work organization

More flexible job management, flexible job demarcations for instance in the areas of health and elderly care, optimized organization of work processes and the use of labour saving technologies – for example digital equipment in the elderly care sector – can contribute to free up resources. The agreement on the 2008 Fiscal Bill includes a total of 3 billion DKK allocated to labour saving technology and new forms of work and organization in 2009-2013. In 2009 alone 200 million DKK have been earmarked, for instance for a project to implement a digital Common Medicine card, from which patients' prescriptions and medicine purchases will be directly retrievable.

2.6 Structural and labour market policy

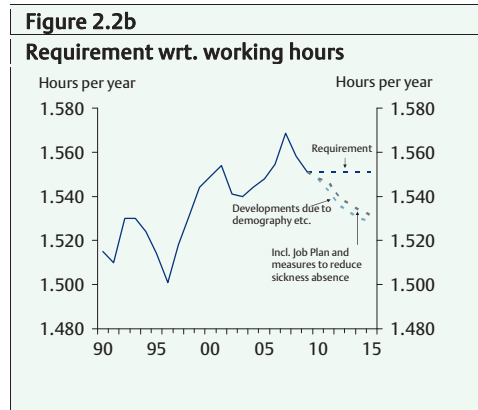
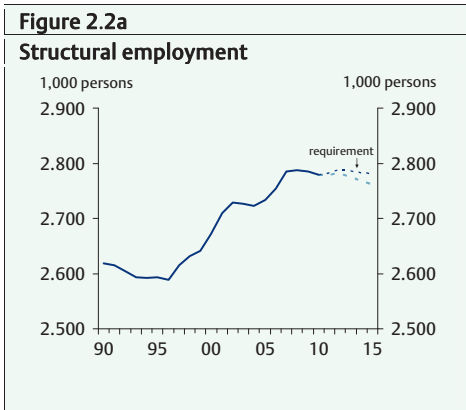
In the 2015-plan from August 2007 (and in CP07) central structural policy requirements for employment and working hours were set out in order to ensure fiscal sustainability and fiscal balance in 2015. In the 2015-plan, the key requirements were:

²⁸ Only available in Danish.

- New initiatives to increase non-subsidized employment by 20,000 persons towards 2015, equal to an employment increase of $\frac{3}{4}$ per cent, cf. figure 2.2a.
- Average working hours should not decline despite demographic and other factors tending in that direction. Hence, average hours shall remain at a relatively high level by Danish standards even though an increasing share of young and elderly in the labour force will tend to pull down average working hours.
- Previously-decided labour market reforms etc. should have the intended impact.
- The age limits for early retirement and pension are lifted as of 2019 and indexed to remaining lifetime of 60 year olds as of 2025, cf. *The 2006 Welfare Agreement*.

Since CP07 the government has reached agreements on a Job Plan and measures to reduce sickness absence, cf. below. The two reforms contribute to an increase in the labour force, primarily through an increase in (average) working hours of about $\frac{1}{4}$ percent.

As a result of these measures, the remaining reform requirement to ensure non-declining average working hours has thus been lowered in CP08. The labour supply requirement in CP08 is thus given by the former requirement *corrected* for new structural reforms (Job Plan and measures to reduce sickness absence), cf. figure 2.2b.



Source: Own calculations.

The requirement to ensure non-declining hours from 2009 to 2015 in CP08 imply that average hours must be raised by about $1\frac{1}{2}$ per cent relative to baseline in 2015. In the baseline, the changing age composition in the labour force and changes between ordinary and subsidized employment as well as other factors reduce projected average working hours over the period. In CP07 the corresponding requirement was for an increase in working hours of 1.8 per cent relative to baseline. The difference reflects the Job Plan and the measures to reduce sickness absence.

The principal aim of the **Job Plan** from February 2008 was to increase labour supply in the short term. One of the elements in the plan is changed rules for supplementary unemployment benefits, contributing to a permanent increase in labour supply through higher average working hours. The Job Plan also improves the possibilities for old age pensioners and students to work (without pensions or study grants being reduced), introduces a temporary tax rebate for 64-year olds who remain in full-time employment as of age 60, and allows receivers of disability pension, who were granted the pension under former rules before 2003, to return to the labour market without losing the right to return to disability pension at a later stage. At the same time, steps have been taken to increase international recruitment of high-skilled labour. The Job Plan helps to meet approximately 0.05 percentage points of the total structural policy requirements of 0.8 per cent of GDP in CP07.

In connection with the Fiscal Bill for 2009 the government entered an agreement on **a plan to reduce sickness absence**, involving 39 concrete initiatives. The initiatives are estimated to increase labour supply equivalent to some 4,000 persons. The plan includes intensified focus on preventing sickness absence and an early effort aimed at those who are ill. On the assumption that the plan has the estimated effects on sickness absence and employment, the initiatives are estimated to improve fiscal sustainability by approximately 0.05 per cent of GDP.

Overall, since the presentation of the 2015-plan, reforms have been implemented that contribute about 0.1 per cent of GDP of the initial requirement. The remaining requirement for structural policy initiatives corresponds to an improvement in fiscal sustainability of 0.7 per cent of GDP or around 12 billion DKK. This requirement is included in the projection in CP08.

Following the presentation of the 2015-plan, a **Labour Market Commission** consisting of independent experts was given the task of putting forward proposals to fulfil the reform requirements. The Labour Market Commission presented an intermediate report in October 2008, containing proposals to increase labour supply in the shorter run. The Labour Market Commission is expected to present its final recommendations in the summer 2009. In addition, a **Tax Commission** has been set up to prepare models for a tax reform, including a reduction of labour income taxes.

In order to fulfil the requirements, the key is that the reform steps that are taken shall strengthen public finances permanently by 0.7 per cent of GDP (and by 0.8 per cent of GDP for precise sustainability). The key is the total impact on public finances and not how the effects are distributed between higher employment or working hours. If the reforms are associated with direct budgetary costs, the requirement to raise labour supply is correspondingly higher (and vice versa if expenditures generally increase less than expected).

The structural policy requirements can alternatively be translated into e.g. a requirement of 45,000 persons more in employment (with average wage and working hours

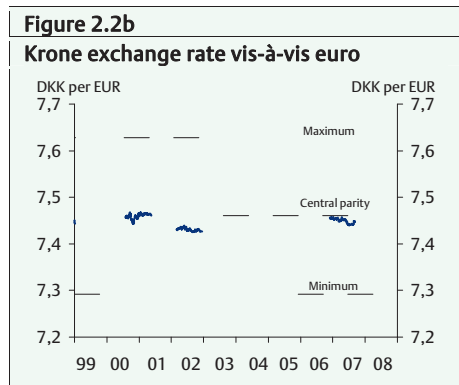
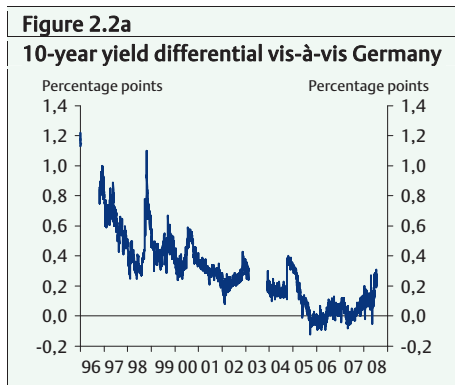
and on the assumption that they would otherwise receive e.g. unemployment benefits), or a requirement that average working hours are increased by around 2¼ per cent compared to the previously-mentioned baseline. The still-high requirements for new labour market reforms by 2015 must be seen in connection with the already quite large contributions to employment from earlier labour market reforms etc., which are included in the projection, cf. *Chapter 3*.

Efforts in the area of structural and labour market policies are outlined in more detail in “*Denmark’s National Reform Programme, October 2008*”

2.7 Monetary and exchange rate policy

Monetary policy is aimed at maintaining a stable exchange rate of the Danish krone against the euro. The framework for the stable exchange rate policy is the ERM II-agreement, which stipulates a narrow fluctuation band against the euro of $\pm 2\frac{1}{4}$ per cent around the central parity.

The Danish Nationalbank’s lending rate tends to follow ECB’s minimum bid rate with a premium which ensures that the exchange rate is stable. Normally, the interest differential is positive which should be seen in conjunction with Denmark not having adopted the euro.



Source: Danmark’s Nationalbanken.

In October, the Danish Nationalbank raised its key policy rate to prevent currency outflow while the minimum bid rate in the euro area was lowered during the same timeframe. The interest differential between Denmark and the euro area thus widened to 1.75 percentage points, which is the highest level since the introduction of the euro. Periods of financial turmoil often entail pressure on small currencies, and the foreign exchange pressure should be seen in this light. When the ECB lowered the minimum bid rate to 3.25 per cent on November 6th and 2.5 per cent on December 10th, the conditions were stabilized sufficiently for the Danish Nationalbank to

be able to lower the Danish leading rate to 5 per cent and 4½ per cent respectively. The interest differential remained high at 1.75 percentage points.

The exchange rate has remained close to the central parity against the euro since 1999, *cf. figure 2.1b*. Since the introduction of the euro in January 1999 the largest (absolute) difference from the central parity has been around ½ per cent.

A wide majority in the Danish parliament supports the fixed exchange rate policy, and the government regards the commitment and the credibility of the fixed exchange rate policy as paramount.

Periods of financial distress raises the need for economic policy discipline in small economies like Denmark, who pursue a fixed exchange rate regime outside the euro area. A cautious fiscal policy contributes to bring the inflation level in line with the euro area, thereby supporting the fixed exchange rate policy and providing the basis for a lowering of the interest rate spread vis-à-vis the euro area.

3. Short-term outlook and prospects to 2015

3.1 International economy and financial variables¹

The prospects for the international economy have weakened markedly in the wake of the financial turmoil in September and October when interbank markets froze up and the decline in equity prices was strongly reinforced. The wide-ranging financial sector rescue plans now being implemented in many countries and significant cuts in monetary policy rates, including in the euro area and the US, have stabilized markets to some extent but the uncertainty surrounding the economic outlook remains large.

Hence, after a number of years of strong global growth, a pronounced slowdown is assumed for 2009 with activity coming to a stand-still in the euro area and contracting in the US. Moreover, a relative moderate growth recovery is expected thereafter, in part because downturns are often more protracted when accompanied by strains in the financial sector and weakening housing markets. On the other hand, oil prices and other raw material prices have decreased sharply, and monetary policy has been eased forcefully in many countries. If the weakness is confirmed as developments unfold, additional rate cuts are likely in some cases in 2009.

GDP growth for Denmark's export markets is assumed to be zero in 2009 followed by growth of around 1 per cent in 2010. From 2011-15 real GDP among Denmark's trading partners is assumed to expand broadly in line with potential. Based on Danish export market weights, the trend growth rate among trading partners is estimated to be around 2 per cent per year, *cf. table 3.1*.

Table 3.1

Assumptions about the international economy

	2007	2008	2009	2010	2011	2012	2013-15
Annual growth, per cent							
Real GDP, trading partners ¹⁾	2.9	1.3	0.0	1.2	2.1	2.1	2.0
Export market growth, manufactures ¹⁾	7.7	3.7	-0.3	3.1	4.2	4.2	4.1

1) Trade-weighted.

Source: European Commission Autumn forecasts 2008, OECD and own calculations.

World trade has outpaced GDP growth in recent decades, mainly reflecting deepening international division of labour. Hence, the projection assumes (apart from 2009) export market growth for industrial products to exceed foreign GDP growth. Similarly, deepening international division of labour engenders a continued increase in

¹ The projections underlying Convergence Programme 2008 are based on the short-term outlook presented in *Economic Survey December 2008*. The assumptions on the international economy are based on the European Commission's autumn forecasts and thus the common external assumptions that member countries (in particular euro and ERMII-countries) are invited to adopt in their Stability and Convergence Programmes. Appendix 2 contains sensitivity analyses with respect to, among other things, alternative assumptions about interest rates and GDP growth abroad.

Danish import propensities and hence real growth in imports that exceeds overall demand growth.

The crude oil price (Brent) has dropped markedly from a peak of more than 145 \$ per barrel in the summer of 2008 to currently 40-50 \$ per barrel. More broadly, oil prices have been very volatile in the last few years, and the assumed oil price of 55 \$ in 2009-10 is still relatively high in a slightly longer historical perspective. Based on the oil price projections of the International Energy Agency (IEA), the real oil price is assumed to increase to 66 \$ per barrel in 2015 (measured in 2008-level deflated by Danish prices), *cf. table 3.2*. In the longer run, scarcity of oil resources and growing demand are assumed to lead to a further increase in oil prices. Based on IEA's projection, the real oil price is assumed to be around 74 \$ per barrel in 2030².

Table 3.2
Assumptions about oil prices and interest rates

	2007	2008	2009	2010	2011	2012	2015
Crude oil price, Brent (\$ per barrel, 2008-prices)	75	98	54	53	55	58	66
Denmark, 10-year government bond yield	4.3	4.4	4.2	4.4	4.7	4.9	5.7

Source: European Commission fall forecasts 2008, IEA projections 2007 and own calculations.

The prospect of weak international growth, declining capacity utilization and easing inflation in the wake of the financial crisis has led to lower policy interest rates. In the US, the key rate has been cut from 5¼ percent in September 2007 to 1 percent by late October 2008. The ECB has lowered its interest rate from 4¼ per cent in mid-October 2008 to 2½ per cent in early December. However, as a consequence of the financial turmoil, money market rates have not followed policy rates down to the usual extent and the same applies for e.g. mortgage credit rates in large economies.

The high spreads between policy rates and market interest rates are assumed to decrease in line with a gradual return to more normal market conditions in view of the financial sector rescue plans and wide-ranging bank guarantees. Banks' improved access to low-cost liquidity at the central banks will also help to recapitalize the financial system.

During the financial turmoil, pressures arose on Danish policy interest rates vis-à-vis the euro area. In light of ongoing intervention in foreign exchange markets, Denmark's Nationalbank increased its key interest rate to 5.5 per cent in October. The monetary policy spread vis-à-vis the euro area rose to 1.75 per cent, the highest since the euro was introduced. When the ECB lowered rates in November and December, conditions had stabilized sufficiently for the Nationalbank to lower its key rate to first 5 per cent and then 4¼ per cent, but the spread remained high at 1.75 per cent.

² In November 2008, the International Energy Agency (IEA) published new projections showing a higher long term oil price, *cf. World Energy Outlook 2008, November 2008*. In the new projection the crude oil price reaches 108\$ per barrel in 2015 and 135\$ per barrel in 2030 (2008-price levels), see also *chapter 1* and *appendix 2*.

Periods of financial turmoil are often associated with currency outflows from small countries that are not part of a common currency area. Foreign investors appear to have reduced their holdings of e.g. Danish mortgage bonds, which account for the bulk of the Danish bond market, as investors have sought shelter in government bonds, especially those denominated in large currencies.

Since early 1999, the spread between Danish and German 10-year government bond yields has averaged just below 0.25 percentage points. In recent years, low interest rates abroad and fiscal surpluses in Denmark have contributed to a low – and at times negative – yield spread, but the spread has widened with the credit crisis. In CP08, Danish 10-year government bond yields are assumed to increase from around 4.3 per cent in 2007 to 4.4 per cent in 2010³.

3.2 Short-term outlook for the Danish economy

The Danish economy has been slowing for some time with production growth quite subdued since late 2006. The background has been one of continued demand growth and rising imports up to the turn of the year 2007/2008 coinciding with pronounced scarcity of labour, and consequently employment remains very high. Since early 2008 private domestic demand growth has moderated, in part owing to rising inflation and very weak household and business expectations. In the last few months, the moderation has been reinforced by the financial turmoil and weakening global growth prospects.

CP07 was based on an assumption of moderate GDP growth of 1¼ per cent in 2008 and about ¾ per cent annual growth in 2009-10, as well as a turning point in the labour market with a decline in employment of close to 60,000 persons or 2 per cent from 2008 to 2011. Consequently, unemployment was assumed to go up from 2½ per cent in 2008 to 3½ per cent in 2011 (applying the new definition of unemployment⁴). Hence, it was technically assumed that the cycle would be normalized during 2009-11 and hence that employment, unemployment and the labour force would return to their estimated structural levels by 2011.

Given the financial turmoil and significant downward adjustments of the international growth prospects over the last months, it now appears that the weakening of the cyclical position and GDP growth will be more pronounced during 2008 and 2009 than assumed last year. In the economic survey from December, on which CP08 is founded, GDP growth amounts to 0.2 per cent in 2008 and -0.2 per cent in

³ In the longer term (beyond 2015) average bond yields – the interest rate that is used for discounting future revenue and expenditures in the calculation of fiscal sustainability – are assumed to be at around 5¾ per cent.

⁴ As of January 2008 Statistics Denmark has changed the definition of unemployment. The two major changes are that unemployed social assistance recipients and vacation allowance recipients are excluded from the statistic. The effects of the new method compared to the previous one are that the level of unemployment is lowered by about 14,000 full-time persons, corresponding to about 0.5 per cent points. Hence, the level of unemployment is generally (and technically) lower in this Convergence Programme compared to CP07. More information about the definition of unemployment is given in *Economic Survey, May 2008*.

2009, after which production growth recovers to close to ¾ pct. in 2010. The output gap is estimated at -0.7 per cent in 2010, while unemployment is close to its structural level. Hence, the adjustment towards a less strong cyclical position occurs faster than previously assumed.

Table 3.3
Key figures for Denmark, 2007-2015

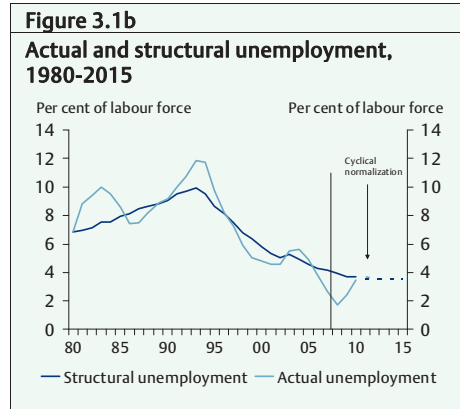
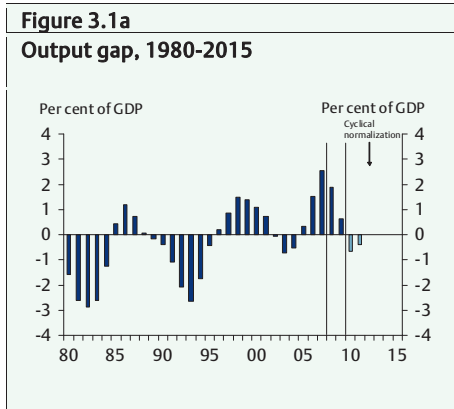
	Short-term outlook				Assumed normalization of the business cycle		
	2007	2008	2009	2010	2011	2012	2013-15
Outputgap and real growth rates							
Outputgap (per cent of GDP)	2.5	1.9	0.6	-0.7	-0.4	0.0	0.0
Real GDP	1.6	0.2	-0.2	0.7	1.9	1.7	1.6
Gross value added	1.7	0.4	-0.2	0.8	1.6	2.1	1.6
Growth components, real growth in per cent							
Private consumption	2.4	0.9	0.7	1.1	1.7	1.8	1.8
Public consumption ¹⁾	1.3	1.6	1.2	1.0	1.0	1.0	0.8
Fixed gross investment	3.1	-0.9	-4.2	-2.5	1.0	0.9	2.5
Change in stocks ²⁾	-0.3	0.2	0.0	0.0	0.0	0.0	0.0
Exports	2.2	3.3	-0.1	2.3	4.4	3.1	2.6
Imports	2.8	4.8	-0.1	1.5	3.6	2.6	2.7
Contribution to GDP growth, percentage points							
Final domestic demand	1.9	0.9	-0.2	0.3	1.3	1.3	1.6
Changes in stocks	-0.3	0.2	0.0	0.0	0.0	0.0	0.0
Net exports	-0.2	-0.7	0.0	0.4	0.5	0.3	0.1
Labour market indicators, per cent							
Employment growth	2.7	0.3	-1.3	-1.7	0.1	0.2	-0.1
Structural unemployment rate	4.2	3.9	3.7	3.6	3.5	3.5	3.5
Unemployment rate (per cent of workforce)	2.6	1.7	2.4	3.4	3.7	3.5	3.5
Hourly productivity in private sector	-1.9	0.7	1.6	2.8	1.3	1.9	1.7
Productivity (gross value added per employee)	-1.0	0.1	1.1	2.6	1.5	1.9	1.7

1) Real growth in public consumption as measured in the national accounts reflects growth in the consumption of resources – not improvements in services offered – mainly because productivity growth in the public sector is not measured.

2) Contributing to GDP growth.

Source: Statistics Denmark and own calculations.

It is technically assumed that activity growth in 2011 and 2012 exceeds potential and is sufficient for capacity utilisation to reach a normal level from 2012 onwards. It is thereby assumed that annual GDP growth is around 1½ per cent as of 2012, while unemployment and the labour force will be at their structural levels so that the labour market is no longer subject to cyclical pressures, cf. figure 3.1a. Given the technical assumptions applied, gradually increasing capacity utilisation from 2010 to 2012 is supported by an emerging recovery abroad as well as low interest rates.



Source: Statistics Denmark and own calculations.

Recorded unemployed has fallen to an extraordinarily low level of 46,000 persons in September 2008, which is a reduction of 124,000 since the most recent peak in December 2003. Unemployment is historically low and also low compared to other countries. According to the international definition unemployment is currently the third-lowest in the EU. In October the seasonally-adjusted unemployment increased by 1,800 persons and stood at 1.7 pct. of the labour force. The rise in unemployment is a tangible indicator that the massive labour market pressure built up during the latest cyclical upswing is now moderating. Unemployment is expected to increase to an annual average of 70,000 persons or 2.4 pct. of the labour force (national definition) in 2009, and about 99,000 persons or 3.4 pct. of the labour force in 2010.

The evolution of unemployment going forward is uncertain. It is possible that businesses will adjust the number of employees more aggressively in view of recent years' weak productivity growth and rapidly changing financing and sales opportunities in the wake of the financial turmoil and weaker growth prospects. On the other hand, a strong increase in household real disposable income and decreasing interest rates, which will affect employment mainly during 2010, may dampen the rise in unemployment. The rise in unemployment can also be moderated by the demographic decline in the labour force, larger-than-expected cyclical reductions in working time and a likely further reduction in the number of cross-border workers.

Overall, unemployment is expected to increase from 2008 to around its estimated structural level in 2010. Structural unemployment is estimated at below 4 per cent in 2008 (national definition) with a statistical uncertainty of around $\pm 1/2$ percentage point⁵. Based on already decided reforms, the structural unemployment rate is expected to decline to about $3\frac{1}{2}$ per cent in 2010 and thereafter, *cf. figure 3.1b*. It is especially initiatives in the 2006 Welfare Agreement and more restrictive rules for sup-

⁵ The estimated 95 per cent confidence interval of $\pm 1/2$ percentage point assumes that the statistical model applied in the estimation of the structural unemployment rate is correct and adequate. Including model uncertainty, the uncertainty is higher, perhaps ± 1 percentage points.

plementary unemployment benefits in the 2008 Job Plan, which are considered to lower the structural unemployment rate (which is counted in full-time equivalents and does not include unemployed participating in activation schemes). Part of the impact of the Welfare Agreement's new rules governing activation reflect more unemployed participating in activation measures, which does not reduce "gross" unemployment but only recorded unemployment. However, there will likely also be additional real effects on gross unemployment from "motivation effects" of intensified activation requirements as well as from the harmonized duration of the benefit period and activation requirements for elderly unemployed, as well as other initiatives.

The expected low growth of the next years mainly reflects a significant decline in housing investment, owing mainly to falling house prices and the fact that housing construction has been extraordinarily high for some time. Business investments are also expected to decline from a high level and exports to be very weak in view of muted economic growth abroad and deteriorating competitiveness. Meanwhile, fiscal policy is expansionary, and private consumption is as mentioned supported by strong household real income growth of up to 4 per cent in 2009 notwithstanding rising unemployment. This reflects rather high increases in real wages and benefits as well as tax reductions exceeding 9 bill. DKr. Lower interest rates together with rising incomes will support private consumption, which is expected to increase by 0.7 per cent in 2009. The projection assumes a pronounced increase in the household savings rate in the context of the weakened consumer confidence, lower financial wealth and rising unemployment.

3.3 Employment and productivity assumptions through 2015

The forecast for 2008-10 and the assumptions thereafter imply annual average GDP growth of less than 1 per cent during 2008-12, *cf. table 3.4 (last row)*. To a large extent, the subdued growth rate reflects the assumed cyclical normalization which implies that the estimated output gap of 2½ per cent of GDP in 2007 is closed by 2012.

For the entire planning horizon to 2015, the projection implies an average annual growth rate of only slightly above 1 per cent (2008-15), which is significantly lower than the mean annual growth rate of about 2¼ percent from 1990 to 2007.

Growth in potential production⁶ is estimated at 1.6 per cent during 2008-15 which is 0.4 percentage points lower than in the period 1990-2007. In large part, this is because the reduction in structural unemployment of almost 5 percentage points from the early 1990's to 2007 cannot be replicated. Structural unemployment is, as mentioned, assumed to edge down from 4 per cent in 2007 to about 3½ per cent.

Moreover, in the period since 1990, growth has been supported by an increase in average working hours related to e.g. fewer part-timers and more people working more

⁶ Consisting of cyclically-adjusted contributions from growth in hourly productivity, structural employment and estimates of the underlying development in working hours.

than one job. The rising average level of educational attainment in the labour force, consecutive tax reforms and generally advantageous demand conditions for most of the period may also have contributed the rise in working hours.

Going forward, changes in the age composition of the labour force and the latest collective agreements etc. may engender an underlying decline in working hours. The estimate for potential growth to 2015 assumes, however, unchanged working hours from 2009 to 2015 which, as stated, will require additional reforms.

The difference between actual and potential GDP growth reflects cyclical contributions. During the period 1990–2007 the cycle has, overall, contributed positively as actual GDP has grown more than potential, cf. table 3.4. For the period 2008–15 actual output is likely to increase at a slower rate than potential due to very weak near term prospects and the assumed normalization of activity levels by 2012.

Table 3.4
Contribution to potential production and real GDP

	1990-07	2008-12	2013-15	2008-15
Annual growth, per cent				
Growth in production potential	2.0	1.5	1.6	1.6
Of which:				
- Hourly productivity	1.4	1.6	1.7	1.6
- Structural unemployment	0.3	0.1	0.0	0.1
- Structural labour force	0.1	-0.1	-0.1	-0.1
- Working hours (structural)	0.2	-0.1	0.0	0.0
- Cyclical contribution	0.2	-0.7	0.0	-0.4
Growth in GDP	2.2	0.8	1.6	1.1

Note: The growth in hourly productivity is measured as the growth in GDP per hour worked.
Source: ADAM databank and own calculations.

Annual potential growth up to 2015 is thus assumed to be around 1½ per cent. This is based on the following assumptions:

- *Higher productivity growth than in the last decade.* Projected growth is mainly driven by productivity (production per hour worked), which is assumed to grow by about 1.6 per cent per year on average over the period. Productivity in private urban occupations is assumed to grow by about 2 per cent per year, which may be compared to a recorded average of close to 1½ per cent since 1990⁷. Relatively modest productivity growth over the last 10–15 years may partly be a consequence of the strong increase in employment supported by labour market reforms. This may have muted productivity growth in part because workers with relatively low productivity and wages have gained better access to the labour

⁷ The national accounts do not include productivity growth in the public sector, which counts for about 30 per cent of total employment. Under the technical assumptions, no productivity growth is included for the public sector.

market⁸. Going forward, the initiatives in the Globalisation strategy should support higher productivity.

- *Reforms are implemented to increase labour supply by 20,000 persons and counter the underlying reduction in average working hours.* The presumed reforms are sufficient to ensure that total labour supply (excluding cyclical fluctuations) is roughly upheld in the projection to 2015 despite adverse demographics, *cf. below*. Relative to a baseline without new initiatives, the assumed reforms augment total labour supply by some 2 per cent by 2015 – i.e. by about 0.3 per cent per year on average. Hence, in the absence of new reforms, potential growth will be lower at about 1¼ per cent per year.

The projections of the labour force and employment through 2015 are founded on the population projection from DREAM 2008 and assume in particular:

- *Structural unemployment amounts to 3½ pct. of the labour force corresponding to about 100,000 persons from 2011 and ahead.* This means that unemployment is assumed to be around 3½ per cent on average over the cycle during the next decades, which is a low level compared to other countries as well as historically.
- *The structural labour force declines from about 2.905 million in 2007 to about 2.880 million in 2015, i.e. by about 25,000 persons.* The starting point for the projection is a demographic scenario in which participation rates conditional on age, gender and country of origin are constant at their 2006 levels (adjusted for cyclical effects). Further included is a likely reduction in the number of border workers related mainly to weakening construction, whereas the very high (job-oriented) net immigration in 2007 and 2008 is expected to normalize. In addition, the projections include estimated effects of implemented reforms etc. and for larger benefit schemes also information on changing influx patterns etc., *cf. box 3.1*. The projected structural labour force includes a contribution of 20,000 persons by 2015 from assumed reforms.
- *Already implemented reforms and the required employment impact of new reforms counteract the demographic drag on labour supply, thus permitting unchanged structural employment.* Structural employment is fairly stable in the projection to 2015. This reflects that the decline in structural unemployment off-sets the incorporated reduction in the structural labour force of about 25,000 persons during the same period.

⁸ Over the last 10-15 years, there has been a tendency across OECD-countries that countries experiencing high employment growth, *ceteribus paribus*, have had lower productivity growth, *cf. The Danish Ministry of Finance WP 18/2006: The US as a benchmark for EU15 productivity: lessons?*

Box 3.1**Key assumptions about labour supply and benefit recipients etc.**

The projections of the number of active labour market participants and recipients of benefits take as their starting point a demographic scenario in which participation rates etc. by age, gender and country of origin are held constant at their 2006 level (excluding cyclical effects). The projected number of recipients of early retirement and disability pension incorporates information about recent inflows by age, gender and country of origin. Effects are also included from the education-targets in the Welfare Agreement and the Globalisation strategy, which raise the number of students and hence dampen labour force growth up to 2015¹. Further included are the forecasts for 2008-10 of the number of recipients of various benefits etc. that are entailed in the December Economic Survey.

VERP. With VERP participation rates by age, gender and origin held at their 2006 levels, the number of early retirement recipients (aged 60-64 years) would have increased by about 10,000 by 2008, but in fact the number appears largely constant. Of this relative reduction in the number of VERP recipients compared to the demographic scenario (in the course of 2006-08), about half is assumed to be a cyclical effect reflecting the extraordinarily good job opportunities, and this effect is assumed to fade in coming years. Meanwhile, initiatives in the Welfare Agreement and the Job Plan initiative to grant a tax allowance for 64-year olds who still work full-time, are estimated to reduce the number of VERP recipients by up to 4,000 by 2015. In sum, the projection approximately matches the demographic scenario, which implies a reduction by about 15,000 from 2008 to 2015, *cf. figure a.*

Disability pension. The number of disability pensioners is projected to ease marginally from 2006 to 2015 in the absence of new reforms, *cf. figure b.* The projection is based on recent patterns for in- and outflows as well as estimates in the *Economic Survey* etc. and should be viewed in light of the demographic scenario, which also indicates a roughly constant number of disability pensioners.

Study grants. The number of students receiving study grants, and who do not work alongside their studies and consequently are not counted in the labour force, increases by about 35-40,000 up to 2015. Of these, an increase of about 10,000 follow from demographic developments with the rejoinder reflecting the targets that at least 95 per cent of a youth cohort should complete secondary education and at least 50 per cent of a youth cohort should complete a tertiary education by 2015. The number of recipients of study grants who work on the side grows proportionately.

Sickness benefits. Recipients of sickness benefit have increased by about 15,000 from 2006 to 2008. Based on demographics as well as a contribution from the initiatives to reduce sickness absence, the number of sickness benefit recipients counted as employed is relatively unaltered from 2008 to 2015.

Figure a
Early retirement recipients, 60-64-olds

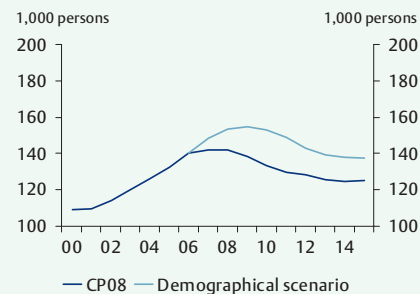
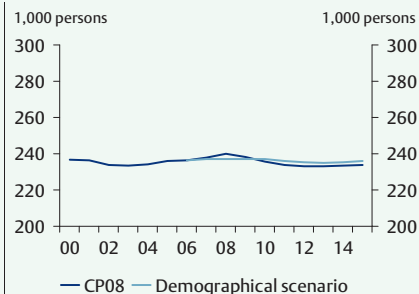


Figure b
Number of disability pensioners, 18-64-olds



Note: In figure b the data up to 2006 are based on RAS data, scaled to the ADAM-level in 2006.

- 1) Meanwhile, the increased enrolment in education increases employment in the longer-run as a higher level of educational attainment is typically associated with a higher employment rate, *cf. CP06.*

Overall, the medium-term projection rests on the basis that actual employment may decline by about 75,000 persons (2½ per cent) from its high level in 2007 to 2015, *cf. table 3.5 (row 6)*. In this vein, it is primarily the assumed cyclical normalization which may reduce employment from its current record-high level (*row 5*).

Demographic trends – with fewer in the cohorts that have the highest participation rates, more old citizens and a growing share of immigrants and descendants – tend to lower employment by some 35,000 persons from 2007 towards 2015, *cf. row 1*.

The adverse drag from demographic factors is partly offset by structural improvements in the labour market, which mainly stem from implemented reforms as well as rising educational attainment and increased average residence periods for immigrants as well as other contributions that together are estimated to raise employment by around 15,000 persons, *cf. row 2⁹*.

Table 3.5	
Contributions to the increase in employment	
	2007-2015
1,000 persons	
1. Demographic factors ¹⁾	-35
2. Assumed contribution from already-implemented reforms, including effects of the Welfare Agreement etc. ²⁾	15
3. Structural reform requirements for increased employment etc.	20
4. Structural employment (1+2+3)	0
5. Cyclical contribution ²⁾	-75
6. Change in actual employment (4+5)	-75
- of which related to change in unemployment	20
- of which change in labour force	-55
<p>1) Assumes an unchanged aggregate unemployment rate and unchanged participation rates broken down by gender, age and origin from 2005 to 2015. A net reduction of the contribution from foreign labour relative to the high level in 2007 is also included.</p> <p>2) The calculation incorporates higher participation rates for more-educated groups and changes to the average residence period for immigrants.</p> <p>Source: Own calculations.</p>	

In addition, the new labour market initiatives are assumed to raise employment by 20,000 persons up to 2015 (*row 3*). This requirement should be viewed in light of the already significant contributions from earlier labour market and other reforms.

Hence, in total, structural employment is projected to be about unchanged from 2007 to 2015 (*row 4*).

⁹ The contribution includes an increase in structural employment of about 15,000 persons owing to the effects of the 2006 Welfare Agreement. An increase in disability pension, more people outside the labour force receiving sickness benefits and changes to the maternity benefit scheme pull in the opposite direction.

Working hours

Average annual working hours have, as mentioned, increased since the early 1990s after a considerable decline in previous decades.

In CP08, the working hours requirement is that average working hours do not decline from 2009 to 2015, *cf. figure 3.2*. The requirement is calculated relative to a baseline which includes the effects of changing age composition in the labour force etc.

Thus, the growing share of young (students) and elderly workers in the labour force may tend to reduce the average number of working hours, as these groups on average work fewer hours than middle-aged. At unchanged hours in each age group (etc.), the changing age composition may reduce average hours by 1.1 per cent from 2009 to 2015, *cf. table 3.6*.

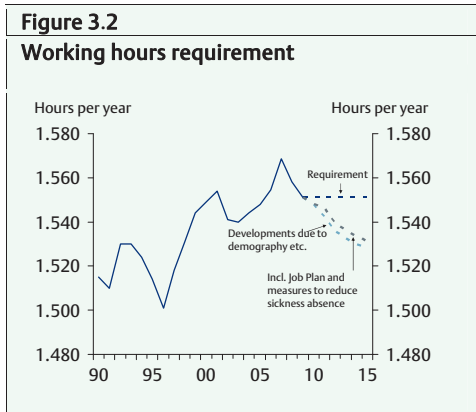


Table 3.6
Contributions to the change in the average hours worked from 2009 to 2015

	2009-2015
Total (CP08-scenario)	0.0
- More young and elderly in the labour force (age composition)	-1.1
- Other factors	-1.0
- Lower tax on earned income	0.3
- Job Plan and sickness absence plan	0.3
- Requirement for unchanged hours	1.5

Moreover, an increase in education enrollment (with some students working part-time and thus counting in the labour force) as well as an adverse change in the number of ordinary jobs relative to subsidized employment may also pull down average working hours (included in the table under *other factors*). Hence, the assumed job-loss from cyclical normalisation essentially concerns ordinary jobs, whereas initiatives in the Welfare Agreement to intensify activation requirements for the unemployed, including in the shape of more on-the-job training, will raise the number of people in subsidized employment.

The tax agreement from autumn 2007, which includes lower taxes on earned income (*cf. chapter 2 and CP07*), lowers the marginal tax rate by, on average, about 1¼ percentage points, and thereby improves incentives to work. Overall, the tax agreement is assumed to increase average working hours by about 0.3 per cent.

In the original 2015-plan and CP07 it was a requirement that average working hours should not decline from 2009 to 2015, and this corresponded to an increase in average working hours of 1.8 per cent relative to the baseline traced out by changes in

the age composition, ordinary employment, subsidized employment and estimated effects of the tax agreement etc.

Since CP07, the Job Plan and initiatives to reduce sickness absence have been decided. These initiatives primarily increase labour supply through higher average working hours corresponding to about ¼ percent. These agreements thereby implement part of the working hours requirement in CP07.

Hence, the working hours requirement in CP08 necessitates an increase in average hours worked of around 1.5 per cent relative to baseline in 2015 to ensure unchanged average hours worked.

3.4 Wages and prices

Based on the outcome of the latest collective wage bargaining round and current labour market pressures, wages are assumed to rise at a faster pace than in the euro area in 2008-10, implying a loss in wage competitiveness. Since 2000, wage increases per employee have been around 1 per cent higher on average than in the euro area, only partly reflecting higher productivity growth per employee.

	2007	2008	2009	2010	2011	2012	2013-15
Annual growth, per cent							
Consumption deflator	1.8	3.1	1.7	2.2	1.5	1.8	1.9
Consumer price index	1.7	3.3	1.6	2.2	0.6	1.8	1.9
Do. EU-harmonized HICP	1.7	3.6	1.3	2.1	1.4	1.8	1.8
GDP-deflator	2.0	3.9	2.8	2.1	2.0	2.5	2.3
Hourly wage rate	4.1	4.7	4.3	4.0	3.8	3.8	3.8
Wage costs per employee (NA-based)	3.0	3.9	4.3	3.8	4.0	3.9	3.8
The euro area							
HICP	2.2	3.4	2.1	2.2	-	-	-
Compensation per employee (NA-based)	2.7	3.7	3.1	2.7	-	-	-
Source: Statistics Denmark, European Commission autumn forecasts 2008, DA's StrukturStatistik and own calculations.							

Consumer prices are estimated to increase by 3.3 per cent in 2008, 1.6 per cent in 2009 and 2.2 per cent in 2010, in part because this year's climb in food and energy prices is reversed in 2009 and 2010. Also, the high wage growth adds to inflation, *cf. table 3.7*. In the medium term, CPI inflation amounts to some 1¾ per cent in light of the stable exchange rate policy and the ECB's objective to maintain price stability implying medium-term inflation below 2 per cent per year. The GDP deflator rises more than consumer prices, primarily because the deflator for value-added in the

public sector grows more than private sector prices. In part, this follows from the national accounts convention that productivity gains in the public sector are not measured.

Inflation in Denmark has mounted over the last year. In October, core inflation was 0.7 percentage points higher than in the euro area, a differential that is not compatible with the stable exchange rate policy over the longer run. Going forward, the inflation rate is expected to gradually subside to the level of the euro area, and this may contribute to a narrowing of the present interest rate spread vis-à-vis the euro area.

In 2008-10 the hourly wage rate is expected to increase by 4.7 per cent, 4.3 per cent and 4 per cent respectively. The technical scenario from 2011 to 2015 assumes an hourly wage increase of 3.8 per cent per year. The assumed increase in wages corresponds to the medium-term inflation rate of around 1¾ per cent plus the assumed productivity growth rate in the private sector of close to 2 per cent.

3.5 Savings, investments and net foreign assets

In 2007, private sector investment corresponded to around 21 per cent of GDP, which is high in historical perspective. In the economic outlook for 2008-10, the investment ratio is assumed to subside, primarily reflecting weaker demand prospects and tighter credit conditions. Towards 2015, the investment share amounts to around 18-19 per cent of GDP in the projection, *cf. table 3.8*.

Table 3.8

Current account, net foreign assets, savings and investments

	2007	2008	2009	2010	2011	2012	2012-15 ¹⁾
Per cent of GDP							
Private sector investment share	21.1	20.9	20.2	19.2	18.8	18.8	19.1
Private sector savings share	17.4	19.7	22.0	22.7	21.2	21.3	21.0
Private financial savings	-3.7	-1.2	1.8	3.6	2.3	2.6	1.9
Public financial assets	4.5	3.0	0.0	-1.2	0.3	0.1	-0.1
Current account	0.7	1.7	1.8	2.3	2.6	2.6	1.8
Net foreign assets	-6.6	-10.1	-8.1	-5.5	-2.7	0.0	6.2

1) Level in the last year.

Source: Statistics Denmark and own calculations.

In line with the normalization of the business cycle, private sector gross saving is assumed to increase from around 17 per cent of GDP in 2007 to more than 22½ per cent of GDP in 2010, before returning to 21 per cent by 2015. Hence, the present financial savings deficit in the private sector turns to a surplus in the projection.

The projection points to declining public sector financial savings as reflected in the general government budget balance.

Continued surpluses on the current account balance in 2008-10 reflect, among other things, large surpluses on trade in services and net transfers of investment income from abroad. The external surplus is projected at some 2.2 per cent of GDP on average for the period 2009-15.

Abstracting from changes in the valuations of external assets and liabilities, which may often be quite substantial, the net foreign debt of around 10 per cent of GDP by the end of 2008 is projected to turn into a net foreign asset position of around 6 per cent of GDP by 2015.

4. Outlook for public finances to 2015

4.1 Overview of public finances

The assessment of public finance developments is founded on the short-term outlook in *Economic Survey, December 2008* covering the years up to 2010, and a model-based update of the 2015-projection.

Based on the macroeconomic projection and policy assumptions – including the Fiscal Bill for 2009 – the general government budget surplus is estimated at 3 per cent of GDP in 2008 and close to balance in 2009, *cf. table 4.1*. For 2010, the forecast points to a general government deficit of close to 23 billion DKK (-1.2 per cent of GDP). This will be the first time since 2003 that the general government budget is in deficit. The estimated budget balance in 2010 is to a large extent based on technical assumptions and includes an estimated one-off transfer related to the pension yield taxation of more than 15 billion DKK¹.

	ESA	2007	2008	2009	2010	2011	2012	2015
Per cent of GDP								
Revenues	ESA	54.5	53.2	51.2	51.5	52.1	51.8	51.5
- of which taxes		48.8	47.6	45.7	46.1	46.6	46.4	46.2
Expenditures	ESA	50.0	50.2	51.2	52.8	51.8	51.7	51.6
Public balance (national accounts)	B9	4.5	3.0	0.0	-1.2	0.3	0.1	-0.1
- central and local government		4.5	3.0	0.0	-1.2	0.3	0.1	-0.1
Public balance (EDP-basis)	B9 EDP	4.5	3.0	0.0	-1.2	0.3	0.1	-0.1
Public gross debt (EU-definition)		26.3	30.3	27.9	26.3	25.4	24.6	22.6
Public net debt		-4.1	-6.9	-6.7	-5.3	-5.6	-5.9	-6.4
Net debt in central and local governments		-4.0	-6.8	-6.7	-5.3	-5.6	-5.8	-6.3

Source: Statistics Denmark and own calculations.

The deteriorating public balance should also be seen in light of the expected cyclical deterioration as well as falling equity and oil prices in the wake of the financial turmoil. In addition, personal income taxes are reduced as a result of the 2007 tax agreement while public service spending increases relative to GDP.

¹ Changes to the pension yield tax agreed in December 2007 reflecting EU requirements are estimated to increase capital transfers to households by around 15 billion DKK in 2010, while revenues from pension yield taxation go by about 8 billion DKK. The general government budget balance is thus reduced by approximately 7 billion DKK as a result of the changes. The structural budget balance is not affected by this one-off expenditure, *cf. chapter 2*.

The general government budget surplus in 2008 exceeds the estimated structural balance which adjusts for cyclical factors and a number of special items, *cf. section 4.2*. In 2009 and 2010 the projected budget balance is below the estimated structural balance.

The projected general government budget balances are uncertain. In particular, some important revenues are highly sensitive to changes in oil prices and financial market developments, including changes in interest rates and stock prices. This applies for instance to the revenues from the North Sea oil and gas production, which depend on oil prices and the dollar exchange rate, and the pension yield tax, which is determined on an accrual basis and may fluctuate sharply from year to year.

Given the assumed normalization of the activity level and other transitory factors, the general government surplus is expected to be reduced to 0- $\frac{1}{4}$ per cent of GDP in 2011-2012 and around balance towards 2015, when the balance is -0.1 per cent of GDP.

Consolidated gross debt (“EMU debt”) increases in per cent of GDP from 2007 to 2008, *cf. below*, and declines to 26 $\frac{1}{4}$ per cent of GDP in 2010 corresponding to the level in 2007. By 2015 EMU debt is expected to be reduced to 22 $\frac{1}{2}$ per cent of GDP. The public net asset position (which includes all financial assets and liabilities) of close to 4 per cent of GDP by end-2007 is projected to increase gradually to some 6 $\frac{1}{2}$ per cent of GDP towards 2015.

As part of the Stability and Growth Pact, Denmark reports its general government budget balance and debt (EMU debt) to the European Commission under the Excessive Deficit Procedure, EDP. The EDP-reporting in October was based on the data from *Economic Survey, august 2008*.

The public balance on EDP-basis differs in some aspects from the balance according to the national accounts.

This reflects that the public balance on the EDP-basis includes net interest income from central government interest rate and currency swaps and a different treatment of central government revenues from the sale of UMTS-licenses.² Also, the general government surplus on the EDP-basis corrects for certain infrastructure investments including, among other things, the deficit in BaneDanmark.³

² For EDP purposes, all government revenue from the sale of UMTS licenses is accrued to 2001. In other words, the revenue is considered a type of one-off income, even though the government *de facto* will receive revenue from this source during 2001-2011. In the national accounts, Statistics Denmark has chosen to spread the total revenue over the 20-year period for which the licenses are valid.

³ These corrections have only marginal effects on the general government balance. The treatment of central government interest rate and currency swaps and infrastructure investments improve the budget balance on EDP-basis marginally in 2007 (0.0-0.1 per cent of GDP), while the corrections regarding revenues from the sale of UMTS licenses reduce the general government balance slightly (0.0 per cent of GDP).

The correction regarding swap-related flows and infrastructure investments, which increases the public balance on EDP-basis, is partly offset by the correction for UMTS-licenses. The public balance on the EDP-basis is thus only slightly higher than the public balance based on national account principles.

On October 10 the Danish parliament passed the Financial Stability Act, under which financial institutions that are members of the Private Contingency Association will cover the claims against banks of up to 35 billion DKR from unsecured creditors. Claims exceeding 35 billion DKR are covered by the government. Financial institutions joining the scheme must pay a guarantee commission of 15 billion DKK over two years (from the fourth quarter of 2008 to the third quarter of 2010). This reduces financial sector earnings thereby lowering corporate tax revenues by 3.8 billion DKK. The estimated corporate tax revenues also take into account that financing costs of financial institutions should gradually fall due to the state guarantee for simple creditors. In and by itself, the state guarantee does not affect public finances.

4.2 Structural budget balance

The estimated structural surplus is $2\frac{1}{4}$ per cent of GDP in 2008 and around 1 per cent of GDP in 2009. In 2010 the estimated structural surplus is 0.9 per cent of GDP, cf. table 4.2.

The structural budget surplus is projected to decrease to $\frac{1}{4}$ cent of GDP in 2012 and close to balance in 2015. This reflects an anticipated decline in oil- and gas production as well as the assumed path for oil prices from 2009 to 2015 (implying declining revenues from the North Sea activities), increased public spending on old-age pensions in line with the increasing number of pensioners, and the expenditure and tax policy priorities towards 2015. The structural policy requirements concerning employment and working hours towards 2015 pull in the opposite direction.

The estimated structural budget surpluses are in line with the target interval of structural surpluses (MTO) in the 2015-plan, requiring structural surpluses of $\frac{3}{4}$ - $1\frac{3}{4}$ per cent of GDP towards 2010, and surplus or balance in 2011-2015, cf. *Towards New Goals – Denmark 2015*.

The target interval to 2010 is stated for the structural budget balance in case of a continued suspension of special pension (SP) contributions. If SP contributions are reintroduced, the target interval to 2010 is for surpluses of $\frac{1}{2}$ - $1\frac{1}{2}$ per cent of GDP.

Structural budget balance							
	2007	2008	2009	2010	2011	2012	2015
Per cent of GDP							
1. Actual balance	4.5	3.0	0.0	-1.2	0.3	0.1	-0.1
2. Cyclical adjustment	-2.2	-1.7	-0.6	0.5	0.2	0.0	0.0
3. Special items	0.1	1.0	1.7	1.7	0.2	0.0	0.0
Hereof							
Corporate tax ¹⁾	-0.3	0.1	0.4	0.2	0.0	0.0	0.0
Pension yield tax	0.7	1.0	0.8	0.3	0.1	0.0	0.0
Net interest payments	-0.2	-0.3	0.0	0.0	0.0	0.0	0.0
Revenues from the North Sea ²⁾	-0.3	-0.5	0.4	0.2	0.1	0.0	0.0
Special items ³⁾	0.1	0.6	0.2	0.9	-0.1	0.0	0.0
4. Structural budget balance (1-2-3)	2.4	2.3	1.1	0.9	0.6	0.1	-0.1
Memorandum items							
Output gap	2.5	1.9	0.6	-0.7	-0.4 ⁴⁾	0.0	0.0
Employment gap	2.6	2.9	1.6	0.0	-0.2 ⁴⁾	0.0	0.0
1)	Excl. hydro carbon tax and corporate taxes from corporations liable to carbon tax payments.						
2)	Hydro carbon tax, corporate taxes from corporations liable to hydrocarbon tax, excise tax on oil pipelines and profit sharing.						
3)	Including net current and capital transfers, e.g. EU-contributions, foreign aid expenditures, block grants to the Faroe Islands and Greenland, purchase and sale of land and rights. These special items can vary somewhat from year to year.						
4)	Technically it is assumed, that the output and employment gaps are closed in 2012.						
Source: Statistics Denmark and own calculations.							

In 2008 and 2009, the cyclical position is estimated to strengthen the public balance by 1.7 and 0.6 per cent of GDP, respectively. Large expected revenues from the North Sea activities contribute to raise the actual budget balance in 2008 above structural by 0.5 per cent of GDP.⁴ The revenue from the tax on pension fund returns, on the other hand, is estimated to be around 0 per cent of GDP in 2008 and 2009 and is thus around 1 per cent of GDP lower than the estimated trend level.⁵

In 2010 the output gap is negative, and the cyclical position reduces the actual budget balance relative to the structural budget balance. The structural budget balance does not reflect the one-off expenditures connected to the changes to the pension yield taxation.

From 2010 to 2012 the cyclical position is technically assumed to revert to neutral implying output and employment gaps of zero in 2012-2015. At the same time, the correction for special items is assumed to be zero in 2012-2015. From 2012 to 2015

⁴ The trend level of revenues from the North Sea activities is estimated as the estimated structural level in the 2015-plan, in which the target interval for the structural budget balance was determined, corrected for the permanent effect of changed current and future revenues compared to DK2015. The permanent effect of changed revenues equals 0 and the structural level thus correspond to CP07.

⁵ The trend level of revenues from tax on pension fund returns is estimated at about 1 per cent of GDP in 2006-2008. The estimated revenues are associated with large uncertainty also for this year.

thus, projected economic developments are assumed to follow the structural path, and this means that the budget balance is assumed to equal the structural balance.

4.3 Fiscal policy stance

Fiscal policy is planned in accordance with the 2015-plan from august 2007.

The fiscal policies adopted for 2009 – the fiscal bill being adopted on 11. December – entail an easing of close to 1 per cent of GDP or 16 billion DKR as measured by the direct budgetary impact of discretionary policies. Moreover, it has been decided to continue the suspension of SP-payments.

Fiscal policy is estimated to inject a stimulus to demand growth of around 0.4 per cent of GDP as measured by the first-year fiscal effect, *cf. table 4.3*. The estimated fiscal policy impact in 2009 reflects the increase in public consumption and tax reductions partly under the 2007 tax agreement and partly due to the compensating reduction in state taxes under the tax freeze following higher local government taxation in 2008, *cf. chapters 1 and 2*.

The fiscal policy impact in 2009 should be seen in connection with initiatives to strengthen labour supply. This includes initiatives in the Job Plan and the higher income threshold for the middle bracket tax in 2009. Other things equal, the Job Plan, the labour market initiatives in the 2006 Welfare Agreement and the 2007 tax agreement are estimated to raise labour supply by 20-25.000 persons from 2007 to 2010 (corresponding to $\frac{3}{4}$ percent of the labour force). The size and timing of the effects is subject to uncertainty.

Table 4.3

Policy impact on economic activity

	2005	2006	2007	2008	2009	2010
Per cent						
GDP-growth	2.4	3.3	1.6	0.2	-0.2	0.7
Output gap	0.3	1.5	2.5	1.9	0.6	-0.7
Percentage points						
First-year fiscal effect	0.3	0.5	-0.1	0.2	0.4	-
- change since aug08	0.2	0.1	-0.2	0.1	0.1	-
Multi-annual fiscal effect	0.5	0.5	-0.1	0.1	0.2	-
Interest rate changes since 2008 ¹⁾	-	-	-	-	0.4	0.9

1) Based on the model-simulated impact on GDP growth of interest rate changes since 2008.
Source: Statistics Denmark and own calculations.

Box 4.1**Discretionary one-off measures in 2008 and 2009**

Based on the fiscal bill for 2008 and 2009, the total impact on the central government CIL-balance of discretionary one-off measures is estimated to be -9¾ bill. DKK in 2008, *cf. table a*. Especially the one-off expenditure of 9½ bill. DKK concerning pension yield taxation lowers the CIL-account in 2008.

The general government budget balance is estimated to be reduced by approximately 7½ bill. DKK in 2008 due to discretionary one-off measures etc.

In 2009 discretionary one-off measures etc. are estimated to reduce the central government CIL-account by 2½ bill. DKK. This is mainly due to the commitment regarding the future closing-down of activities in the North Sea.

The release of the compulsory central government saving and one-year funds on the Fiscal Bill for 2009 are the main reasons for a reduction of the general government balance of 2 bill. DKK in 2009 owing to discretionary one-off measures.

Table a**Discretionary one-off measures in 2008 and 2009**

	CIL- balance	Public balance
Bill. DKK		
Disbursements from IØ and IFU	0.9	-
Extraordinary dividends	0.4	0.6
Sale of buildings and land	0.2	0.2
Temporary compulsory central government saving scheme	0.8	0.8
Postponement of central government projects	0.5	0.5
Capital investment in Danmarks Grundforskningsfond	-3.0	-
One-off expenditure due to the change in pension yield taxation	-9.5	-9.5
2008 total	9.7	-7.4
Portfolio reallocation of central government assets	2.0	-
Disbursements from IØ and IFU	0.4	-
Temporary compulsory central government saving scheme	-0.9	-0.9
Postponement of central government projects	0.1	0.1
One-year funds	-1.0	-0.8
Closure of Fiskeribanken	0.2	-
Commitment regarding closure of the activities in the North Sea	-3.0	-
One-off expenditure due to the change in pension yield taxation	-0.3	-0.3
2009 total	-2.5	-1.9

Note: Positive (negative) numbers reflect improvement (reduction) in the balance.

Source: Budget Outlook 4, December 2008.

Based on the multi-annual fiscal effect, discretionary fiscal policy changes since 2002 are estimated to raise GDP *growth* in 2009⁶, *cf. table 4.3*, and also contribute to a higher GDP *level* when compared to a situation with neutral fiscal policies since 2002. This reflects a sequential easing of fiscal policy over the period owing mainly

⁶ The calculated multi-annual fiscal effects take into account the lagged effects of fiscal policy in a given year on economic activity in subsequent years. Here, the multi-annual fiscal effect takes into account fiscal policy since 2002.

to public consumption spending and tax reductions, notably by way of the 2004 spring package and the 2007 tax agreement.

Based on the monetary easing that has taken place in large countries and expected further rate reductions, a projected decline in interest rates over the forecast years is estimated to support demand and activity by 0.4 percentage points in 2009 and 0.9 percentage points in 2010 (i.e. relative to interest rates remaining at their 2008 levels). This impact of lower interest rates is conditional on the financial turmoil being contained so that money market and lending rates decrease and that a large dampening effect from tighter credit terms is avoided.

The impact of discretionary one-off measures on the central government CIL-balance and total public finances (net lending) is outlined in *box 4.1*.

4.4 Revenues

Total public revenues are projected to decline from 54½ per cent of GDP in 2007 to 51½ per cent by 2010. From 2010 to 2012 public revenues increase slightly, after which revenues decrease towards 2015 to the 2010 level (in per cent of GDP), *cf. table 4.4*. Hence, public revenues decline by 3 percent of GDP from 2007 to 2015.

The decline in revenues as a share of GDP from 2007 to 2015 mainly reflects a reduction in the tax-to-GDP ratio of approximately 2½ per cent of GDP.

The declining tax-to-GDP ratio partly reflects lower personal taxes as a result of the 2007 tax agreement. In addition, revenues from corporate taxes are reduced by the assumed decline in oil prices relative to 2007. A gradual increase in revenues from the pension yield tax from a relatively low level in 2007 and around 0 in 2008-09 tends to increase the tax-to-GDP ratio. From 2010 towards 2015, revenues from taxation of accrued returns on pension savings increase to around 1 per cent of GDP in line with, notably, growing pension assets relative to GDP.

Furthermore, the nominal principle of the tax freeze contributes to an underlying reduction in the tax-to-GDP ratio. The effect is moderated by the agreed indexation of energy taxes, but declining energy consumption as a share of GDP – reflecting technological improvements and initiatives in the Energy Agreement 2008 – tends to reduce revenues from energy taxes.

Table 4.4								
Composition of general government finances								
	ESA	2007	2008	2009	2010	2011	2012	2015
Per cent of GDP								
Budget balance (national accounts)	B9	4.5	3.0	0.0	-1.2	0.3	0.1	-0.1
Expenditures		50.0	50.2	51.2	52.8	51.8	51.7	51.6
- Primary expenditures		48.0	48.5	49.3	50.9	50.0	50.1	50.4
- Public consumption	P3	26.0	26.2	27.0	27.2	27.3	27.2	27.1
- Public investment		1.7	1.8	1.8	1.9	1.9	1.9	1.9
- Social transfers	D62	15.3	15.0	15.3	15.8	15.8	15.9	16.3
- Subsidies	D3	2.3	2.2	2.3	2.3	2.4	2.4	2.4
- Other primary expenditures		2.8	3.3	2.9	3.6	2.7	2.7	2.7
- Interest payments	D41	2.0	1.7	2.0	1.9	1.8	1.7	1.2
Revenues		54.5	53.2	51.2	51.5	52.1	51.8	51.5
- Taxes (tax burden)		48.8	47.6	45.7	46.1	46.6	46.4	46.2
- Personal taxes etc. ¹⁾		21.4	21.1	20.3	20.2	20.6	20.6	20.3
- of which property value tax		0.7	0.7	0.7	0.7	0.7	0.6	0.6
- Labour market contribution tax		4.5	4.6	4.6	4.6	4.6	4.6	4.6
- Tax on pension fund returns		0.3	0.0	0.1	0.6	0.7	0.8	1.0
- Corporate taxation		3.6	3.3	2.4	2.6	2.8	2.8	2.8
- VAT		10.4	10.3	10.3	10.2	10.1	10.0	10.0
- Land tax etc.		1.1	1.2	1.2	1.3	1.2	1.3	1.3
- Excise duties etc.		6.5	6.1	5.9	5.7	5.6	5.4	5.2
- Social contributions		1.0	1.0	1.0	1.0	1.0	1.0	0.9
- Interest income	D41	1.4	1.4	1.5	1.5	1.5	1.5	1.4
- Other revenues		4.2	4.2	4.0	3.9	4.0	4.0	3.9

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.

4.5 Expenditures

The share of public expenditures in GDP is estimated to increase from 50 per cent in 2007 to 52.8 per cent by 2010 before easing back to 51.7 per cent by 2012. The increase in expenditures from 2007 to 2010 owes to an increase in primary expenditures, whereas interest payments decrease. The substantial increase in primary expenditures from 2009 to 2010 reflects the one-off capital transfer of around 15 billion DKK associated with the changes to the pension yield tax regime. From 2010 to 2015 primary expenditures as a share of GDP decline by ½ per cent of GDP.

From 2007 to 2015 the projected expenditure ratio increases by around 1½ per cent of GDP, *cf. table 4.4*. The most important drivers are the normalisation of cyclical conditions and increased expenditures for public consumption and old-age pension.

In CP08 it is assumed that expenditures on public services etc. (public consumption) grow in real terms by 1.6 per cent in 2008, 1.2 per cent in 2009 and 1 per cent per year in 2010-2012 (including the funds set aside for globalisation-related initiatives) and $\frac{3}{4}$ per cent per year in 2013-2015. Much of the expenditure growth has been set aside already, including for the Quality Reform, and the objectives that more young people should complete secondary and tertiary education, as well as the objective that public research expenditures should reach 1 per cent of GDP from 2010. Meanwhile, health expenditures can be expected to take up a large part of the remaining room for expenditure growth. New initiatives must therefore to a large extent be financed through reprioritizations within the given expenditure path.

The recent quarterly national accounts show a low growth rate for public consumption in the first three quarters of 2008 compared to the assumed growth rate for 2008 as a whole. In part, this reflects nominal public consumption growth in the national accounts data below the agreements with municipalities and regions. As has been the case earlier (e.g. in 2006) public consumption data in the quarterly national accounts can be very uncertain, and in the estimated spending growth in 2008 more weight is given to other information, including reports on expenditure developments from the ministries and the expected municipality accounts for 2008.

The real growth of public consumption in 2009 is estimated at 1.2 per cent, including 0.2 points from the release of the compulsory central government saving, which reduced public consumption growth in 2008. Real public consumption growth in 2009 also reflects a special increase in resources for services provided directly to citizens, which has been agreed with municipalities and regions. Moreover, additional funds have been earmarked from the “globalisation fund” for research and education and “quality-reform funds” to service areas in municipalities and regions.

In 2010 the assumed real growth of public consumption is 1 per cent as in CP07.

In terms of fiscal sustainability and pressures on taxation, *nominal* spending in relation to the evolution of tax bases is what matters. The assumed real growth of public consumption corresponds to a nominal growth rate of approximately 4 per cent per year on average during 2009 to 2015. A nominal growth rate of approximately 4 per cent per year implies that public consumption overall makes up a broadly unchanged share of (cyclically-adjusted) GDP from 2009 to 2015.

From 2007 to 2010 public consumption as a share of GDP increases by approximately $1\frac{1}{4}$ percentage points – mainly reflecting average real growth of 1.3 per cent in 2007-2010 and high growth in the deflator for public consumption in 2009 ($4\frac{1}{4}$ per cent). From 2010 to 2015 cyclical conditions are technically assumed to normalize, and combined with a real growth rate of public consumption of 1 per cent per year in 2010-2012 and $\frac{3}{4}$ per cent per year in 2013-2015, this causes public consumption to decrease slightly to 27.1 per cent in 2015.

The 2015-plan includes a guideline that public consumption spending may amount to up to 26½ per cent of cyclically-adjusted GDP by 2015, *cf. figure 4.1a*. The spending guideline may be viewed in light of rising numbers of users of public services according to the demographic projection, including senior citizens. The projection in CP08 implies that public consumption spending may slightly exceed 27 per cent in 2015, i.e. approximately ½ per cent of GDP more than the guideline in the 2015-plan. Part of the excess spending owes to Statistics Denmark's revision of national accounts data for GDP up to 2007, which raises spending as a share of GDP by approximately 0.3 percentage points compared to CP07, and which does not affect sustainability⁷. In addition, the higher spending reflects higher public-sector price and wage increases in 2008 and in the projections for 2009 and 2010 partly reflecting the 2008 wage agreements. The public-sector wage agreements imply total wage increases of 12.8 per cent over the period 2008-10 thereby exceeding the 11 per cent included in the 2015-plan⁸. Real growth of public consumption is in line with initial assumptions.

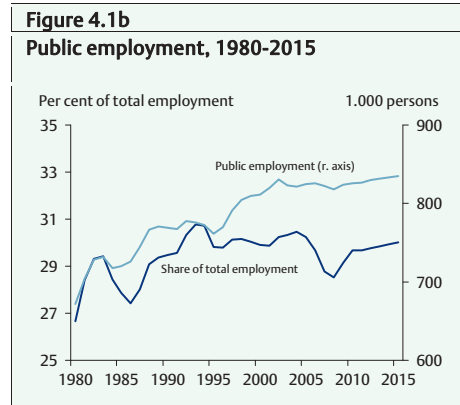
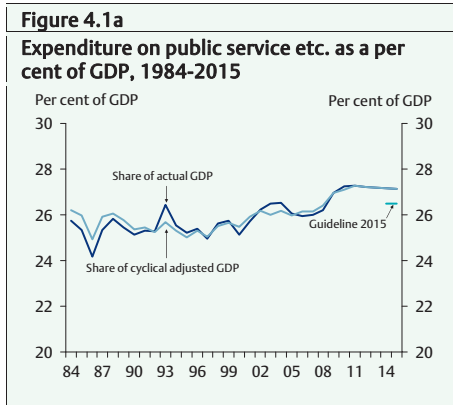
According to the 2015-plan the higher level of public consumption expenditure implies *"an obligation to reconsider economic policy priorities with a view to bring expenditures in line with the guideline"*. Decisions concerning the high share of expenditures will be taken when there is more certainty about cyclical developments, including effects of the financial turmoil, and the benchmark in 2015 is hence maintained, *cf. also chapter 1*. The high level of expenditures (the highest since 1983) underlines the importance of complying with the real consumption targets, including in counties and municipalities. In addition, the high spending level should be viewed in light of fiscal policy sustainability and the structural balance towards 2015 being broadly in line with earlier assumptions.

Accordingly, the broad fiscal policy priorities have not been altered in CP08 and real growth in public consumption towards 2015 is essentially as in CP07. Meanwhile, the challenges of expenditure prioritization are intensified by changes to the demographic outlook whereby the projected number of users of public services grows by ½ per cent more in the current projection to 2015 than in CP07⁹.

⁷ A downward revision of nominal GDP in the historical years forming the basis of the projections, increases both the share of expenditures and revenues in GDP (for given revenues and expenditures in billion DKR) and therefore affects neither the structural balance nor the sustainability indicator.

⁸ The wage agreement should be seen in light of high private-sector wage increases in these years against the background of pronounced labour market pressures and recruitment challenges in both the private and public sector. Private sector wage growth has also been adjusted upward since CP07.

⁹ With expenditures per user as in CP07, the increased number of users implied by demographics would in itself correspond to an increase in public expenditure's share of GDP of 0.1 per cent in 2015. The higher number of users reflects a higher birth rate and hence more children in the updated population projections, *cf. DRE.AM2008*.



Source: Statistics Denmark and own calculations.

The evolution of public employment towards 2015 will depend on how resources for public services are allocated between public employment and (net) purchases of goods and services from the private sector. This partly hinges on local decisions made by the individual units of the central government, regions and municipalities. The 2015-plan does not include targets for public employment (and neither did the former 2010-plan).

Based partly on the assumed real spending growth, public employment is assumed to equal 30 per cent of total employment in 2015, i.e. the same share as in 2005 (when cyclical conditions were largely neutral in terms of their impact on the level of employment), cf. *figure 1.4d*. The scenario implies an assumed increase in public employment from approximately 824.000 persons in 2009 to approximately 835.000 persons in 2015 – an increase of approximately 11.000 persons or 1.3 per cent.

The share of social transfer expenditures in GDP depends *inter alia* on cyclical conditions. From 2007 and 2015 transfer expenditures are assumed to increase by 1 percentage point, reflecting in particular the normalisation of the cyclical position and increased expenditures on retirement pension and student grants.

Viewed in isolation, the structural policy requirements concerning employment and working hours in the 2015-plan reduce public consumption's share of GDP by approximately $\frac{1}{2}$ percentage point – due to a higher GDP-level in 2015 – and transfer expenditures by close to $\frac{1}{2}$ per cent of GDP towards 2015, reflecting both higher GDP and lower transfer expenditures.

4.6 Net lending by sub-sectors

Central government finances are projected to deteriorate through 2010, while local governments' finances are assumed to be in balance in the projection period, cf. *table 4.6*. The central government budget balance (net lending) declines from 4.7 per cent

of GDP in 2007 to -1.2 per cent of GDP in 2010. As previously mentioned the estimated budget balance in 2010 is to a large extent based on technical assumptions and includes an estimated one-off expenditure concerning the pension yield taxation of more than 15 billion DKK.

Table 4.5
Public finances by sub-sectors

	ESA	2007	2008	2009	2010	2011	2012	2015
Per cent of GDP								
General government budget balance	S13	4.5	3.0	0.0	-1.2	0.3	0.1	-0.1
Of which:								
Central government	S1311	4.7	3.0	0.0	-1.2	0.3	0.1	-0.1
Local governments	S1313	-0.2	0.0	0.0	0.0	0.0	0.0	0.0
Social funds	S1314	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: It is technically assumed that net lending is balanced with respect to the local government sector as a whole for the period 2008-2015.

Source: Statistics Denmark and own calculations.

Given the assumed normalisation of the activity level and other transitory factors, the central government surplus is expected to be in rough balance by 2015 (-0.1 per cent of GDP).

The finances of local governments should 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 local government block grant. This applies within the framework of the tax freeze, which applies, respectively, for the municipalities as a whole and for the regions as a whole.¹⁰

In individual years there may be local government surpluses or deficits – on a national accounts basis (net lending) – of a certain magnitude. Statistics Denmark's latest figures for public finances in 2007 (published on October 17th 2008) implied a deficit on national accounts basis (net lending) in local governments of 3.4 billion DKK or 0.2 per cent of GDP. In the distribution of the government budget surplus across sectors in table 4.6, the local government budget balance is assumed to balance from 2008.

The *social funds* include the unemployment funds and the employees' wage guarantee fund (LG). Net lending in social funds rounds off to 0.0 per cent of GDP in each of the years 2007-2015.

¹⁰ Following the local government structural reform and considerations related to economic stability and tax freeze complicity, ceilings exceptionally applied to the tax percentage in each municipality in 2006 and 2007.

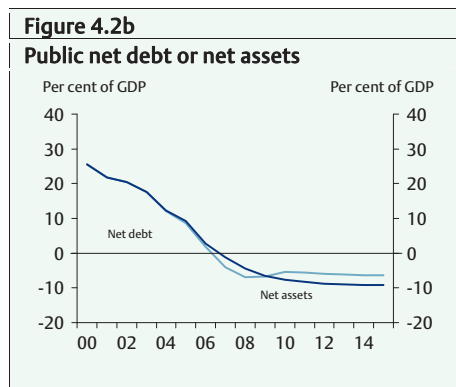
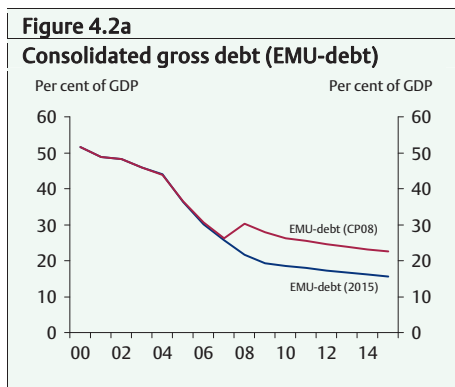
4.7 Public debt

Based on the expected developments in public finances, debt reduction will slow in the coming years. EMU debt is expected to increase as a share of GDP from 2007 to 2008 before declining to 26¼ per cent of GDP in 2010 (corresponding to the level in 2007). The projection implies that EMU debt is reduced to around 22½ per cent of GDP by 2015, cf. table 4.6.

	2007	2008	2009	2010	2011	2012	2015	2007-15
Per cent of GDP								
EMU-debt (end-year level)	26.3	30.3	27.9	26.3	25.4	24.6	22.6	
Change in debt ratio		4.0	-2.4	-1.6	-0.9	-0.8	-0.5	-3.7
<i>Contributions to change in debt ratio:</i>								
- Primary budget balance		-2.4	0.2	1.5	0.0	0.3	0.8	1.3
- Interest payments (net)		-0.6	-0.2	-0.2	-0.3	-0.4	-0.7	-3.5
- Nominal GDP growth		-1.2	-0.7	-0.8	-1.0	-1.0	-0.9	-7.5
- Financial conditions etc. ¹⁾		8.2	-1.6	-2.1	0.4	0.3	0.3	5.9

1) Financial conditions etc. reflect e.g. changes to the Social Pension Fund's stock of government bonds, which are deducted in the EMU-debt. To this should be added the effect on EMU-debt from revenues due to reallocation of government assets (privatization etc.), payment changes in the tax area, issuance price losses, relending to state guaranteed entities and more.

Source: ADAM's databank and own calculations.



Source: Statistics Denmark and own calculations.

In total, EMU-debt is assumed to be reduced by approximately 3¾ per cent of GDP from 2007 to 2015.

The projected developments in the primary balance of the central and local governments tend to increase the EMU-debt ratio by approximately 1¼ per cent of GDP from 2007 to 2015, while the cumulated net interest balance of central and local gov-

ernments' (incl. income from public entities, property and rights) lowers debt by 3½ percent of GDP over the same period, cf. table 4.6.

The projected growth in nominal GDP implies a reduction in EMU-debt of approximately 7½ percentage points, when debt is measured as a share of GDP.

Finally, financial transactions etc. – which includes bond emission losses, re-lending to state guaranteed entities, revenues from reallocations of state assets, and changes to the Social Pension Fund's holding of government bonds – increases EMU-debt by around 6 per cent of GDP from 2007 to 2015.

To foster the Danish pension sector's possibilities to cover long-term exposures, a 30-year government bond was introduced in November 2008. The revenues from this issuance are placed in the central government account in Denmark's National-bank. This issuance of government bonds increases EMU debt in 2008, as central government liabilities increase. The corresponding higher deposit on the central government account does not affect the EMU debt, since assets are not offset in the definition (except for government bonds held by public subsectors).

Furthermore, funds in Den Sociale Pensionsfond (DSP) have been reallocated. As part of the central government debt policy, DSP regulations have been adjusted to allow opportunities to invest in mortgage bonds. The adjustments are intended to give the central government the opportunity to cover interest rate risk via the DSP in connection with the financing of social housing. By giving the central government the opportunity to borrow and invest in the same bonds, the interest rate risk is removed, i.e. possibly higher interest expenditure will be offset by higher revenues.

In combination with lower estimated budget surpluses this implies that EMU debt is reduced at a slower pace than assumed in CP07.

Public sector financial assets are not included in the EMU-debt measure. Statistics Denmark's national accounts-based general government net debt includes all public financial assets and liabilities in state, regions, municipalities and social funds. For instance, state assets related to re-lending to state-guaranteed entities and share holdings are included.¹¹

In 2000, public net debt amounted to 25¾ per cent of GDP. By the end of 2007 public net debt had turned into a net asset position of close to 4 per cent of GDP, cf. table 4.7. The budget projections imply an accumulation of net assets to around 6½ per cent of GDP by 2015. Favourable conditions during the last years – e.g., relatively large North Sea revenues and a comparatively large number of persons in the most active age groups – are thus taken advantage of to maintain fairly high public savings. This enables the financing of possibly higher expenditures in future, when the old-age groups are relatively larger.

¹¹ Public net debt is based on market values (as opposed to EMU-debt). Changes in net debt reflect the public balance (net lending) in national accounts, but are also affected by prices on financial assets and liabilities.

Table 4.7**Different public debt concepts and trends, end-year**

	2000	2007	2008	2009	2010	2011	2012	2015
Per cent of GDP								
EMU-debt	51.5	26.3	30.3	27.9	26.3	25.4	24.6	22.6
Public net debt ¹⁾	25.7	-4.1	-6.9	-6.7	-5.3	-5.6	-5.9	-6.4
Net debt of central government and local governments ²⁾	26.8	-4.0	-6.8	-6.7	-5.3	-5.6	-5.8	-6.3

1) For 2009-15 technically projected in light of the general government budget balance.

2) For 2009-15 technically projected in light of the budget balance of central government and local governments.

Source: Statistics Denmark and own calculations.

Net wealth in the social funds (i.e. the unemployment insurance funds and the employees' wage guarantee fund) amounts to around 0.1-0.2 per cent of GDP for the years 2007-2008. Thus, there is only a marginal difference between the national account figures for total public net debt and net debt of central government and local governments. Net debt is the most relevant measure when assessing the sustainability of public finances.¹²

4.8 Institutional set-up

As previously mentioned, the key guideposts for the planning of public finances and fiscal policy are:

- *Fiscal policy*: Should contribute to economic stability – including by focusing on the fiscal impact on economic activity as measured by the fiscal effect – and sustainable developments in public finances over the longer term, as well as maintaining structural surpluses or balance until 2015, *cf. chapter 2*.
- *Expenditure policy*: The planned growth in real expenditures on public service etc. – public consumption – follows the 2015-plan. As mentioned, the plan contains a guideline for nominal public consumption expenditure of 26½ per cent of cyclically-adjusted GDP in 2015.
- *Tax policy*: The tax freeze is the cornerstone of tax policy. The Tax Commission, which was set up in January 2008 in order to prepare models for a tax reform, finishes this work in February 2009, *cf. chapter 2*.

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 budgets that are specified according to other accounting principles, classifications etc. than the national accounts. To be able

¹² The definitions concerning public net debt are consistent with those concerning net lending in the national accounts.

to compare the actual budgeting to the fiscal policy objectives, Statistics Denmark provides a detailed specification of public budgets on a national accounts basis.

The budget process and agreements on the economy of local governments

The annual process of budgeting in the central government begins in early spring, as the government determines the overall allocation of real public consumption growth to expenditure areas, including the scope for local government public consumption. On this basis, expenditure ceilings are reported to the individual ministries.

The individual ministries allocate the reported expenditure ceilings between government administrations and institutions etc., who draw up a budget complying with the assigned expenditure levels. The budget proposal is subsequently compiled from the individual ministerial contributions.

Part of the central government cost-budget rests on fixed expenditure allocations. This applies for central government current expenses and some grants. The fixed expenditure allocations imply that the individual ministries are to a large extent allowed to make reallocations within the determined expenditure ceiling. The fixed expenditure allocations do not apply for cyclical expenditures, statutory transfer expenditures, interest expenditures on central government debt and EU-contributions.

In June, the central government enters an agreement with the local governments agree on their overall expenditure and tax levels and guidelines for political and economic priorities. The agreements are collective and apply for all municipalities and all regions as a whole, respectively. The agreement is not legally binding.

The framework for agreements on the economy of the municipalities has been adjusted in the spring 2008 in order to ensure that the budget set up induces local government budgetting in line with the tax freeze and the agreements with the government, *cf. chapter 4.5*.

The government presents the budget proposal for the coming year in August.¹³ Subsequently, the budget proposal is subject to political reading in the Danish Parliament. Typically, a political agreement on the fiscal bill is reached between the government and one or more political parties in November, and the fiscal bill is thus normally adopted in December.

During the fiscal year the ministries are responsible for monitoring expenditure 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 for example in relation to cyclical expenditures. During the fiscal year the ministries prepare two or three reports on expenditure developments to the Ministry of Finance.

¹³ The fiscal year follows the calendar year.

The Ministry of Finance therefore 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. The public accounts are usually available in April, i.e. about 4 months after the end of the fiscal year.

5. Long-term projection and fiscal sustainability

5.1 Projection principles and effects of the 2006 pension reform

The long-term projection underlying Convergence Programme 2008 basically reflects unchanged structures in the economy from 2015 and unchanged policies. The latter includes the effects of already decided initiatives reaching far ahead in time. Hence, the programme scenario takes into account the projected effects of the Welfare Reforms (notably the pension reform, which essentially takes effect from 2019), the Quality Fund for public investments until 2018 and the objectives in the energy and climate policy areas covering the period to 2020 (and beyond).

No political decisions have been made with respect to the setting of overall fiscal priorities after 2015.

Fiscal sustainability implies that the tax and expenditure priorities that have been decided up to 2015, and the public expenditure path that occurs in the projection thereafter, can be financed without raising the tax burden and with net public debt ending up stable as a share of GDP in the (very) long term. Hence, the determination of fiscal sustainability can be seen as “consistency check” of whether the policies planned until 2015 can be sustained after 2015, given unchanged taxes and public service standards etc. In this vein, the projection for the period after 2015 reflects an extrapolation of the economic structures as they appear in 2015, and not an actual forecast.

The following *calculation principles* are applied after 2015:

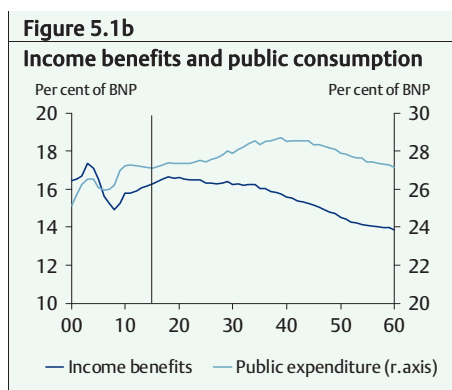
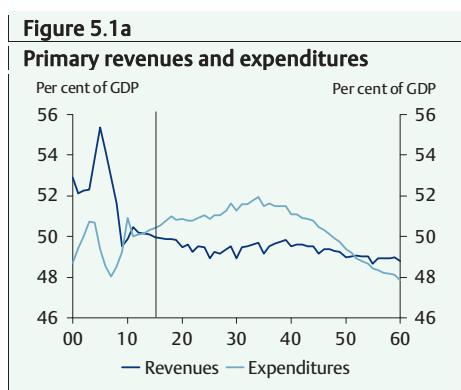
- Public consumption expenditure is projected according to the principle that nominal expenses *per user* grow in line with wages and the number of users of public services evolves in line with the calculated impact of changing demographics (the so-called demographic “pull” or demographically-induced “demand” for public services). 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 but providing tax-financed services) can be unchanged relative to the number of users of public services.
- Income benefits are assumed to rise in line with private sector wages such that income replacement rates remain constant (in case of e.g. job loss or retirement).
- Labour participation rates, and the propensities at which various income benefits are received, are assumed constant by age, gender and country of origin. The overall (structural) unemployment rate is constant. Further included is a contribution to employment from a gradually higher level of education in the workforce, and for immigrants also an adjustment whereby employment rates increase with the average number of years of residence in Denmark. The assumed

effects of the Welfare Agreement beyond 2015 are added to these basic assumptions. This mainly concerns the pension reform, 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.

- The projections of public investments are derived from the principle that the ratio between the gross public capital stock and public production of goods and services is constant from 2018, when the Quality fund ends.
- Public subsidies and net foreign transfers are constant relative to GDP.
- The tax burden is unchanged. Hence, tax rates remain constant and excise duties etc. are 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 2007.
- A gradual improvement in energy efficiency is assumed in both consumption and production. The estimated fiscal consequences of the objectives in the energy and climate strategies are also included. This mainly concerns lower revenue from energy taxes because of lower energy consumption relative to GDP.

The post-2015 paths for primary revenues and expenditures as shares of GDP are mainly determined – aside from the Welfare Agreement – by higher expenditure for health and elderly care owing to demographics, increasing tax revenues from private pension schemes and declining revenues from the North Sea activities, as oil and gas reserves are gradually depleted, *cf. figures 5.1-2.*

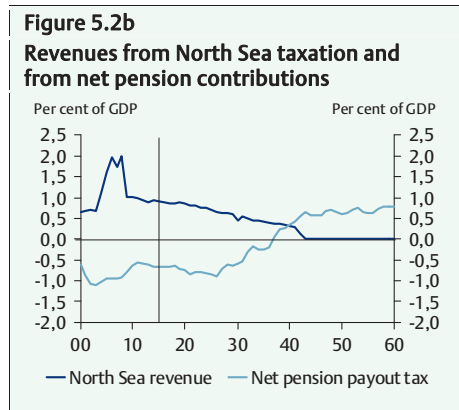
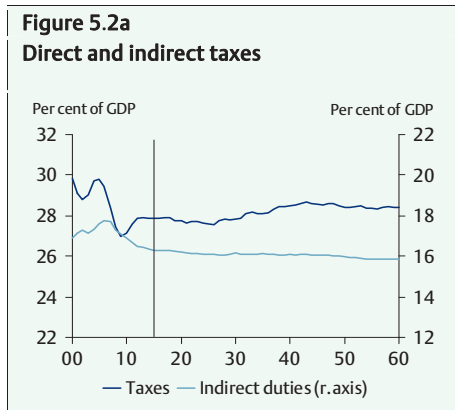
In the projection, primary revenues are fairly constant relative to GDP after 2015, while primary expenditures are rising until about 2030-40 and decline thereafter, *cf. figure 5.1a.*



Source: Statistics Denmark and own calculations.

The increase in expenditures up to 2030-40 mainly reflects higher expenditures for health and elderly care related to demographics. Hence, total public consumption accounts for an increasing share of GDP from 2015 to about 2040, which is when the most care-intensive age groups are largest relative to the labour force, *cf. figure 5.1b*. After 2040 the public consumption-to-GDP ratio subsides, mainly as a consequence of the ongoing “indexation” of the age thresholds for early retirement and old age pension that enlarge the labour force and thereby GDP (without affecting real public service spending in the projection). According to the population projection, the cohorts of high age are relatively smaller after 2040.

Expenditure on income benefits increases relative to GDP until about 2019, when the adjustment of pension age thresholds in the Welfare Agreement begins to take effect, *cf. figure 5.1b*. As the initial 2-year increase of the age thresholds for VERP and public pension is phased in (during 2019-22 for the VERP age and 2024-27 for the pension age) and as the indexation of the age thresholds starts taking effect (from 2025 for the VERP age and 2030 for the public pension age), expenditure on income benefits is projected to decrease relative to GDP. Over the long term, this mainly owes to lower pension expenditure since the pension age increases in line with the mean remaining lifetime for 60-year olds thereby, in conjunction with demographic factors, implying gradually fewer pensioners compared to the labour force – and hence less pension expenditure relative to GDP. At the same time, the maturing of the labour market pension schemes over time means more pensioners will have income over and above their public pension, which reduces government outlays for pension supplements and housing allowances.



Note: Direct taxes in figure 5.1a do not include corporate taxes from corporations subject to hydrocarbon tax. Indirect taxes in figure 5.2a and net pension payouts in figure 5.2b are shown as a 3-year moving average.

Source: Statistics Denmark and own calculations

The revenue from direct taxes (excluding corporate taxes from companies subject to hydrocarbon tax) is relatively constant as a share of GDP from 2015 to about 2030, and increase thereafter, *cf. figure 5.2a*. The higher share after 2030 mainly reflects the

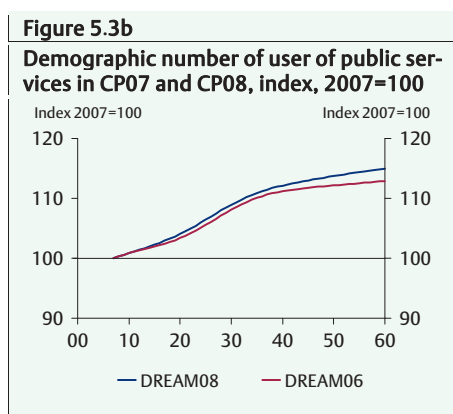
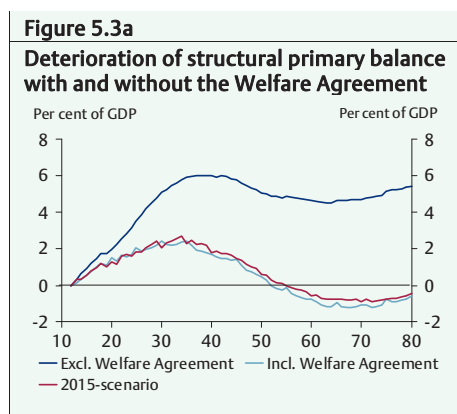
effect of increasing (net) private pension payouts in line with the maturing of the labour market pension schemes (since pension disbursements are taxed), *cf. figure 5.2b*. The revenues from the North Sea activities decline relative to GDP before reaching zero in about 2040 as the oil and gas resources are gradually depleted.

The revenue from indirect taxes – which declines relative to GDP between now and 2015 mainly as a consequence of the nominal principle of the tax freeze and objectives in the Energy Agreement to reduce energy consumption (with a primary target reduction pencilled in for 2011) – continues to decrease also after 2015. This mainly owes to declining energy consumption relative to GDP and a higher share of renewable energy that reduces the revenue from energy taxes. Energy use is also decreasing relative to GDP after 2025, *cf. annex 3*.

Effects of the pension reform in the 2006 Welfare Agreement

The Welfare Agreement passed in 2006 provides increased assurance against substantial fiscal imbalances developing over the longer run as life expectancy and the number of elderly citizens is set to increase, *cf. CP06 and CP07*.

Without the initiatives in the Welfare Agreement, the primary balance for central and local governments would deteriorate by up to 6 per cent of GDP from 2012 (the year in which the cycle is assumed neutral) to about 2035, *cf. figure 5.3a*. This mainly reflects significantly higher pension expenditure and lower employment in the absence of the Welfare Agreement. The initiatives in the Welfare Agreement – primarily the pension reform – limit the deterioration of the primary balance from 2012 to 2035 to about 2 per cent of GDP, and in conjunction with relatively smaller cohorts of high-age implies that the primary balance improves subsequently in the projection.



Source: Own calculations.

CP08 is based on the latest population projection from DREAM 2008. Compared to the population projection underlying CP07, the population projection is by and large unchanged in terms of the projected increase in longevity. Meanwhile, the projection

implies a higher number of births and younger citizens and over the longer term a larger labour force and population. The larger population implies a larger demographic “pull” on public services, *cf. figure 5.3b*.

The expected increase in longevity in the current projection is broadly in line with the projections of e.g. Statistics Denmark and the UN, and also with the population scenario applied in the European Commission’s evaluation of long-term sustainability (*The Long-term Sustainability of Public Finances in the European Union, European Commission, 2006*).

The Welfare Agreement addresses the long run fiscal challenges stemming from longer life expectancy, which in the absence of the reforms would more or less automatically lead to more years in retirement. The Welfare Agreement also helps to finance increased public spending on health and elderly care etc. that follows from increased life expectancy, because the reform strengthens employment, GDP and tax revenues, *cf. CP07*.

Around four fifths of the deterioration in public finances that would otherwise be associated with increasing life expectancy from today’s level is estimated to be offset by the agreed indexation of the age thresholds in the pension system in line with the change in longevity and, in the same vein, improving health, *cf. CP07*. On top comes the effects of the 2 year increase in the VERP and pension age limits that is phased in during 2019-22 and 2024-27, respectively. This 2 year increase is independent of any increases in longevity from today’s level, and can be seen in the light of the increase in lifetime expectancy for 60-year olds which has occurred since around 1995.

5.2 Fiscal sustainability and the required public surplus

As explained, a key fiscal objective is to ensure sustainable policies given the set of assumptions applied with respect to interest rates, life expectancy and so on. As pointed out, this means that fiscal policies – including the level of taxation – can be sustained after 2015 without leading to an uncontrolled rise in the net debt of central and local governments.

The sustainability calculation thus provides a test that fiscal policies are consistent over time, such that – given the underlying assumptions – no major adjustment needs arise after 2015. The computational principles after 2015 do not represent fiscal targets. No political decisions have been made with respect to overall fiscal priorities after 2015.

Table 5.1 illustrates that fiscal policies – under the assumptions made – largely meet the requirement of fiscal sustainability.

Essentially, the breakdown in table 5.1 shows that the primary surplus of central and local governments in 2007 corresponds to the necessary – or sustainable – level of

savings required to finance the interest burden on public net debt – which is currently about 0¹ – and the future net obligations that result from population ageing and other factors (including the Welfare Agreement and absent new policy changes)².

Table 5.1	
Fiscal sustainability in 2007	
	Annuity
Per cent of GDP	
1. Central and local government primary budget balance, structural	3.0
2. Interest burden on public net debt	0.0
3. Contribution from increase in net expenditures, structural	-3.1
4. Sustainability indicator (1-2-3)	-0.1

Source: Own calculations.

In 2007, the structural primary surplus of central and local governments is estimated at 3.0 per cent of GDP, *cf. table 5.1 (row 1)*. This surplus – which is corrected for e.g. cyclical effects on public finances – may be seen as the current surplus needed to finance the interest burden on debt and rising net obligations of the public sector.

The net debt (net asset) position of central and local governments carries an interest burden of 0 per cent of GDP, *cf. table 5.1 (row 2)*. The interest burden consists of the part of interest expenditures which is not eroded by nominal GDP growth, and which must be financed to prevent public debt from rising relative to GDP.

By converting the projected path for the structural primary balance – in terms of changes relative to the base year 2007 – to a fixed annual amount (perpetual annuity), the future net obligations of the public sector correspond to a permanent net expenditure increase of around -3.1 per cent of GDP in 2007, *cf. table 5.1 (row 3)*³.

Overall, the sustainability indicator thus amounts to -0.1 per cent of GDP in CP08.

¹ At the start of 2007, net debt was 1¼ percent of GDP. At the end of 2007, net debt had been turned into a net asset position of about 4 per cent of GDP. Net interest revenues accounted for -0.4 per cent of GDP in 2007, i.e. interest payments exceeded interest income by about 0.4 per cent of GDP.

² The calculated sustainability indicator basically corresponds to the s2-indikator in the EU Commission's calculations of fiscal sustainability, but with the Ministry of Finance's calculation model and –principles. The calculation principles deviates from the ones used in *The Long-term Sustainability of Public Finances in the European Union, European Commission, 2006* on a number of points. This primarily concerns: a) the calculation of the structural balance in the base year 2007 is based upon the Ministry of Finance's method, which among other things corrects for temporarily high revenues from the tax on pension yield and on activities in the North Sea (in total, corrections for special items amounts to -0,1 per cent of GDP in 2007, *cf. chapter 4*); b) includes the effects of the Welfare Agreement, which is decided policy; c) takes account of tax revenues from rising future net pension payouts; d) uses the population projection provided by DREAM (instead of the EU projection); and e) applies a different interest rate assumption in the long term. In addition, there are differences with regard to e.g. the time horizon of the calculations, the applied debt and primary budget balance definitions etc.

³ The *actual* primary balance deteriorates by 5 per cent of GDP converted into a fixed annual amount. Around half reflects the assumed normalization of the cyclical conditions and other temporary factors. These temporary factors include contributions to the primary balance from special public revenues that may fluctuate sharply from year to year and not necessarily closely related to the output gap, e.g. pension yield taxation, corporate taxes etc.

Appendix 1. Comparison with Convergence Programme 2007

A1.1 Changes to GDP-growth and public finances since CP07

Compared to CP07, annual GDP growth is generally lower in the CP08 projection during 2007-09 and higher during 2010-12, *cf. table A1.1*. Hence, the projection in CP08 reflects weakened short-term growth prospects both at home and abroad, in part as a consequence of the financial turmoil. Meanwhile, cyclical conditions are assumed to normalize during 2011-12, which is supported for instance by the expected cyclical upswing abroad and low interest rates in 2009-10.

Table A1.1							
Comparison with CP07							
	ESA	2007	2008	2009	2010	2011	2012
GDP growth (per cent)	B1*g						
CP07		2.0	1.3	1.1	0.5	1.1	1.4
CP08		1.6	0.2	-0.2	0.7	1.9	1.7
Change		-0.3	-1.1	-1.2	0.2	0.8	0.3
Output gap (per cent of GDP)							
CP07		2.1	1.8	1.0	0.5	0.0	0.0
CP08		2.5	1.9	0.6	-0.7	-0.4	0.0
Change		0.4	0.1	-0.4	-1.2	-0.4	0.0
Public balance (per cent of GDP)¹⁾	EDP B.9						
CP07		3.8	3.0	2.0	1.2	0.8	0.7
CP08		4.5 ²⁾	3.0	0.0	-1.2	0.3	0.1
Change		0.7	0.0	-2.0	-2.4	-0.5	-0.6
Public debt (per cent of GDP)³⁾							
CP07		25.6	21.6	19.2	18.6	18.0	17.3
CP08		26.3	30.3	27.9	26.3	25.4	24.6
Change		0.7	8.6	8.7	7.7	7.4	7.3
Public net assets (per cent of GDP)							
CP07		1.2	4.3	6.5	7.6	8.2	8.7
CP08		4.1	6.9	6.7	5.3	5.6	5.9
Change		2.9	2.6	0.2	-2.3	-2.6	-2.8
1)	Excl. ATP.						
2)	The most recent EDP-reporting from Statistics Denmark in October, based on Economic Survey, August 2008, showed a surplus of about 4.9 per cent (based on the EDP-definition).						
3)	Excl. ATP (i.e., no deduction of ATP's holdings of central government bonds).						
Source: Own calculations.							

Based on preliminary data, the general government budget surplus – using the EDP-definition – was 4.5 per cent of GDP in 2007 and thus higher than the estimated surplus of 3.8 per cent of GDP in CP07¹. The higher public surplus in 2007 is partly related to higher revenues from corporate taxes and income taxes.

The fiscal surplus in 2008 of about 3 per cent of GDP is largely as expected in CP07, but now rough balance is expected for 2009 and the estimates for 2009 and 2010 are significantly lower than expected in CP07. This is in part related to lower revenues from pension yield taxation and corporate taxes. In addition, public consumption expenditure is higher, *cf. chapter 4*.

The lower output gap, which is negative during 2010-11, contributes to reducing the public balance during 2009-11 compared to the assumptions in CP07.

Altogether the scenario in CP08 implies a smaller reduction of the EMU debt from 2007 to 2012 (measured in per cent of GDP). The EMU debt is hence reduced by about 1¾ per cent of GDP during 2007-12, while the debt ratio in CP07 was reduced by about 8¼ per cent of GDP over the same period.

This partly reflects the reduced surpluses up to 2012, but also that the debt is increased by about 4 per cent of GDP from 2007 to 2008 despite an estimated fiscal surplus of about 3 per cent of GDP for 2008. The increase in EMU debt from 2007 to 2008 is partly related to the opening of a 30-year government bond in November 2008 in order to improve the ability of the Danish pension sector to cover risks in Danish currency. The larger government bond issuance raises EMU debt as government liabilities increase. The correspondingly larger government deposits do not affect the EMU debt, as these assets are not offset in the specification (except for government bonds held by public sector entities).

The public net assets in 2007 of about 4 per cent of GDP increase by about 1¾ of GDP up to 2012 in CP08. Hence, the increase in public net assets is thereby assumed – as is the reduction of the EMU debt – to go on at a slower rate than assumed in CP07, where the increase in public net assets from 2007 to 2012 was about 7½ per cent of GDP.

Compared to the scenario in CP07 new information is included in CP08 in a number of areas. The new assumptions in CP08 include notably an updated economic forecast, an updated population projection and the implementation of the Job Agreement 2008, initiatives to reduce sickness absence and the Energy Agreement 2008. The effects on the sustainability indicator of revised technical assumptions etc. are described in chapter 1.

¹ The most recent EDP-reporting from Statistics Denmark in October, based on *Economic Survey, August 2008*, showed a surplus of about 4.9 per cent (based on the EDP-definition).

Appendix 2. Sensitivity analysis

A2.1 Cyclical risks

Convergence Programme 2008 (CP08) assumes low output growth in the period 2008-10, resulting in a negative output gap in 2010. In the years that follow, GDP growth is assumed to be sufficient to close the output and unemployment gaps by 2012. Rising unemployment engenders lower wage inflation from 2008 to 2011. Further ahead, the cycle is assumed to be neutral in the Convergence Programme.

The uncertainty about economic developments over the next couple of years is unusually high. This reflects in particular the risk of continued financial instability and tighter credit conditions related to the banking sector's need to consolidate, which may counter the positive demand effects normally to be expected from lower monetary policy rates. Continued tensions in the financial system may thus make it difficult for otherwise well-functioning and credit-worthy entities to finance their activities, while the softening of house prices may be reinforced. Continued tensions may also impede the possibilities for lowering the Danish interest rate spread. In addition, general uncertainty about the depth and duration of the international cyclical downswing, as well about the effects of the many financial-sector initiatives that are being implemented or planned in many countries, is very high.

The following illustrates possible effects on e.g. public finances in Denmark of either lower or higher foreign growth, as well as alternative assumptions about Danish and foreign interest rates, including a higher Danish interest rate spread than in the central projection.

In CP08 export market growth is assumed to be negative in 2009, followed by increasing growth up to 2011 after which constant growth is assumed. In *table A2.1* the effect of the export market assumptions are illustrated in two alternative scenarios.

In the scenario with lower foreign growth, export market growth in 2009 and 2010 is 1 per cent lower than in the central CP08-scenario, followed by a gradual return to trend growth in 2012. In this scenario unemployment is higher and GDP growth is weaker relative to CP08. The public balance is weakened by 0.1 per cent of GDP in 2009 and 0.3 per cent in 2010 and 2011. Broadly, the structural public balance is unaffected in the alternative scenario and changes to the public balance therefore reflect the effects of automatic stabilisers.

Table A2.1			
Alternative scenario: Foreign growth			
	2009	2010	2011
CP08-scenario			
Real GDP growth	-0.2	0.7	1.9
Unemployment, per cent of work force	2.4	3.4	3.7
Public balance, per cent of GDP	0.0	-1.2	0.3
EMU-debt, per cent of GDP	27.9	26.3	25.4
Lower foreign growth			
Real GDP growth	-0.4	0.5	2.0
Unemployment, per cent of work force	2.4	3.6	3.9
Public balance, per cent of GDP	-0.1	-1.5	0.0
EMU-debt, per cent of GDP	28.1	26.8	26.2
Higher foreign growth			
Real GDP growth	0.0	1.0	1.6
Unemployment, per cent of work force	2.3	3.2	3.5
Public balance, per cent of GDP	0.1	-1.0	0.4
EMU-debt, per cent of GDP	27.8	25.8	24.9
Source: own ADAM-calculations.			

The scenario with higher foreign growth is based on export market growth being 1 per cent higher in 2009 and 2010 than in CP08. In the scenario with higher export market growth, GDP growth is higher than assumed in 2009 and 2010 while GDP growth in 2011 corresponds to trend GDP growth. Public finances are strengthened by 0.1 per cent of GDP in 2009 and 0.2 per cent in 2010.

Interest rate developments are also highly uncertain. For instance, more negative cyclical developments in Europe may lead to larger interest rate reductions in the euro area than assumed, while continued financial instability may force the Danish Central Bank to maintain a high interest rate spread to the euro countries to support the fixed exchange rate.

Table A2.2			
Alternative scenario: Interest rate assumptions			
	2009	2010	2011
CP08-scenario			
Real GDP growth	-0.2	0.7	1.9
Unemployment, per cent of work force	0.0	-1.2	0.3
Public account, per cent of GDP	0.2	-1.0	0.4
EMU-debt, per cent of GDP	27.9	26.3	25.4
Lower interest rates (in the Euro area and Denmark)			
Real GDP growth	0.0	1.2	1.9
Unemployment, per cent of work force	0.1	-0.9	0.4
Public account, per cent of GDP	0.4	-0.7	0.6
EMU-debt, per cent of GDP	27.8	25.7	24.8
Higher interest rates (increased interest rate spread)			
Real GDP growth	-0.4	0.4	2.2
Unemployment, per cent of work force	-0.1	-1.5	0.3
Public account, per cent of GDP	0.1	-1.3	0.5
EMU-debt, per cent of GDP	28.1	26.7	25.7
Source: Own ADAM-calculations.			

In *table A2.2* two scenarios illustrate how alternative assumptions about interest rates could affect the CP08 projection.

In the low interest rate scenario it is assumed that further monetary easing results in foreign interest rate reductions of $\frac{1}{2}$ percentage point in order to sustain the assumed foreign activity in 2009 and 2010. It is also assumed that the interest rate spread is unaltered. In this scenario domestic activity is higher and the public balance is improved by 0.1 per cent of GDP in 2009 and 0.3 per cent in 2010. The effects of lower monetary policy rates depend on the extent to which the consolidation of the banking sector does not lead to tighter credit conditions and larger spreads between the central bank and market interest rates.

In a scenario in which the Danish central bank has to support the fixed exchange rate via a larger interest rate spread, it is assumed that the spread is temporarily increased by $\frac{1}{2}$ point in 2009. The domestic interest rate increase implies lower GDP-growth, higher unemployment and a worsening of the public balance by 0.3 per cent of GDP in 2010 compared to the CP08-scenario.

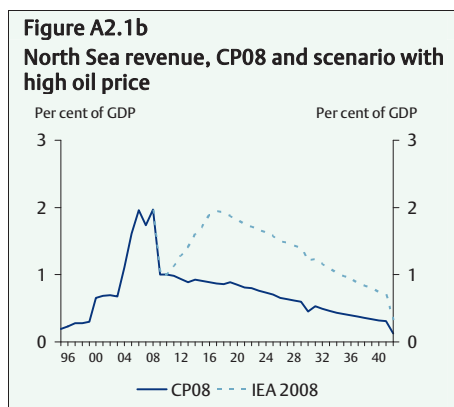
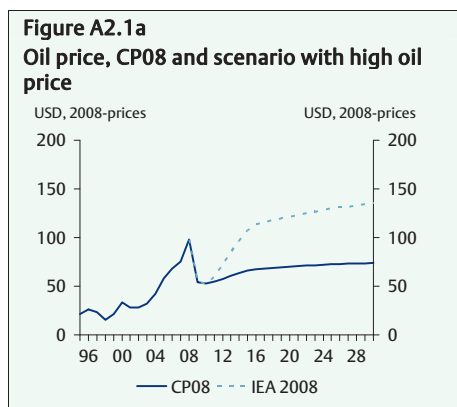
A2.2 Scenario with high oil price (IEA2008) – long run effects

In the central scenario underlying CP08 the oil price is assumed to be 55 \$ per barrel in 2009-10 (current prices) and based on the IEA 2007 projection the oil price is as-

sumed to increase gradually to 66 \$ per barrel in 2015 (measured in 2008-prices). Towards 2030 the oil price is assumed to reach 74 \$ per barrel in light of growing demand and long run scarcity. This scenario is above the current crude oil price, which is around 40-50 \$ per barrel.

The International Energy Agency (IEA) published a new projection in November 2008, in which the estimate for the crude oil price in 2015 has been revised upwards to 108 \$ per barrel (2008-prices), while the estimate for 2030 has been revised upwards to 135 \$ per barrel (2008-prices). This corresponds to an upward revision of about 60 and 80 percent, respectively, relative to the IEA projection from 2007, *cf. figure A2.1a*. The IEA 2008 projection should be viewed in light of very volatile oil prices in recent years including a peak in the summer of 2008 at around 145 \$ per barrel.

Given the large drop in the oil price since the summer of 2008 and current prices of around 40-50 \$ per barrel, a cautious approach has been adopted to base the central scenario in CP08 IEA's oil price projection from 2007. This annex illustrates the public finance impact of the IEA 2008 oil price projection as an alternative scenario.



Source: IEA2008, Ministry of Taxation and own calculations.

If the IEA 2008 projection is incorporated in the CP08 scenario, the North Sea revenue will be substantially higher according to provisional and rough estimates, *cf. figure A2.1b*. The current estimates do not incorporate possible inducements of a higher oil price to raise production, nor do they include that higher investments in the sector would lead to higher tax depreciations thereby lowering tax payments.

The sustainability indicator improves by 0.2 percent of GDP as a result of the higher North Sea revenue and thus amounts to 0.1 percent of GDP. The structural balance in 2015 improves to 0.2 percent of GDP, *cf. table A2.3*. The scenario incorporates increased incentives to use energy efficiently and hence a reduction in the revenue

from energy taxes. Moreover, the estimated additional costs of fulfilling the goal to reduce CO₂-emissions are lower in this scenario.

Table A2.3		
CP08-scenario and scenario with a higher oil price as in IEA08		
	CP08	CP08 incl. IEA2008
Percent of GDP BNP		
Sustainability indicator	-0.1	0.1
Structural fiscal balance in 2015	-0.1	0.2

Source: Own calculations.

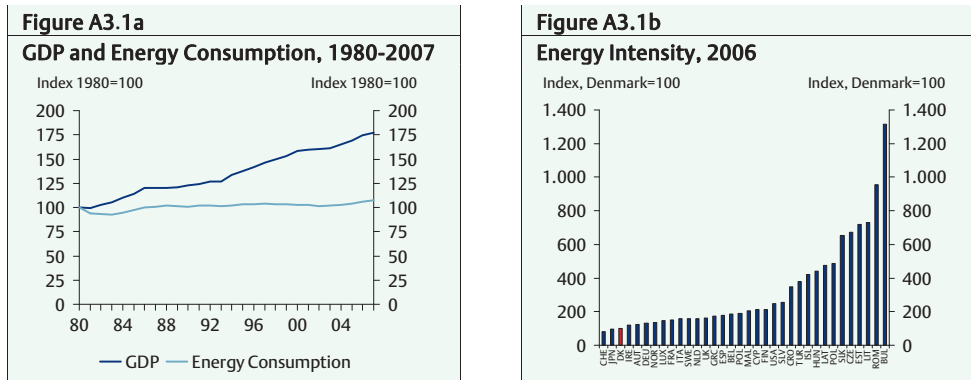
In this vein, the higher oil price leads to higher energy prices causing lower energy consumption. In the high oil price scenario, energy consumption declines by about 9 percent from 2006 to 2020, which is 5 percentage points more than in the CP08 scenario. The larger reduction in energy consumption compared to CP08 results in a further reduction of the revenue from energy taxes. The estimated energy consumption in the high price scenario is based on the Danish Energy Authority's projections dated July 2008, which included a scenario with an oil price of 100 \$ per barrel. Corrections are then made for the difference in the oil price assumptions in this projection relative to the IEA 2008 projection.

Finally, higher oil prices reduce the relative price of renewable energy, including biomass fuels and wind power. This causes an increase in the share of renewable energy sources compared to the CP08 scenario and lower use of fossil fuels. The associated reduction in CO₂-emissions reduces the estimated (additional) costs of the assumed purchase of CO₂-credits in order to fulfil the goal of a 20 percent reduction in the CO₂-emissions in the non-ETS sectors from 2005 to 2020, *cf. appendix 3*.

Appendix 3. Energy and Climate Objectives

A3.1 Introduction

During the last 25 years, energy consumption has remained almost constant while production (GDP) has grown by approximately 75 per cent, *cf. figure A3.1.a*. This reflects continued improvements in energy efficiency, mainly due to technological advances and energy policies which, for example through taxes on energy consumption, have strengthened incentives for efficient energy use. Partly as a result of energy policies, Denmark is today one of the most energy-efficient countries, *cf. figure A3.1.b*.



Note: Energy intensity is defined as energy consumption divided by GDP, adjusted for purchasing power parity.
 Source: ADAM, Danish Energy Agency and Eurostat.

Ambitious goals have been set out for energy and climate policies. In this vein, one long-term objective is to make Denmark fully independent of fossil fuels such as oil, coal and gas. As one step in that direction, it has been decided in the February 2008 Agreement on Danish Energy Policy that:

- Towards 2020 gross energy consumption¹ is to decrease by 4 per cent in total compared to 2006. Towards 2011 the objective is that gross energy consumption should decrease by 2 per cent compared to 2006. This corresponds to a decrease from 863 Petajoule (PJ) in 2006 to 846 PJ in 2011 and 828 PJ in 2020.
- It is the objective that 20 per cent of gross energy consumption should stem from renewable energy in 2011.

As part of the agreement a tax exemption until 2012 for electric cars has, for example, also been decided and also a tax realignment ensuring that CO₂ taxes on

¹ Gross energy consumption equals actual energy consumption (incl. conversion and transmission losses) adjusted for foreign trade in electricity.

activities not covered by the emission trading scheme (ETS) in general corresponds to the expected CO₂ quota price. The quota price for 2008-2012 is estimated at 150 DKR per ton, *cf. the Agreement on Danish Energy Policy*. Besides, the yearly objectives for energy savings are raised to 1.5 per cent of final energy consumption² corresponding to 10.3 PJ annually against the previous objectives for reductions of 7.5 PJ annually towards 2013 and 5.5 PJ annually hereafter.

To achieve this savings objective the obligations of the energy companies, among others, are raised as they have to save 5.4 PJ yearly instead of 3 PJ as from 2010. In addition a tightening of building regulations implies that energy consumption in new buildings are to be reduced by at least 75 per cent in 2020 at the latest (with intermediate objectives in 2010 and 2015, respectively). Finally, the Agreement on Danish Energy Policy has earmarked funds to information campaigns which are also to help meet the savings objective.

Towards 2013 it is assumed that the objective of yearly energy savings of 1.5 per cent is achieved as a result of the obligations of the energy companies, information campaigns and tightening of the building code requirements. After 2013 it is expected that more initiatives are needed in order to achieve the savings objective. The key energy savings objective relates to the decrease in gross energy consumption compared to the 2006-level, while the energy savings objective of 1.5 per cent per year relate to a hypothetical scenario which also incorporates increased energy efficiency due to technological progress, and where the effect of energy savings in a given year are assumed to gradually decrease in subsequent years³.

In addition, targets will be laid down at the EU-level. The EU Commission's proposal for a climate and energy package, which is expected to be adopted in December 2008, includes a proposal concerning Denmark that 30 per cent of *final* energy consumption be composed of renewable energy by 2020⁴. In addition, the Commission's proposal suggests that Denmark reduce CO₂ emissions in non-ETS sectors by 20 per cent in 2020 compared with 2005.

The projections in CP08 incorporate fiscal effects due to the February 2008 Agreement on Danish Energy Policy as well as the mentioned international objectives in that area. Costs of making Denmark independent of fossil fuels in the long run are not taken into account. The public finances are primarily affected by the energy and climate policy through lower revenue from energy taxes. The tax revenue

² Final energy consumption corresponds to gross energy consumption where conversion losses and energy consumption related to extraction of energy and refining have been subtracted. Thus, final energy consumption corresponds to energy consumption supplied to the final users in households and trades and industries.

³ Subsequently, it will be uncertain to evaluate to what extent the annual savings objectives have had the anticipated effect on energy consumption as there will, among others, be uncertainty about how energy consumption would have developed in absence of the initiatives. An evaluation of the savings measures will be prepared.

⁴ This objective is in accordance with the government's objective that 30 per cent of gross energy consumption is composed of renewable energy in 2025.

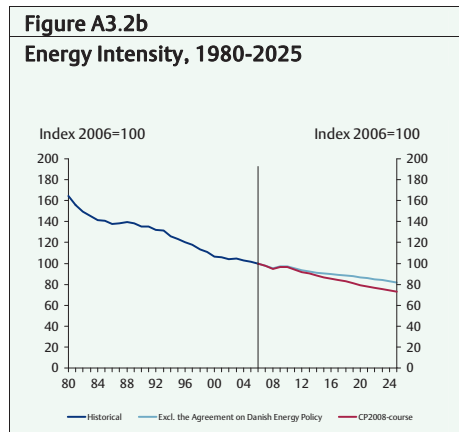
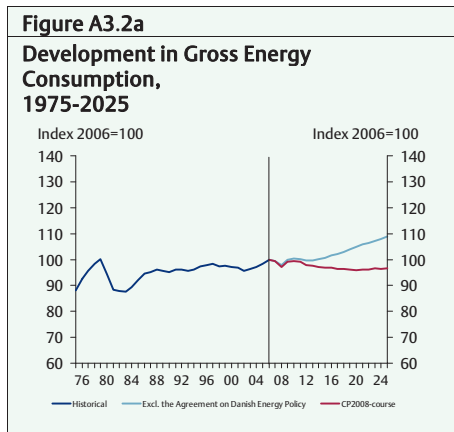
decreases because lower energy consumption and a larger share of renewable energy will lead to smaller use of fossil fuels which in general are taxed at a higher rate than other types of consumption. The calculations in CP08 only relate to estimates of the effects on public finances of energy and climate objectives etc. – i.e. the calculations do not concern estimates of the overall economic advantages and disadvantages or other gains from the energy and climate effort.

A3.2 Forecast of Energy Consumption and Energy Intensities

The projected development in energy consumption is based on the latest forecast from the Danish Energy Agency from July 2008. In this forecast which contains measures of the Agreement on Danish Energy Policy it is estimated that gross energy consumption decreases by 1.2 per cent in 2011 compared to 2006 while it decreases by 2.8 per cent towards 2020. The Danish Energy Agency mentions that forecasts of energy consumption in the long-term are associated with a considerable amount of uncertainty and rest on a number of technical assumptions.

The Danish Energy Agency's forecast rests among other things on assumptions about oil prices etc. at the time the projections were made as well as macroeconomic assumptions from the 2015-plan from August 2007. On the basis of updated assumptions the CP08 incorporates model based estimates in relation to the forecast of the Danish Energy Agency in order to take the effect on energy consumption from changed assumptions into account.

The updated assumptions imply that gross energy consumption decreases by approximately 1 per cent from 2006 to 2011 and by approximately 4 per cent from 2006 to 2020, cf. figure A3.2a and table A3.1.



Note: The energy intensity is calculated as gross energy consumption divided by GDP.

Source: Energy Statistics, the Danish Energy Agency, ADAM and own calculations based on the forecast of the Danish Energy Agency, July 2008.

It is emphasized that such a long-term forecast of energy consumption is associated with a great amount of uncertainty, and the amount of uncertainty is increasing in the forecast period. The uncertainties relate among other things to the assumptions about technological development, economic growth and energy prices which may develop differently than assumed.

Table A3.1		
Growth in Gross Energy Consumption incl. Measures of the Agreement on Danish Energy Policy		
	Danish Energy Agency	CP08
2006-2020	-2,8	-4
2006-2011	-1,2	-1

Note: Gross energy consumption corresponds to actual energy consumption (incl. conversion and transmission losses) adjusted for fuel consumption related to foreign trade with electricity.
Source: The Danish Energy Agency and own calculations on the basis of the forecast of the Danish Energy Agency, July 2008.

The development in energy consumption in the years to come thereby reflects a continuation of the historical trend of declining energy intensity, cf. *figure A3.2b*. Energy intensity indicates the level of energy consumption in relation to the level of economic activity. Therefore, declining energy intensity implies a gradually lower level of energy consumption for a given level of activity.

A3.3 Effects on Public Finances

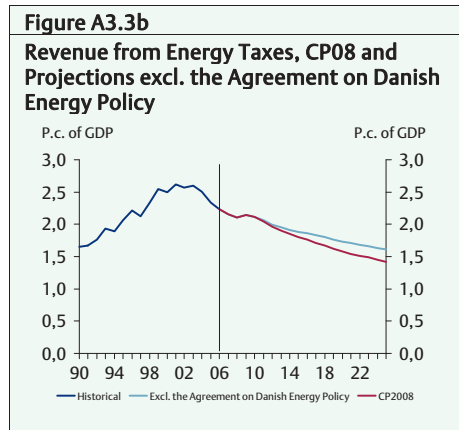
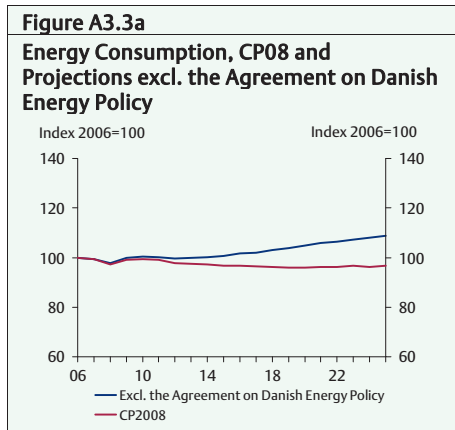
In the forecast energy consumption decreases while average real annual GDP growth makes up 1½ per cent towards 2025. At the same time energy tax rates are indexed to increase by 1.8 per cent yearly from 2008, cf. the *Agreement on lower tax on work* from September 2007. Overall, the energy tax revenue as a percentage of GDP is decreasing in years to come cf. *figure A3.3a*. The increase in the share of renewable energy contributes to this development as renewable energy is taxed to a lesser extent than other types of energy.

Besides the revenue loss due to a lower level of energy consumption and a greater share of renewable energy the CP08 incorporates rough estimates for the tax exemption of electric cars towards 2012. The revenue loss is estimated at approximately 1 billion DKR in 2012. Revenue losses after 2012 have not been taken into account as it is technically assumed that potential revenue consequences regarding electric cars after 2012 are fully funded.

In the forecast of the Danish Energy Agency it also appears that Denmark is expected to reduce CO₂ emissions in non-ETS sectors by approximately 11 per cent in 2020 compared with 2005. Therefore, costs of further measures are assumed which can contribute to achieve the objective proposed by the EU Commission to reduce the CO₂ emissions in non-ETS sectors by 20 per cent compared to 2005

before 2020. It is technically assumed that the objective is achieved by buying, for example, credits. The additional annual expenditures associated with this are estimated at 100 million DKR in the period from 2014 to 2020 whereupon the expenditures increase to approximately 300 million DKR.

Assumptions regarding the measures are technically included. It has not been politically decided which measures will be employed.



Source: ADAM and own calculations based on the forecast of the Danish Energy Agency, July 2008.

In case of a global climate agreement further requirements of a reduction in CO₂ emissions in non-ETS sectors of up to 30 per cent in 2020 compared to 2005 are possible. The effect on public finances of such a future objective can, based on technical assumptions, be around 1½ billion DKR but it has not been taken into account in CP08, see *box A3.1*.

Besides, the Agreement on Danish Energy Policy also includes increased subsidies to biomass in power stations, windmills on land as well as establishment of new offshore windmill parks. It is assumed that these expenses can be funded within the PSO-tariff (public service obligations) which is paid by the electricity consumers. Under this assumption the increased subsidies do not affect public finances directly.

The effect on public finances of the energy and climate political agreements and objectives is evaluated in relation to a projection for energy consumption and revenue from energy taxes which excludes the effects of the February 2008 Agreement on Danish Energy Policy. The calculations take as their starting point the July 2008 forecast of the Danish Energy Agency where the Agreement on Danish Energy Policy is not taken into account – the so-called baseline scenario. In addition, model based calculations of the effects of changed estimates of the oil price as well as changed macroeconomic assumptions compared to the July 2008 forecast of the Danish Energy Agency are included as in the CP08 projections.

Energy consumption in the projections *excl.* the Agreement on Danish Energy Policy increases by approximately 5 per cent from 2006 to 2020, *cf. figure A3.3a*. The revenue from energy taxes in per cent of GDP decreases but not to the same extent as in the CP08 projections, *cf. figure A3.3b*. In addition, effects on public finances of achieving the CO₂ objective or of a tax exemption of electric cars are not taken into account in the projections *excl.* the Agreement on Danish Energy Policy. The permanent budget impact of the agreement as well as the international objectives is thus estimated at approximately 3 billion DKR or approximately 0.15 per cent of GDP.

Box A3.1

Potential effects on public finances with relation to further reductions of the CO₂ emissions in connection with a global agreement

The EU Commission's proposal for a climate and energy package suggests that Denmark reduce CO₂ emissions in non-ETS sectors by 20 per cent in 2020 compared with 2005. The effects on public finances of meeting this objective is technically included in CP08 in the form of expenses for buying credits which can cover the difference between the targeted reduction in the emission of greenhouse gasses and the reduction which is included in CP08. The effects on public finances are estimated with considerable uncertainty to be approximately 100 billion DKR per year in the period 2014-2020 (2008 prices), *cf. above*.

In case of a global climate agreement further demands for reductions in non-ETS sectors are possible. If the total reduction objective for the EU increases to 30 per cent, the objective for the Danish reduction could increase to up to 30 per cent in 2020 compared to 2005, dependent on the future negotiations. The effects on the public finances compared to an objective of 20 per cent reflect both further costs of e.g. buying credits as well as revenue losses from energy taxes. It is emphasized that the estimates are associated with considerable uncertainty.

As in the estimated effects on public finances of a 20 per cent reduction, it is technically assumed that an important part of the reduction is made by buying additional CO₂ credits as well as buying credit rights from other EU countries which (with considerable uncertainty) is estimated to cost an additional 200 million DKR annually in the period 2013-2020 compared to a scenario with a 20 per cent reduction. After 2020 it is estimated that the additional expenditure of buying CO₂ credits and credit rights could amount to some 300 million DKR annually.

In addition, it is technically assumed that part of the increase in the savings objective is covered by "domestic initiatives", i.e. reduction of the CO₂ emissions in Denmark. If the CO₂ emissions are reduced by reducing energy consumption, it implies a revenue loss from energy taxes. With a considerable amount of uncertainty it is assumed that energy consumption in non-ETS sectors is reduced by 1-1 ½ per cent towards 2020 in order to achieve the objective. This is expected to involve a revenue loss from energy taxes corresponding to just under ½ billion DKR yearly in the period 2016-2020. After 2020 the revenue loss from energy taxes is estimated on the basis of preliminary and rough estimates to be in the region of 2 ½ billion DKR annually.

Altogether, the permanent effect on public finances in connection with an increase in the required emission-reduction to 30 per cent is estimated to be approximately 1½ billion DKR (2008 prices) thus corresponding to approximately 0.1 per cent of GDP. It is emphasized that this is a rough estimate of the effect on public finances.

In case of a greater degree of domestic initiatives the calculated effects on public finances will increase as the revenue loss from energy taxes is estimated to exceed the expenses for CO₂ credits.

The baseline projections of the Danish Energy Agency include the effect of *Energy Plan 2005*. In CP07 the effect on fiscal sustainability of *Energy Plan 2005* was estimated at above 0.1 per cent of GDP. Thus, the total costs of the energy and climate policies and objectives correspond to about 5 billion DKR or approximately 0.3 per cent of GDP, in line with the estimate in CP07.

In addition, there may be revenues from sales of CO₂ quotas in the years to come. Such revenues are not included in CP08. Revenue from selling quotas can therefore, for example, be part of a tax reform. It is uncertain, what will be decided at the EU level about revenue from selling CO₂ quotes and the size of quote auctioning.

The 2008 Energy Agreement and, thus, the CP08 projections rest on an assumption of energy savings of 1.5 per cent per year corresponding to 10.3 PJ. As mentioned, measures which are expected to meet the objective towards 2013 have so far been decided. After this it is assumed that new initiatives are taken corresponding to a yearly reduction of approximately 4.8 PJ.

The effect on public finances of a scenario with “implemented measures” which technically takes as its starting point the scenario including the 2008 Energy Agreement but excluding the reduction of 4.8 PJ yearly after 2013 implies that projected energy consumption is almost unchanged in 2020 compared with 2006.

Compared with the projections excl. the Agreement on Danish Energy Policy the sustainability indicator in the projections for the scenario based on “implemented measures” is weakened by just below 0.05 per cent of GDP (almost 1 billion DKR), cf. table A3.2. Compared with the CP08 projections – which as mentioned include all measures and requirements for energy saving from the Agreement on Danish Energy Policy – the sustainability indicator is approximately 0.1 per cent of GDP (approximately 2 billion DKR) better in the scenario based on “implemented measures”. The CP08 projections include, as mentioned, a decline in gross energy consumption of approximately 4 per cent from 2006 to 2020. In connection with a tax reform it is, among other things, an objective that a reform can contribute to meet the objectives within the energy and climate area.

Table A3.2		
Effect on Fiscal Sustainability of Scenario based on implemented measures		
	P.c. of GDP	Billion DKR
Scenario based on “implemented measures” compared with projection excl. the Agreement on Danish Energy Policy	-0.05	-1
Scenario based on “implemented measures” compared with CP08	0.1	2

Source: Own calculations based on the July 2008 forecast of the Danish Energy Agency.

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

Table 1a		Macroeconomic prospects										
ESA		2007	2007	2008	2009	2010	2011	2012	2013	2014	2015	
Bill. DKK		Rate of change, per cent										
Real GDP	1446.7 ¹⁾	1.6	0.2	-0.2	0.7	1.9	1.7	1.6	1.6	1.6	1.6	
Nominal GDP	1687.9	3.6	4.1	2.6	2.9	3.9	4.2	4.0	4.0	3.9	3.9	
Components of real GDP												
Private consumption	735.6 ¹⁾	2.4	0.9	0.7	1.1	1.7	1.8	1.8	1.8	1.8	1.8	
Government consumption	364.0 ¹⁾	1.3	1.6	1.2	1.0	1.0	1.0	1.0	0.8	0.8	0.7	
Gross fixed capital formation	329.6 ¹⁾	3.1	-0.9	-4.2	-2.5	1.0	0.9	2.4	2.4	2.6	2.6	
Changes in inventories ²⁾	7.5 ¹⁾	-0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exports of goods and services	793.2 ¹⁾	2.2	3.3	-0.1	2.3	4.4	3.1	2.5	2.5	2.5	2.8	
Imports of goods and services	790.9 ¹⁾	2.8	4.8	-0.1	1.5	3.6	2.6	2.5	2.5	2.6	2.9	
Contributions to real GDP growth												
Final domestic demand		2.2	0.7	-0.2	0.3	1.4	1.3	1.5	1.5	1.4	1.5	
Changes in inventories ²⁾		-0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
External balance of goods and services		-0.2	-0.7	0.0	0.4	0.5	0.5	0.1	0.1	0.2	0.1	

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

2) Contribution of changes in stocks to GDP growth.

Source: Statistics Denmark and own calculations.

ESA	2007	2007	2008	2009	2010	2011	2012	2013	2014	2015	
	Level	Rate of change, per cent									
GDP-deflator	116.7	2.0	3.9	2.8	2.1	2.0	2.5	2.3	2.3	2.2	
Private consumption deflator	112.4	1.8	3.1	1.7	2.2	1.5	1.8	1.9	1.9	1.9	
Consumer price index	114.2	1.7	3.3	1.6	2.2	0.6	1.8	1.9	1.9	2.0	
HICP	103.5	1.7	3.6	1.3	2.1	1.4	1.8	1.9	1.9	1.8	
Net price index	115.4	1.9	3.7	1.5	2.2	1.1	1.8	2.0	2.0	2.1	
Public consumption deflator	120.6	2.6	3.2	4.3	2.9	2.9	3.0	3.0	3.0	3.0	
Investment deflator	114.8	4.4	3.3	3.2	0.9	1.4	3.0	2.2	2.0	1.8	
Export price deflator	111.3	2.1	3.4	-0.2	1.1	1.8	1.8	1.7	1.7	1.7	
Import price deflator	107.0	3.3	2.1	-0.4	1.0	1.5	1.7	1.6	1.6	1.6	

Note: For all price indices 2000=100.
Source: Statistics Denmark and own calculations.

ESA	2007	2007	2008	2009	2010	2011	2012	2013	2014	2015	
	Level	Rate of change, per cent									
Employment, 1,000 persons	2856.9	2.7	0.3	-1.3	-1.7	0.1	0.2	-0.1	-0.1	-0.1	
Employment, hours worked (mill. hours)	4569.2	3.7	-0.3	-1.8	-1.9	0.3	0.2	-0.1	-0.1	-0.1	
Unemployment rate (per cent) ¹⁾ , harmonized EU-definition	3.8	3.8	3.2	3.5	4.0	4.2	4.0	4.0	4.0	4.0	
Labour productivity, persons (1,000 DKK) ²⁾	506.4	-1.0	-0.2	1.1	2.5	1.8	1.5	1.7	1.8	1.7	
Labour productivity, hours worked (DKK) ³⁾	316.6	-1.9	0.5	1.6	2.7	1.6	1.5	1.7	1.8	1.7	
Compensation of employees (bill. DKK) ⁴⁾	922.3	5.8	4.2	3.0	2.0	4.1	4.1	3.8	3.7	3.8	
Compensation per employee ⁵⁾	344.4	3.1	3.9	4.2	3.7	3.9	3.8	3.8	3.8	3.8	

- 1) The EU-harmonized unemployment in per cent of the labour force. The (structural) unemployment is 3½ per cent from 2012 based on the national unemployment definition. In the last years the uncertainty wrt. the relation between the national and the harmonized unemployment definition has increased.
 - 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

ESA	2007	2008	2009	2010	2011	2012	2013	2014	2015
Per cent of GDP									
Net lending/borrowing vis-à-vis the rest of the world	0.7	1.7	1.8	2.3	2.6	2.6	2.4	2.1	1.8
<i>Of which:</i>									
- Balance on goods and services	2.1	2.1	2.2	2.6	3.2	3.6	3.6	3.6	3.7
- Balance of primary incomes and transfers	-1.4	-0.4	-0.4	-0.3	-0.6	-0.9	-1.2	-1.5	-1.8
- Capital account	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net lending of the private sector	-3.7	-1.2	1.8	3.6	2.3	2.5	2.3	2.1	1.9
Net lending of general government ¹⁾	4.5	3.0	0.0	-1.2	0.3	0.1	0.1	0.0	-0.1
Statistical discrepancy	0.0	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.

Source: Statistics Denmark and own calculations.

Table 2 General government budgetary prospects (EDP-basis)											
	ESA	2007	2008	2009	2010	2011	2012	2013	2014	2015	
	Bill, DKK					Per cent of GDP					
Net lending (EDP B.9) by sub-sector											
General government	76.5	4.5	3.0	0.0	-1.2	0.3	0.1	0.1	0.0	-0.1	
Central government	79.9	4.7	3.0	0.0	-1.2	0.3	0.1	0.1	0.0	-0.1	
Local government	-3.4	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Social security funds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
General government (S13)											
Total revenue ¹⁾	919.4	54.5	53.2	51.2	51.5	52.1	51.8	51.7	51.6	51.5	
Total expenditure ²⁾	842.9	49.9	50.2	51.2	52.8	51.8	51.7	51.6	51.6	51.6	
Net lending	76.5	4.5	2.9	0.0	-1.2	0.3	0.1	0.1	0.0	-0.1	
Interest expenditure	26.1	1.5	1.3	1.5	1.4	1.4	1.2	1.1	0.9	0.8	
Primary balance ³⁾	102.5	6.1	4.2	1.5	0.2	1.6	1.3	1.2	0.9	0.7	
One-off effects ⁴⁾		0.1	1.0	1.7	1.7	0.2	0.0	0.0	0.0	0.0	
Selected components of revenue											
Total taxes ⁵⁾	807.1	47.8	46.6	44.7	45.1	45.7	45.4	45.4	45.4	45.3	
Taxes on production and imports	304.4	18.0	17.6	17.4	17.2	16.9	16.7	16.7	16.6	16.5	
Current taxes on income, wealth, etc.	498.8	29.6	28.7	27.1	27.7	28.5	28.5	28.5	28.5	28.5	
Capital taxes	3.9	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Social contributions ⁶⁾	16.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.9	
Property income ⁷⁾	32.9	1.9	2.0	1.8	1.8	1.8	1.8	1.7	1.7	1.7	
Other (residual) ⁸⁾	62.6	3.7	3.6	3.6	3.6	3.7	3.7	3.6	3.6	3.6	
Total revenue ²⁾	919.4	54.5	53.2	51.2	51.5	52.1	51.8	51.7	51.6	51.5	
p.m. Tax burden ⁹⁾	823.9	48.8	47.6	45.7	46.1	46.6	46.4	46.4	46.3	46.2	

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

ESA	2007	2007	2008	2009	2010	2011	2012	2013	2014	2015
	Bill. DKK	Per cent of GDP								
Selected components of expenditure										
Compensation of employees and intermediate consumption	435.4	25.8	26.0	26.9	27.2	27.2	27.2	27.2	27.1	27.1
-compensation of employees	284.6	16.9	16.7	17.3	17.4	17.4	17.4	17.4	17.4	17.4
-intermediate consumption	150.7	8.9	9.3	9.6	9.8	9.8	9.8	9.7	9.7	9.7
Total social transfers	282.0	16.7	16.4	16.8	17.3	17.3	17.4	17.6	17.7	17.8
- Social transfers in kind ⁹⁾	24.3	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
- Other than in kind	257.7	15.3	15.0	15.3	15.8	15.8	15.9	16.1	16.2	16.3
Interest expenditure	26.1	1.5	1.3	1.5	1.4	1.4	1.2	1.1	0.9	0.8
Subsidies	38.3	2.3	2.2	2.3	2.3	2.4	2.4	2.4	2.4	2.4
Gross fixed capital formation	30.0	1.7	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9
Other (residual) ¹⁾	31.2	1.9	2.5	1.9	2.6	1.7	1.6	1.6	1.7	1.7
Total expenditure ²⁾	842.9	49.9	50.2	51.2	52.8	51.8	51.7	51.6	51.6	51.6
<i>Prm</i> : public consumption	438.8	26.0	26.2	27.0	27.2	27.3	27.2	27.2	27.2	27.1

Note: Public balance figures are on EDP-basis excl. ATP.

- 1) Excl. central government revenues from sale of UMTS-licenses.
- 2) Adjusted for swap-related flows and spending on infrastructure investments.
- 3) Defined as EDP B.9 plus EDP D.41.
- 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, cf. also table 4.2.
- 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) Statistics Denmark does not publish figures for all the subgroups (P.11+P.12+P.13+D.39+D.7+D.9/other than D.9), D.6311, D.6312, D.6313, D.29+D.4 (other than D.4)+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.

		COFOG		Per cent of GDP	
		2006	2007	2006	2007
		1	6.3		6.3
General public services		2	1.6		1.6
Defence		3	1.0		1.0
Public order and safety		4	3.5		3.3
Economic affairs		5	0.5		0.6
Environmental protection		6	0.6		0.6
Housing and community amenities		7	6.9		7.2
Health		8	1.6		1.6
Recreation, culture and religion		9	7.6		7.2
Education		10	20.9		20.6
Social protection		TE	50.5		49.9
Total expenditure ¹⁾					

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 and net spending on infrastructure, i.e. comparable to expenditures in table 2.
Source: Statistics Denmark and own calculations.

Table 4
General government debt developments

	2007	2008	2009	2010	2011	2012	2013	2014	2015
Per cent of GDP									
Gross debt	26.3	30.3	27.9	26.3	25.4	24.6	23.8	23.2	22.6
Change in gross debt ratio ¹⁾	-4.4	4.0	-2.4	-1.6	-0.9	-0.8	-0.8	-0.7	-0.5
Change in gross debt ²⁾	-3.3	5.0	-1.6	-0.8	0.1	0.2	0.1	0.2	0.3
Contributions to changes in gross debt									
Primary balance ³⁾	-6.1	-4.2	-1.5	-0.2	-1.6	-1.3	-1.2	-0.9	-0.7
Interest expenditure ⁴⁾	1.5	1.3	1.5	1.4	1.4	1.2	1.1	0.9	0.8
Stock-flow adjustment ⁵⁾	1.2	8.0	-1.6	-2.1	0.4	0.3	0.2	0.2	0.2
<i>p.m.</i> : implicit interest rate on debt ⁶⁾	5.2	5.0	5.1	5.3	5.4	5.0	4.4	3.9	3.4
Other relevant variables									
Central government account in Danmarks Nationalbank	5.2	12.8	9.2	6.6	-	-	-	-	-
Public net debt ⁷⁾	-4.1	-6.9	-6.7	-5.3	-5.6	-5.9	-6.2	-6.3	-6.4
Net debt in central and local Governments ⁷⁾	-4.0	-6.8	-6.7	-5.3	-5.6	-5.8	-6.1	-6.3	-6.3

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 $D_t/GDP_t - D_{t-1}/GDP_{t-1}$, 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		2007	2008	2009	2010	2011	2012	2013	2014	2015	
Cyclical developments		ESA									
		Per cent									
Real GDP growth		1.6	0.2	-0.2	0.7	1.9	1.7	1.6	1.6	1.6	1.6
General government balance		4.5	3.0	0.0	-1.2	0.3	0.1	0.1	0.0	0.0	-0.1
Interest expenditure		1.5	1.3	1.5	1.4	1.4	1.2	1.1	0.9	0.9	0.8
One-off effects ¹⁾		0.1	1.0	1.7	1.7	0.2	0.0	0.0	0.0	0.0	0.0
Potential GDP growth		1.6	1.5	1.3	1.4	1.5	1.5	1.6	1.6	1.6	1.6
Of which, contribution from:		Percentage points									
- Labour		1.1	0.1	-0.1	-0.2	0.2	0.0	-0.1	-0.1	-0.1	-0.1
- Of which labour force		1.0	-0.2	-0.3	-0.3	0.2	0.0	-0.1	-0.1	-0.1	-0.1
- Capital		0.5	1.5	1.3	1.2	0.8	0.9	1.0	0.9	0.9	0.9
- Total factor productivity		0.0	-0.1	0.1	0.4	0.5	0.6	0.7	0.8	0.8	0.8
Output gap		2.5	1.9	0.6	-0.7	-0.4	0.0	0.0	0.0	0.0	0.0
Cyclical component ²⁾		-2.2	-1.7	-0.6	0.5	0.2	0.0	0.0	0.0	0.0	0.0
Structural budget balance ⁴⁾		2.4	2.3	1.1	0.9	0.6	0.1	0.1	0.0	0.0	-0.1

1) 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.
2) Technically it is assumed, that the negative output gap in 2010 is closed gradually towards 2012.
3) The calculation of the cyclical component is based on the output gap.
4) 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, cf. also table 4.2. 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		2007	2008	2009	2010	2011	2012	2013	2014	2015	
Divergence from previous update		Rate of change, per cent									
ESA		Rate of change, per cent									
B1* g											
Real GDP growth											
- Previous update		2.0	1.3	1.1	0.5	1.1	1.4	1.6	1.8	1.7	
- Current update		1.6	0.2	-0.2	0.7	1.9	1.7	1.6	1.6	1.6	
- Difference		-0.3	-1.1	-1.2	0.2	0.8	0.3	0.1	-0.1	-0.1	
Output gap (per cent of GDP)											
- Previous update		2.1	1.8	1.0	0.5	0.0	0.0	0.0	0.0	0.0	
- Current update		2.5	1.9	0.6	-0.7	-0.4	0.0	0.0	0.0	0.0	
- Difference		0.4	0.1	-0.4	-1.2	-0.4	0.0	0.0	0.0	0.0	
Actual budget balance¹⁾		Per cent of GDP									
EDPB,9											
- Previous update		3.8	3.0	2.0	1.2	0.8	0.7	0.4	0.5	0.3	
- Current update		4.5 ¹⁾	3.0	0.0	-1.2	0.3	0.1	0.1	0.0	-0.1	
- Difference		0.7	0.0	-2.0	-2.4	-0.5	-0.6	-0.3	-0.5	-0.4	
Gross debt level											
- Previous update		25.6	21.6	19.2	18.6	18.0	17.3	16.7	16.1	15.5	
- Current update		26.3	30.3	27.9	26.3	25.4	24.6	23.8	23.2	22.6	
- Difference		0.7	8.6	8.7	7.7	7.4	7.3	7.1	7.0	7.1	

1) Statistics Denmark's latest EDP-reporting in October (based on *Economic Survey, August 2008*), showed a surplus of 4.9 per cent of GDP on EDP-basis.

Source: Own calculations.

Table 7
Long-term sustainability of public finances

	2000	2005	2010	2020	2030	2050	2060	2070
Total expenditure	53.0	51.9	52.8	51.8	52.5	53.4	52.4	50.7
<i>Of which:</i>								
- Age-related expenditure	27.1	28.4	29.5	30.6	30.7	30.6	29.3	27.9
- Pension expenditure	9.4	9.4	9.6	10.4	10.0	9.3	8.4	7.7
- Social security pension	9.4	9.4	9.6	10.4	10.0	9.3	8.4	7.7
- Old-age and early pensions	7.0	7.3	7.6	8.5	7.9	7.2	6.3	5.4
- Other pensions	2.4	2.2	2.0	1.9	2.1	2.1	2.1	2.3
- Occupational pensions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- Health care	6.0	6.4	6.8	7.1	7.6	7.9	7.8	7.5
- Long-term care	1.1	1.1	1.2	1.3	1.6	1.8	1.9	1.8
- Education expenditure	6.2	6.6	6.9	6.8	6.6	6.7	6.6	6.6
- Other age-related expenditures	4.4	4.8	5.0	4.9	5.0	4.9	4.6	4.3
- Interest expenditure	4.3	2.6	1.9	1.0	1.3	2.3	3.0	2.8
Total Revenue	55.3	56.9	51.5	50.7	49.6	50.0	49.3	49.2
<i>Of which:</i>								
- Property income ¹⁾	1.9	1.5	1.7	1.2	0.7	0.5	0.3	0.2
- Revenue from pension payouts net	-0.7	-1.1	-0.8	-1.1	-1.1	-0.1	0.1	0.6
Pension reserve fund assets	115.9	138.9	125.8	152.9	181.6	201.8	203.6	197.5
<i>Of which:</i>								
- Public pension fund assets ²⁾	1.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Assumptions								
Labour productivity growth	3.7	0.4	2.6	1.6	1.4	1.5	1.7	1.6
Real GDP growth ³⁾	3.5	2.4	0.7	1.8	2.5	2.4	2.5	2.2
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	81.7	82.0	82.1
Total participation rate (aged 20-64)	79.8	80.5	80.3	81.6	84.5	85.5	85.7	85.8
Unemployment rate	4.8	4.9	3.6	3.5	3.5	3.5	3.5	3.5
Structural unemployment	5.8	4.6	3.6	3.5	3.5	3.5	3.5	3.5
Population aged 65+, 1,000 persons	791	818	916	1,136	1,312	1,430	1,390	1,499

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.

Table 8		2007	2008	2009	2010	2011	2012	2013	2014	2015
	Basic assumptions									
	Short-term interest rate (annual average)	4.4	5.3	3.5	3.3	3.7	4.2	4.7	5.2	5.8
	Long-term interest rate (annual average)	4.3	4.4	4.2	4.4	4.7	4.9	5.2	5.5	5.8
	Exchange rate USD/EUR (annual average)	136.8	145.8	128.2	128.2	128.2	128.2	128.2	128.2	128.2
	Nominal effective exchange rate (1980=100)	103.2	105.5	104.1	104.1	104.1	104.1	104.1	104.1	104.1
	World excluding EU, GDP growth	5.6	4.3	2.9	3.8	5.0	5.0	4.5	4.5	4.5
	EU GDP growth	2.9	1.4	0.2	1.1	2.9	2.9	2.4	2.4	2.4
	Growth of relevant foreign markets	7.7	3.7	-0.3	3.1	4.2	4.2	4.2	4.0	4.0
	World import volumes, excluding EU	7.2	6.0	3.1	4.7	7.5	7.5	7.0	7.0	7.0
	Oil prices, (Brent, USD/barrel)	72.8	98.2	55.0	55.0	57.6	61.9	66.2	70.5	74.8

Source: ADAM, European Commission Autumn forecasts 2008 and own calculations.

