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Denmark: 2010 Article IV Consultation—Staff Report; Informational Annex; Public Information Notice on the Executive Board Discussion; and Statement by the Executive Director for Denmark

Under Article IV of the IMF's Articles of Agreement, the IMF holds bilateral discussions with members, usually every year. In the context of the 2010 Article IV consultation with Denmark, the following documents have been released and are included in this package:

- The staff report for the 2010 Article IV consultation, prepared by a staff team of the IMF, following discussions that ended on November 1, 2010, with the officials of Denmark on economic developments and policies. Based on information available at the time of these discussions, the staff report was completed on November 23, 2010. The views expressed in the staff report are those of the staff team and do not necessarily reflect the views of the Executive Board of the IMF.

- A Public Information Notice (PIN) summarizing the views of the Executive Board as expressed during its December 13, 2010 discussion of the staff report that concluded the Article IV consultation.

- A statement by the Executive Director for Denmark.

The policy of publication of staff reports and other documents allows for the deletion of market-sensitive information.

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DENMARK

Staff Report for the 2010 Article IV Consultation

Prepared by the European Department

Approved by Juha Kähkönen and Jan Kees Martijn

November 23, 2010

Executive Summary

Background and outlook: Denmark is recovering from a deep recession. A housing market correction and domestic banking crisis exacerbated the impact of the global financial crisis. A strong policy response helped stabilize the banking system and soften the impact of the negative shocks. Supported by continued strong public consumption growth and booming exports, output is projected to expand by around 2½ percent this year.

Context of past surveillance: Staff welcomed the authorities' initial response to the dual crisis in late 2008, and anticipated that large automatic stabilizers would be sufficient to cushion the resulting downturn. In the end, as the contraction continued to deepen, substantial additional fiscal stimulus was provided.

Key challenges identified during the consultation: The focus of policies needs to shift from short-term concerns to putting growth on a steady and sustainable path while further reducing vulnerabilities. Bringing fiscal policy gradually back to a trajectory ensuring credibility of the peg and sustainability will be essential. Continued efforts to strengthen financial sector regulation and supervision, including in response to supranational initiatives, are another priority. Better allocation of resources should help address the sluggish labor productivity growth challenge.

Authorities' reaction: The authorities broadly agreed with the mission's analysis of the key policy challenges facing Denmark and its recommendations. Referring to recent welfare and tax reforms, they were less concerned than staff about negative incentive effects from revenue hikes in their consolidation program. There were also some differences in emphasis among the priorities for further financial sector regulatory and supervisory reforms.

The mission: Consultation discussions were held in Copenhagen during October 22–November 1, 2010. The staff team—Mr. De Broeck (Head), Ms. Babihuga, Mr. Mehrez and Mr. Ross (all EUR)—met with the Chairman of the Board of Governors of Danmarks Nationalbank; Deputy Permanent Secretaries of the Ministry of Finance; the Deputy Director General of the Danish Financial Supervisory Authority; and other senior officials. The mission also met with representatives of trade unions and business associations, and financial institutions.

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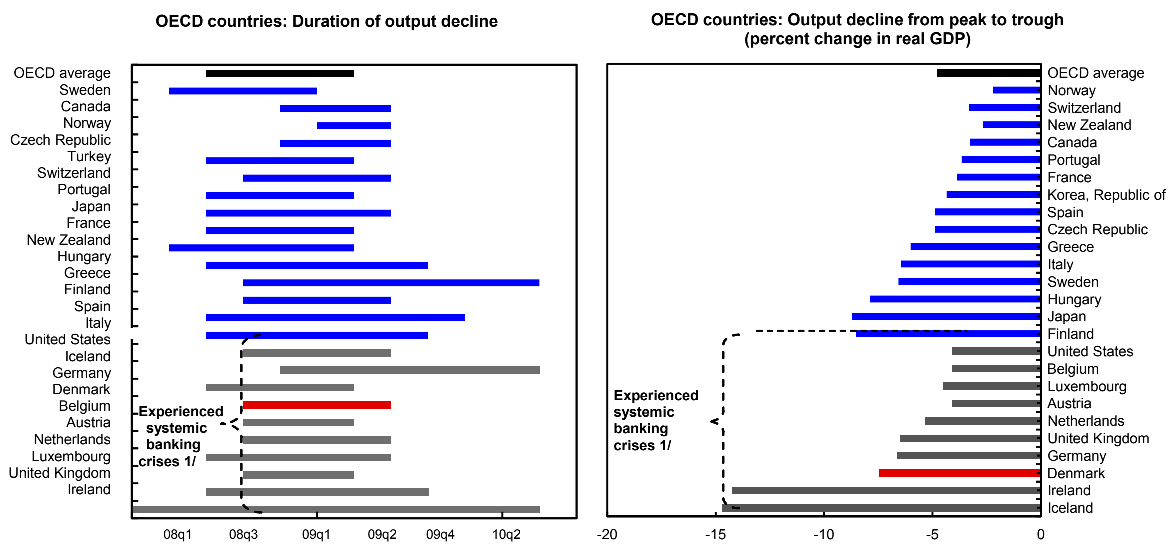
I. Background

Denmark was hard hit by dual shocks—a domestic housing correction and the global recession

1. **Following a prolonged boom, growth started to lag in 2006 amid a slowing housing market, rising interest rates, and binding capacity constraints (Figures 1–3).** The ensuing correction in house prices (about 20 percent) gave way to a domestic banking crisis in mid-2008, which was compounded by rising insolvencies and unemployment as the recession took hold. Danish banks, highly dependent on interbank funding, faced additional pressures in the fall of 2008 as international wholesale markets froze. From peak to trough, output contracted by close to 7 percent, as did private consumption, with exports down by 14 percent. While the duration of Denmark's output decline was around OECD averages, its size was significantly larger (Text figure). The labor force survey-based unemployment rate surged by over 4 percentage points to 7.3 percent by mid-2010.



Sources: OECD; and IMF staff calculations.
1/ As defined by Laeven and Valencia, IMF Working Paper No. 10/146.

The recession and banking crisis were mitigated by aggressive stabilization policies

2. **Swift policy actions prevented an even deeper recession and stabilized the peg.** Domestic demand and employment were buttressed by counter-cyclical fiscal policy, automatic stabilizers, and easing monetary conditions. Part-time work schemes and expanded active labor market policies (ALMP) helped further contain private sector employment losses. To defend the peg, the Danish National Bank (DNB) was forced to intervene heavily in the foreign exchange market, as well as raise policy rates, during September–October 2008, which resulted in record high spreads in the DNB-ECB monetary policy rate.

When appreciation pressures reemerged, the DNB sharply lowered policy rates and purchased some DKK 210 billion in foreign exchange from November 2008 to December 2009 (Figure 5). Reserve build-up continued through the first half of 2010. However, in early fall 2010, reserves started to decline, reflecting a narrowing of spreads in the Danish-euro money market rates in tandem with continued normalization of euro area money market conditions. To ease pressures on the peg, the DNB raised its deposit rates on two occasions in October—the first interest rate hikes in two years.

3. **Fiscal policy delivered some 4 percentage points of GDP in discretionary stimulus in 2009–10**. Roughly two thirds of the stimulus was implemented in 2009, with measures focused on the expenditure side—higher public consumption, subsidies and transfer payments—but also income tax cuts in the context of a major tax reform (Text table). Also reflecting large automatic stabilizers,[1] the general government balance swung from a surplus of 3.4 percent of GDP in 2008 to a deficit of 2.8 percent of GDP in 2009. In 2010, the stimulus comprised additional income tax cuts and higher-than-budgeted growth in public consumption and investment, and the deficit is projected to further widen to around 5 percent of GDP. The cumulative effect of counter-cyclical fiscal policy during 2009–10 is estimated by the authorities at around 2¼ percentage points of GDP. Widening deficits and funding of financial support to the banking sector are projected to lift the general government debt-to-GDP ratio to near 45 percent in 2010, a 17 percentage points of GDP increase since 2007. However, this has not affected investor sentiment, and spreads vis-à-vis German Bunds remain very low.

Denmark: Discretionary Fiscal Measures, 2009–11
(Percent of GDP)

	2009	2010	2011
Expenditure	**-2.0**	**-0.6**	**0.9**
Public consumption	-1.5	0.2	0.2
Subsidies	-0.3	0.0	0.1
Transfers	-0.2	-0.3	0.2
Public investment	0.0	-0.4	0.4
Other	0.0	-0.1	0.0
Revenue	**-0.7**	**-0.6**	**0.5**
Personal income taxes	-0.6	0.1	0.3
Property taxes	0.0	0.0	0.0
Fiscal drag	0.0	0.0	0.0
Other	-0.1	0.0	0.1
Tax reform 2009	0.0	-0.7	0.1
Total	**-2.7**	**-1.2**	**1.4**

Sources: August 2010 Economic Survey; and Denmark's Convergence Programme 2009.

4. **Denmark's flexicurity model performed well during the crisis.**[2] In part reflecting flexible layoff arrangements, employment fell sharply—by 5.5 percent during 2008Q4–2009Q4—with the construction and industry sectors particularly hard hit. Robust public sector employment throughout the crisis helped moderate the impact of private sector losses on total employment. Moreover, a decline in the labor force, as foreign workers left the

[1] Reflecting the size of government relative to GDP, Denmark's automatic stabilizers are among the largest in the EU.

[2] The model combines flexibility in hiring and firing with generous unemployment benefits and extensive active labor market policies.

country, eased the impact on unemployment. Nevertheless, the number of registered unemployed more than doubled, although from a very low pre-crisis level (Figure 4). However, as a key test of the flexicurity model, official estimates show no indication of an increase in the structural component. ALMP refocused on emerging new priorities (Text table)—notably, upgrading skills in light of the changing composition of labor demand. A large increase in government spending on unemployment benefits, in tandem with the increase in the number of registered unemployed, and on ALMP, expenditure on which is tied to unemployment developments, acted as an important automatic stabilizer.

Table. Overview of Crisis Measures in the Labor Market, 2009-10

February 2009	● Key changes to existing schemes: (i) increased the flexibility and administration of a training subsidy for employers if they hire unemployed persons; and (ii) increased the duration of a scheme providing up to 6 weeks of education during the first 9 months of unemployment
March 2009	● Introduced more flexible rules for the work-sharing scheme allowing companies to dismiss temporarily (for up to 26 weeks) employed persons with unemployment benefits
September 2009	● Introduced a package aimed at combating the increase in youth unemployment and facilitating further education ● Relaxed eligibility requirements for participating in active labour market programs—from six to three months of unemployment
January 2010	● Established training program in vocational skills for low-skilled adult workers ● Increased funds to improve speed of assistance from employment services once workers are laid-off ● Established a national job alert system to offer support as quickly as possible ● Increased monitoring of labour market developments (e.g. vacancies) ● Tightened the rules for sickness leave (while giving sickness beneficiaries access to activation measures) ● Reorganized the Public Employment Service under a single local management serving both insured and uninsured unemployed and benefit receivers

Source: Danish Ministry of Employment

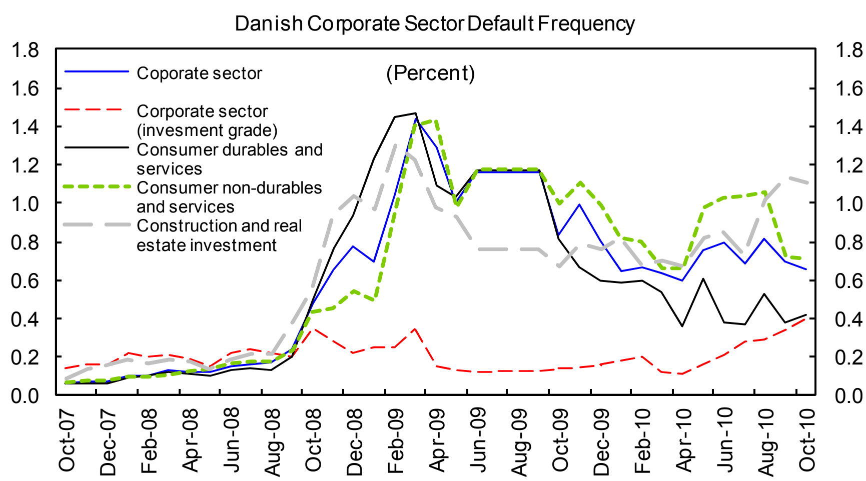
5. **On the financial stability front, the authorities moved aggressively to stem pressures in the banking system through comprehensive government support.** The crisis in the domestic banking sector was closely linked to the collapse of the real estate boom, as some banks had built up concentrated exposures in the construction and real estate sectors. In July 2008, the central bank stepped in to provide liquidity guarantees to Roskilde bank, the eighth largest bank, eventually nationalizing it to avoid contagion to the rest of the financial system. Since then, a number of bank failures have followed—mostly smaller banks with similar risk profiles. Overall, the number of commercial and savings banks has dropped from more than 160 in mid-2006 to 125 in mid-2010, as institutions were transferred to the newly created state holding "Financial Stability Company" for failed banks, absorbed by larger banks, or ceased operation.

6. **The authorities' actions and the improvement in economic conditions have restored overall stability to the banking system.** Profits have strengthened, reflecting growing net interest income and lower write-downs, and large exposures brought down. Aided by market normalization and official support, solvency ratios have improved and liquidity strengthened. Nonetheless, some medium-size banks remain vulnerable, with funding continuing in part to depend on official guarantees.

Recovery in the highly leveraged household and corporate sectors is slow, but exports have rebounded

7. **Private consumption, a key driver of pre-crisis growth, has been dented by the decline in house prices and net household wealth (Figure 2).** Prone to negative consumer sentiment and uncertainty, it is yet to regain significant momentum. Reflecting high household gross indebtedness, the propensity to consume has been trending downwards since mid-2008 and declined further during 2010H1, as households started to rebuild their net financial assets position. After contracting by close to 5 percent in 2009, private consumption rose by 1.9 percent during 2010Q1 and 0.4 percent in 2010Q2. Consumer confidence returned to positive territory in early 2010, but has weakened again since, reaching a 4 month low in October—in part reflecting uncertainty about current economic conditions and expectations of higher unemployment.

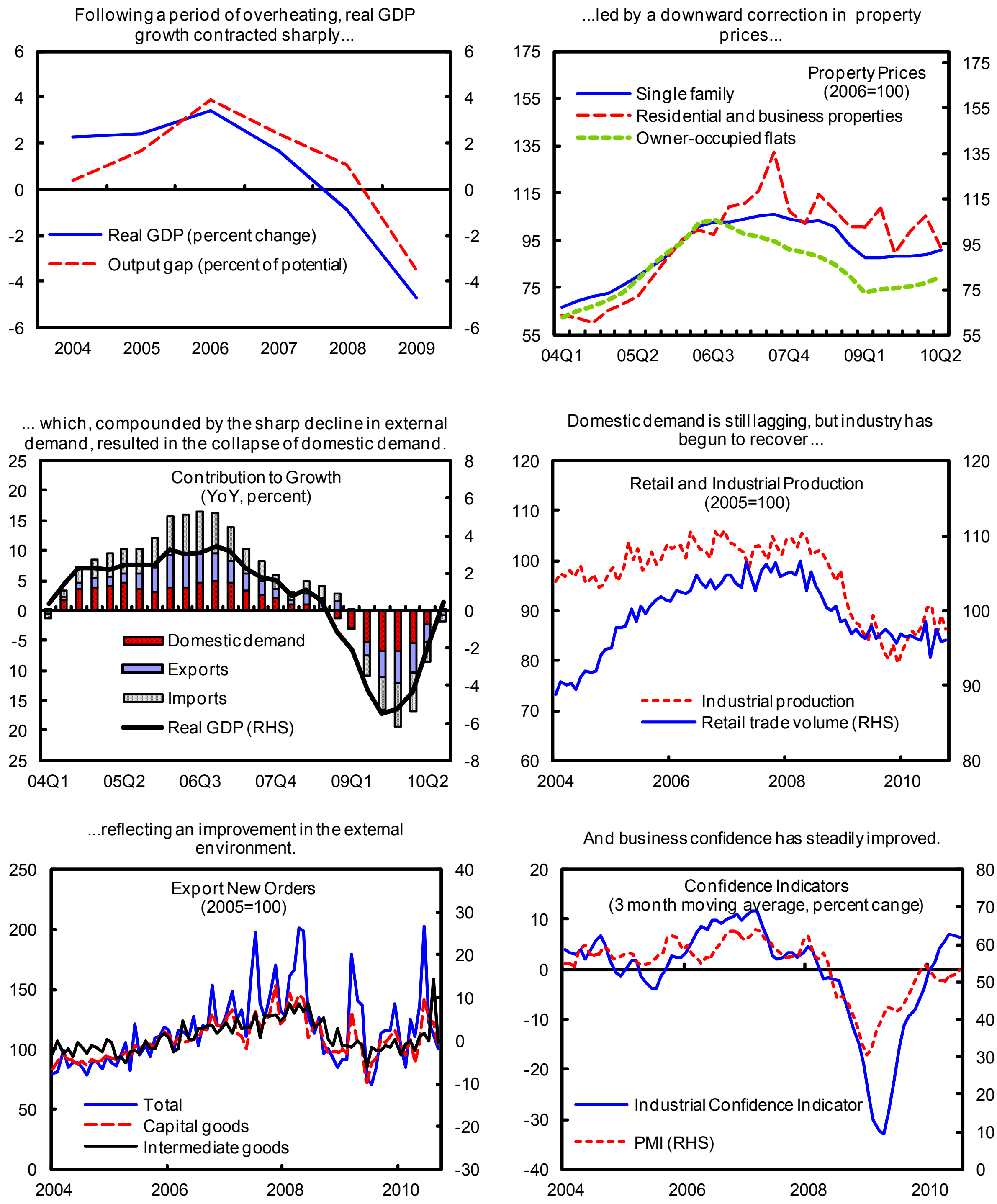
8. **Consolidation is underway within the corporate sector.** Like households, Danish corporates were highly leveraged before the crisis. The sector has been hit hard by the recession and many small and medium-sized companies have folded. Lagging the recovery, corporate bankruptcies have continued to rise (Text figure), from already elevated levels in 2009, and appear to be concentrated in small and medium sized companies—particularly in the construction, trade and transport sectors, which account for about ¾ of total corporate bankruptcies.



Source: Moody's KMV.

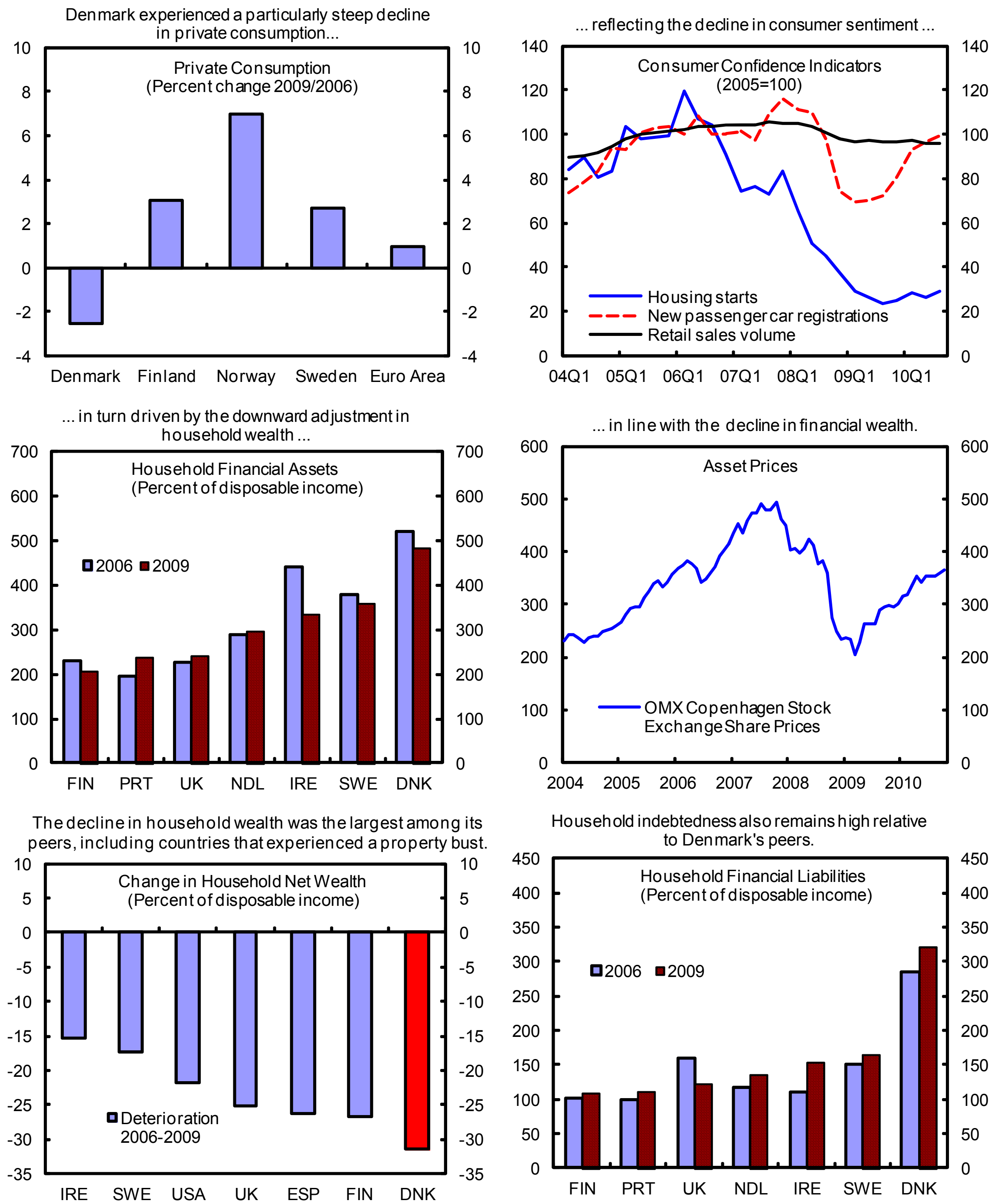
9. **Exports have rebounded, led by a reversal in the services account, in particular sea freight.** After falling by 10 percent in real terms in 2009, total exports rose by 1.4 and 3 percent, during 2010Q1 and Q2, respectively.

Figure 1. Denmark: Recovery Underway Following Dual Shocks to the Economy, 2004–10



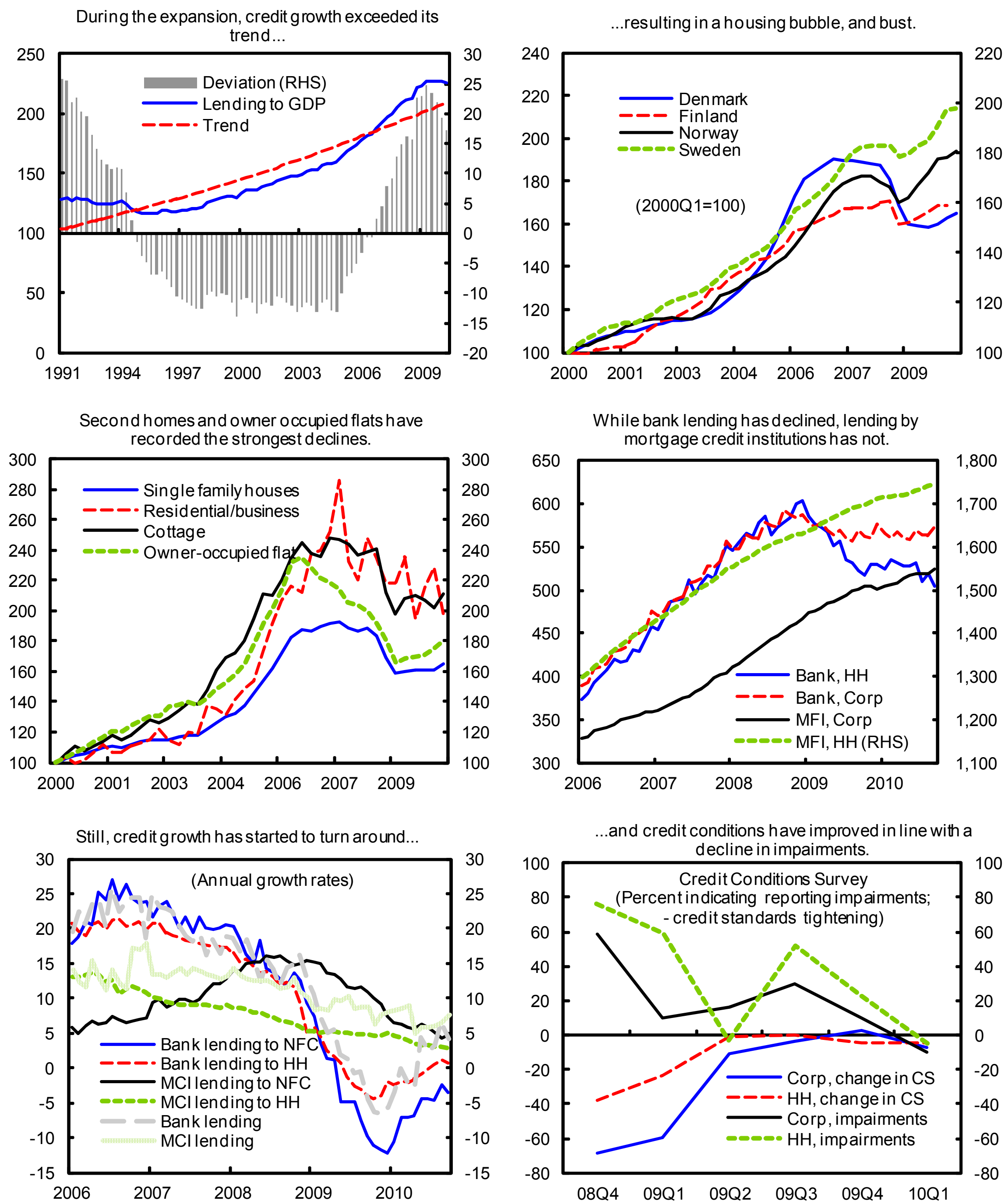
Sources: Danmarks Nationalbank; Statistics Denmark; and IMF staff calculations.

Figure 2. Denmark: Household Balance Sheets and Consumption, 2004–10



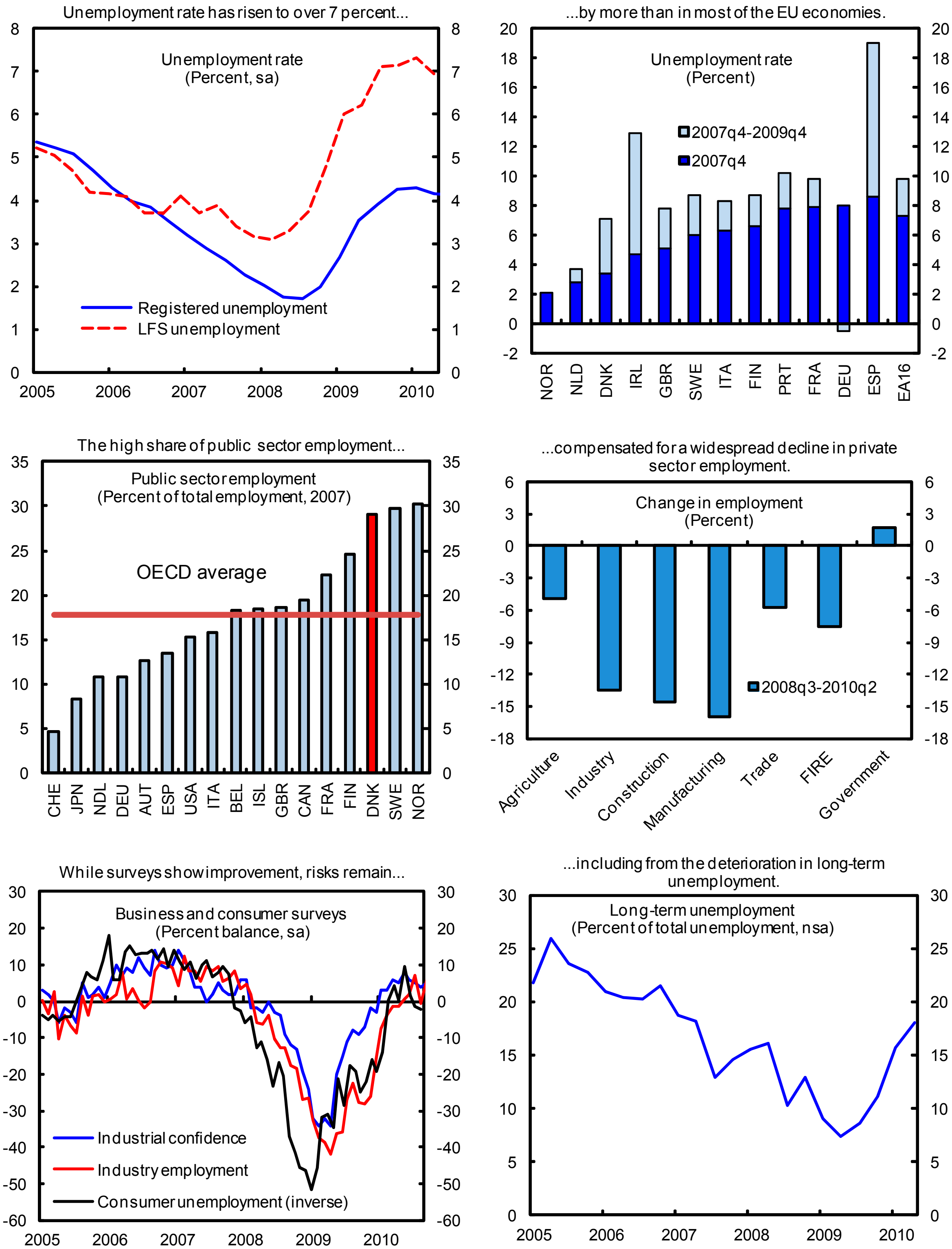
Sources: Danmarks Nationalbank; Statistics Denmark; and IMF staff calculations.

Figure 3. Denmark: Credit and Housing Prices



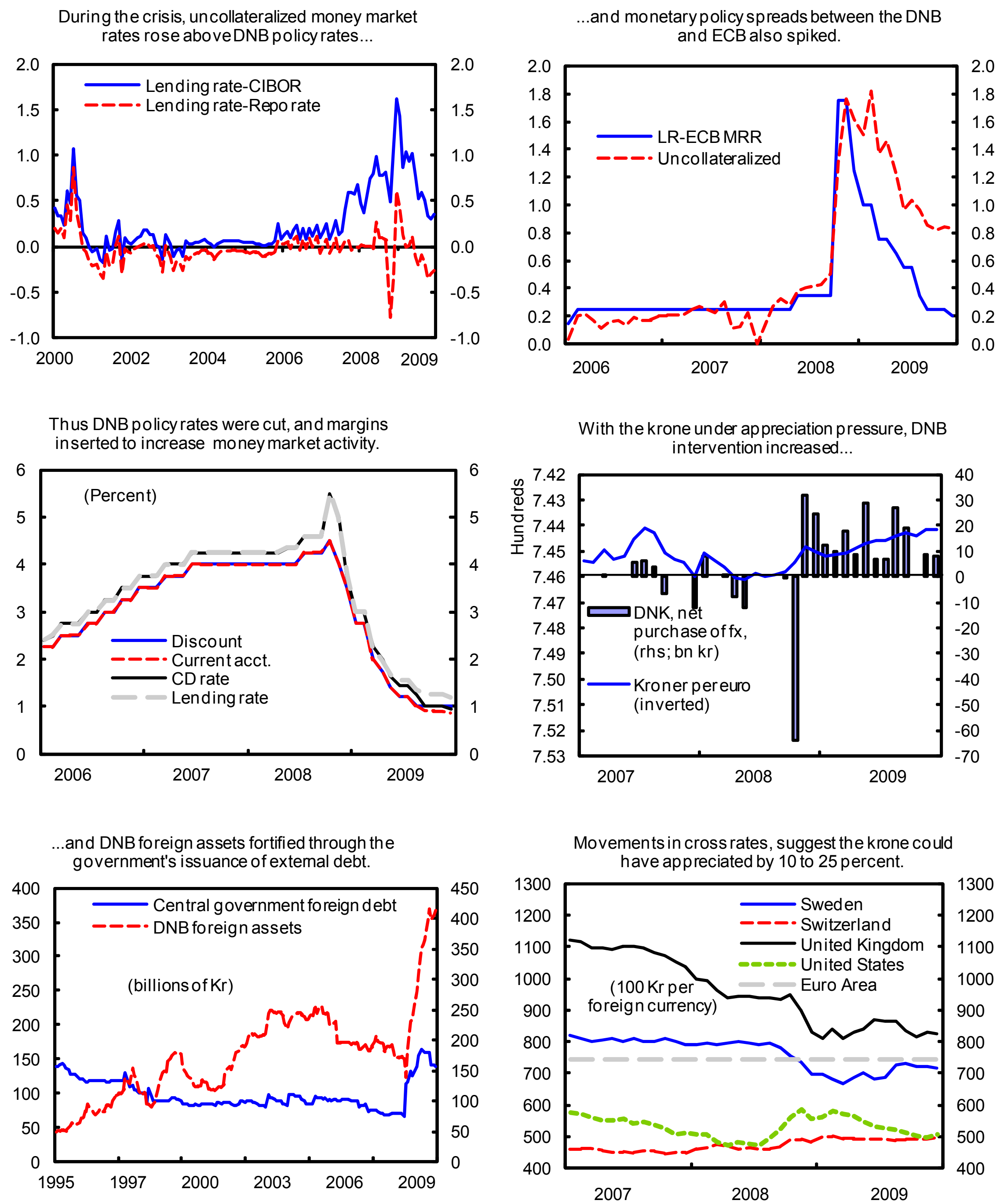
Sources: Haver Analytics; Danmarks Nationalbank; and IMF staff calculations.

Figure 4. Denmark: Labor Market Developments, 2005–10



Sources: Haver Analytics; and IMF staff calculations.

Figure 5. Denmark: Monetary and Exchange Rate Policies



Sources: Haver Analytics; Danmarks Nationalbank; and IMF staff caluclations.

II. Outlook and Risks

10. **Growth is projected to reach 2.5 percent in 2010, and to decelerate to 2 percent next year.** Output began to rise again in the second half of 2009, supported by private and public consumption, stock rebuilding, and a lagged rebound in exports—linked to strength in German and Swedish imports. New orders have strengthened, while employment in all industries, except construction, has begun to rebound. With the contribution of net exports projected to turn slightly negative next year, in line with some euro area slowdown, and public consumption growth curtailed, the expansion is expected to work its way mainly through domestic demand. Growth is projected to hover around 2 percent during 2012–15. With potential growth at around 1.5 percent, the output gap will be gradually closed in this period. Inflation (year average) in 2009 was 1.3 percent, and is expected to remain at 2.0 percent in the near term (Text table).

11. **Significant and wide-ranging downside risks remain**. Public consumption growth will be capped by the fiscal consolidation package, capital formation remains weak, and private consumption has only started to rebound—experience indicates that its recovery from housing and banking shocks can be protracted. Danish interest rates remain unusually low, and will most likely increase in tandem with ECB rate hikes, negatively affecting housing and other asset prices. Highly leveraged balance sheets and variable interest rate loans leave corporates and households vulnerable to higher interest rates, with possible knock on effects to banks and the real economy. Proposed Basel III rules create some uncertainties as to the operation of Denmark's key mortgage bond market. Finally, external uncertainties continue to be high, with euro area growth in particular subject to downside risk. The authorities broadly agreed with staff's risk assessment, adding a demography-driven drop in labor supply growth as a downside risk to medium-term growth.

Table. Denmark. Medium-term Scenario, 2008–15
(Percentage change, unless otherwise indicated)

	2008	2009	2010	2011	2012	2013	2014	2015
Real GDP	-0.9	-4.7	2.5	2.0	2.0	2.0	1.9	1.9
Real domestic demand	-0.5	-6.2	3.0	2.8	2.1	2.0	1.9	1.9
Private consumption	-0.2	-4.6	3.3	3.0	2.8	2.7	2.7	2.7
Public consumption	1.6	3.4	2.6	1.3	0.8	0.7	0.6	0.5
Fixed investment	-4.7	-13.0	-4.0	4.4	2.0	2.0	2.0	2.0
Change in stocks 1/	0.3	-1.7	1.0	0.0	0.0	0.0	0.0	0.0
Net exports 1/	-0.5	1.7	0.0	-0.7	-0.1	0.0	0.0	0.0
Exports	2.4	-10.2	3.9	3.7	3.8	3.9	3.7	3.7
Imports	3.3	-13.2	3.9	5.2	4.0	3.9	3.8	3.8
Current account 2/	2.0	4.1	3.6	3.2	3.0	2.9	2.7	2.5
Inflation								
Consumer Prices	3.4	1.3	2.0	2.0	2.0	2.0	2.0	2.0
Labor market								
Employment	-1.4	-1.7	-0.6	-0.4	-0.1	0.1	0.2	0.2
Average unemployment rate	1.9	3.6	4.2	4.5	4.4	4.0	3.5	3.0
Public finance								
General government balance 2/	3.4	-2.8	-5.0	-4.4	-3.4	-2.1	-1.1	0.0
General government structural balance 3/	2.3	-0.2	-1.9	-1.0	-0.9	-0.4	-0.2	0.0
General government gross debt 2/	34.2	41.4	44.4	47.0	48.6	48.8	48.0	46.3
Output gap 3/	0.5	-2.8	-2.4	-1.9	-1.4	-0.9	-0.5	0.0

Sources: Danmarks Nationalbank, Statistics Denmark , and IMF staff estimates.

1/ Contributions to growth
2/ In percent of GDP
3/ In percent of potential output.

III. Policies and Discussions

12. **Putting growth on a steady and sustainable path while reducing vulnerabilities will be the main challenge.** As the durability of the ongoing recovery is not yet established, withdrawal of policy support should be cautious and carefully calibrated. With remaining vulnerabilities in the financial sector, and in view of concerns about productivity growth and external competitiveness, strengthening the resilience of the financial sector and improving labor productivity growth remain a priority.

A. Fiscal Policy

13. **Fiscal policy in 2009–10 has been appropriately counter-cyclical.** Staff welcomed the swift and strong fiscal response to the recession. A favorable pre-crisis fiscal position—a combination of a budget surplus and low debt—had provided ample room for fiscal maneuver, which was appropriately used. The authorities agreed that with growth resuming, the focus of fiscal policy now had to shift to returning to a trajectory that ensured sustainability while avoiding putting the recovery at risk.

14. **There was a consensus that a credible consolidation strategy to reduce the general government deficit to below 3 percent of GDP by 2013 should anchor fiscal policy.** Staff argued that the widening of the deficit, large increase in debt, and looming

pressures from population ageing made consolidation imperative. Bringing down the deficit to below the Stability and Growth Pact's ceiling over the next three years would strike a proper balance between support for a still fragile recovery and the need to return to a sound underlying fiscal position**.** The authorities agreed that the recommended 2013 deficit target was appropriate, and emphasized that a credible fiscal consolidation was also essential for maintaining the credibility of the peg with the euro. In both staff's and the authorities' view, further adjustment beyond 2013 would be needed to achieve headline and structural balance in 2015—the pre-crisis medium-term target and a condition for preparing for the costs of population ageing and ensuring fiscal sustainability.

15. **The three-year consolidation envisaged in the draft 2011 budget is overall appropriate.** Consolidation measures of some 1.5 percentage points of GDP to be implemented during 2011–13 are equally divided between spending reductions and revenue increases (Box 1). In the mission's view, the consolidation package targeted the recommended reduction in the deficit. The authorities clarified that according to their calculations, which incorporate the delayed multi-annual effects of the large easing in 2009–10, frontloading of the measures would not hamper the recovery: the net negative impact of these measures on economic activity would be near zero in 2011 and gradually increase the following two years. Staff and the authorities agreed that under these conditions some frontloading of the measures could also help establish the package's credibility. However, if downside risks to the growth outlook were to materialize next year, shifting 2011 measures to the outer years, but without changing the overall consolidation envelope, would be appropriate.

16. **Staff would have welcomed greater emphasis on limiting public consumption growth.** Staff cautioned that the revenue measures included in the draft 2011 budget would raise the tax burden from already very high levels, exacerbating work disincentives. The mission also pointed to the authorities' declared tax freeze intention. In response, Ministry of Finance officials argued that achieving the consolidation goals solely through expenditure cuts would have been impractical and that significant personal income tax cuts introduced by the 2009 tax reform would broadly offset the impact of the revenue hikes. The design of the revenue measures and a decision to reduce the duration of unemployment benefits—which staff welcomed—would further mitigate work disincentives. Staff and the authorities agreed that reining in spending growth was the key medium-term fiscal policy challenge as public consumption as a share of GDP would continue to significantly exceed medium-term targets even after the cuts.

17. **The important spending responsibilities and large autonomy of municipalities make curtailing public consumption growth particularly challenging.** Municipalities are responsible for around 60 percent of general government employment and spending—significantly higher than in any other EU15 country—and enjoy a large degree of spending

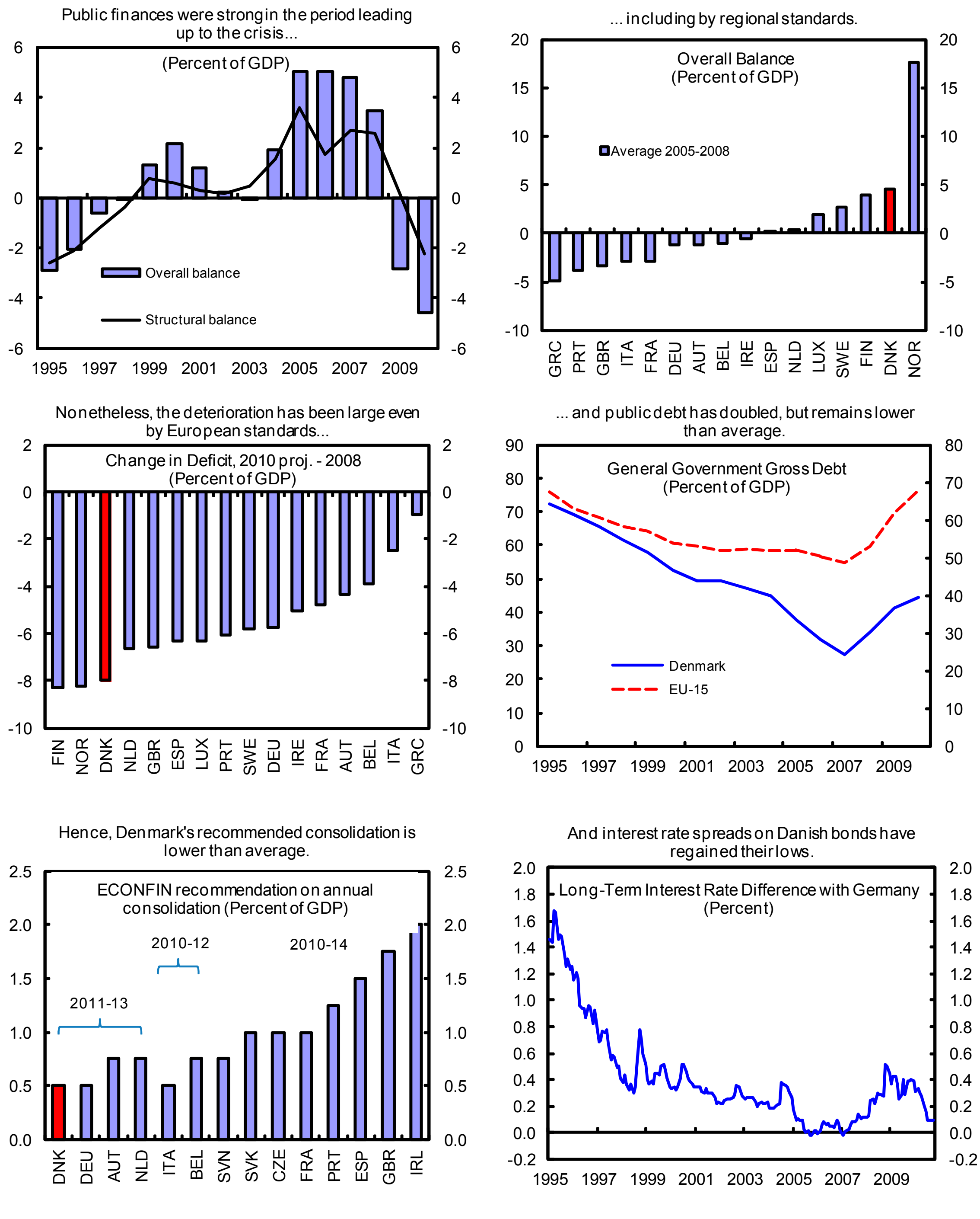
autonomy, notably in the welfare area,[3] and tax autonomy. Municipalities collect less than 40 percent of general government revenue, however, and receive grants from central government to close the substantial spending-revenue gap—they are not allowed to run deficits. Yearly agreements between central government and municipalities determine the size of the grants and simultaneously cap municipal spending. In spite of these agreements, public consumption growth at the municipal level has persistently exceeded ceilings, and a sizeable overrun is again projected in 2010 (Annex I). A new agreement between the central government and the municipalities freezes 2011 municipal welfare spending in real terms, and introduces additional reporting requirements—notably, preparation of half-year accounts—and stronger collective and individual sanctions.

18. **Complying with next year's municipal spending ceilings and meeting the related general government deficit target will be essential.** In spite of the 2010 overrun and continued underlying strong spending pressures, representatives of the municipalities expressed strong commitment to the new agreement, and confidence in their ability to comply with the spending freeze. Central authorities did not expect further spending overruns in 2011 either, given the enhanced reporting and sanctions. Staff welcomed the improvements, but cautioned that they remained untested and that additional steps to further strengthen the monitoring of municipal budget execution and the sanctions should be considered. Measures could include a requirement to provide accurate and up-to-date quarterly budget execution data, a more systematic monitoring of municipalities with a poor budget execution record, and immediate corrective actions when spending overruns materialize during the course of the year.

19. **Controlling public consumption growth in municipalities raises broader policy issues.** With the domestic debate focused on improvements in budget executing and monitoring techniques, staff argued that it also should touch upon issues related to the desired level of welfare spending and that of public consumption more generally in Denmark. To generate a wider policy debate on these issues and give a higher profile to the yearly central-municipal agreements, staff recommended a more systematic assessment and discussion both before and after the budget year. The evaluation could include an analysis of the agreements' contribution to achieving Convergence Programme objectives. The evaluation could be in the form of a regular report prepared by a dedicated independent fiscal commission/institution with special expertise. The authorities agreed with the need for a broader debate on welfare spending and were open to the idea of an independent assessment, but argued that it could be prepared within the existing institutional framework.

[3] In terms of the composition of municipal spending, welfare spending accounts for more than half of total municipal spending in Denmark, also significantly higher than in any other EU15 country.

Figure 6. Denmark: Fiscal Developments in a European Perspective, 2005–10



Sources: Denmark's Ministry of Finance; Danmarks Nationalbank; Statistics Denmark; and staff estimates.

Box 1. Denmark: Planned Fiscal Consolidation

In May 2010, the Danish government and the main opposition party agreed on measures to consolidate public finances during 2011–13, to bring down the deficit to below 3 percent by 2013.

Spending measures:

- **Public consumption growth capped (in real terms) in 2011–13**. Relative to previous spending plans, this entails a budget improvement of 0.6 percent of GDP.

- **Enhanced mechanisms to ensure municipal spending control**. The mechanisms, taking effect in 2011, imply that the central government grant can be reduced for the municipalities as a whole if budgeted or actual spending grows more than agreed. Moreover, sanctions are tightened with respect to individual municipalities that raise taxation to spend more (if and when the municipalities as a whole exceed the agreement on municipal taxes).

- **Reorientation of spending priorities within a spending envelope of 0.6 percent of GDP**. In the municipalities, the budget for social welfare spending is kept unchanged at the 2010 budget levels in real terms. In the central government, a general savings of operating costs of ½ per cent per year in 2011–13 is envisaged.

- **Targeted central government spending cuts with savings redirected towards social spending**. These include cuts in certain cultural and educational activities; capping development aid at 2010 nominal levels; and reducing child benefits.

- **Reform of the unemployment insurance scheme**. Reduction in the duration of the benefit from 4 to 2 years.

Revenue measures:

- **Suspension of automatic indexation of the thresholds for income taxes in 2011–13**. This measure applies to the basic income tax allowance, the income threshold for the top-bracket personal income tax and a number of other thresholds in the tax system. The suspension is neutral from the income distribution point of view, and will provide revenue of approximately 0.3 percent of GDP in 2013.

- **Deferral of the planned increase in the income threshold for the top-bracket personal income tax rate for three years**. This results in gross revenue of around 0.1 percent of GDP per year.

- **Annual ceiling of DKK 3,000 on tax deductions for trade union fees, and limitations on tax deductions of certain employer contributions**. The immediate revenue is estimated at about 0.1 percent of GDP.

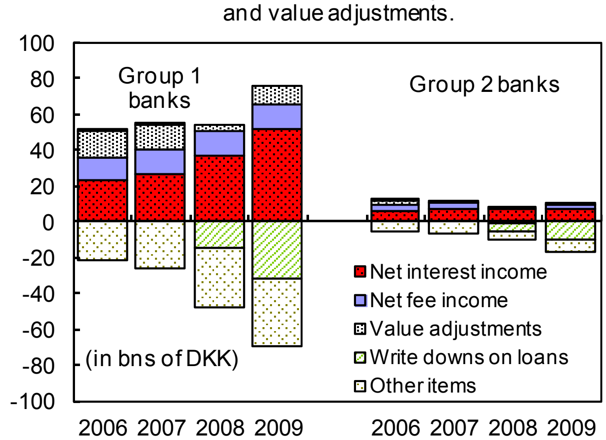
B. Monetary and Financial Sector Developments

20. **The authorities noted that recent monetary policy operations under the peg were driven by euro area developments.** Danish money market spreads versus the euro area had further narrowed since July due to a rebound of area money market rates. The authorities clarified that to ease the resulting pressure on the krone, they had intervened in the foreign exchange market and raised deposit rates—fully in line with their stated policy to maintain a tight peg with the euro. The authorities also noted that maintaining a tight peg in a turbulent financial environment was complicating monetary operations and that euro adoption could be beneficial in this respect.

21. **Fortifying financial stability and resilience while exiting from stabilization measures enacted during the crisis will be a key challenge.** Initial measures included a blanket guarantee on claims by all depositors and senior debtors, a resolution process for insolvent banks, and government capital injections. Additional measures and revisions—focusing on private sector solutions—were added as developments evolved (Box 2). Coupled with the upturn in global financial markets, these measures have had a strong positive effect on the financial system. However, some components are scheduled to lapse as the recovery takes hold.

22. **The overall state of the banking system has improved.** Large bank (Group 1) write-downs and impairments were sizable in 2009, with some improvement in the first half of 2010 (Figures 7–8). Profits of large banks have recovered reflecting growing net interest income and positive valuation adjustments (Text figure). In particular, the sharp fall in lending growth has been reversed against a background of wider interest rate spreads. A reduction in risk weighted assets as well as capital injections—both by the authorities and stand-alone issues—have improved banks' capital ratios, as large exposures have shrunk. Normalization of markets and official support have also strengthened liquidity coverage. Overall, recent National Bank stress tests confirm the adequacy of capital ratios of major banks to withstand further deterioration in the economic environment—including European sovereign disturbances.

Bank revenues remain robust despite writedowns and value adjustments.

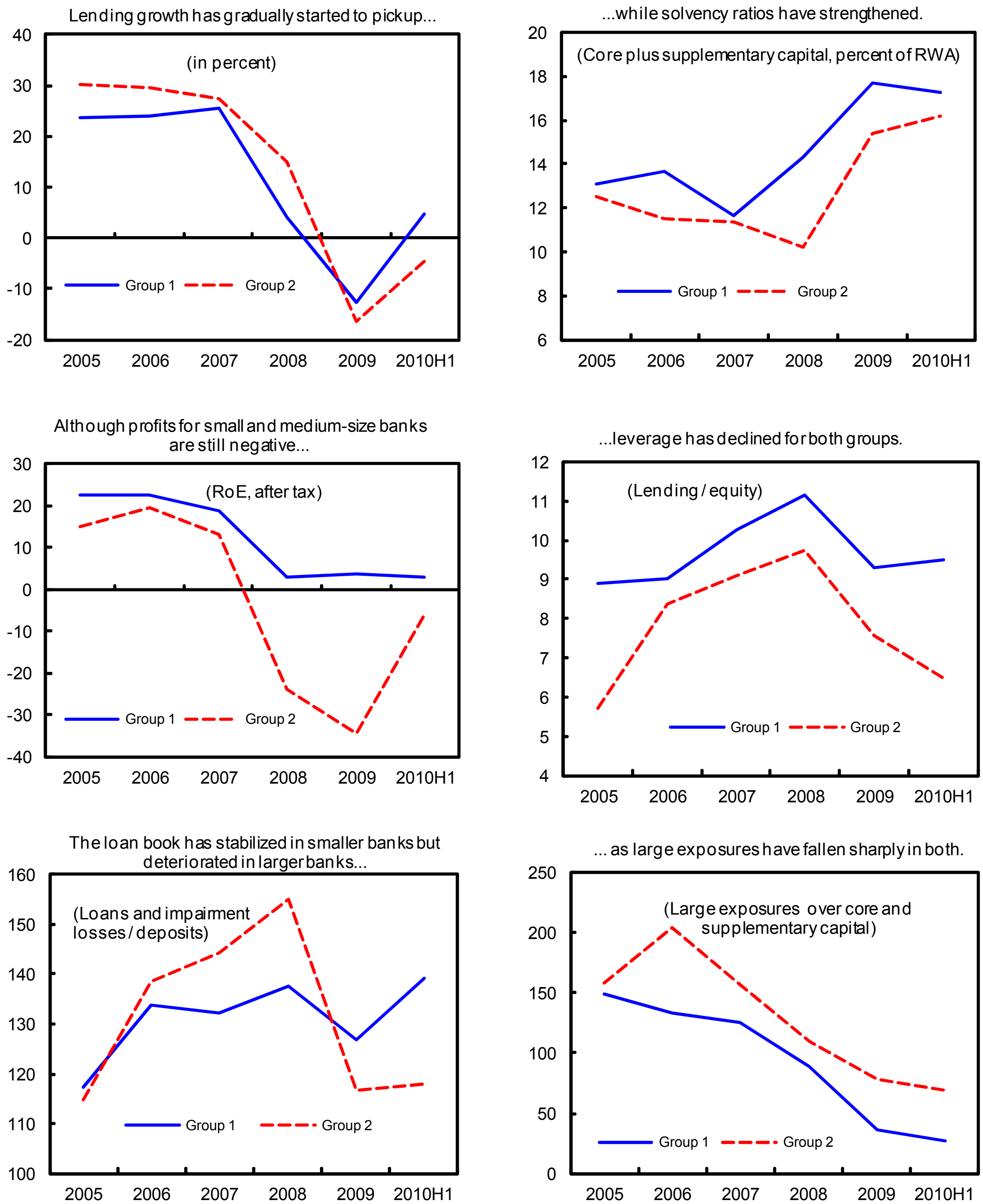


Box 2. Denmark: Financial Sector Policy Initiatives, 2009–10

Key elements of the authorities original package of financial stabilization measures (*Bank Stabilization Package I)* introduced in Fall 2008 have been revised and new initiatives added as developments have unfolded:

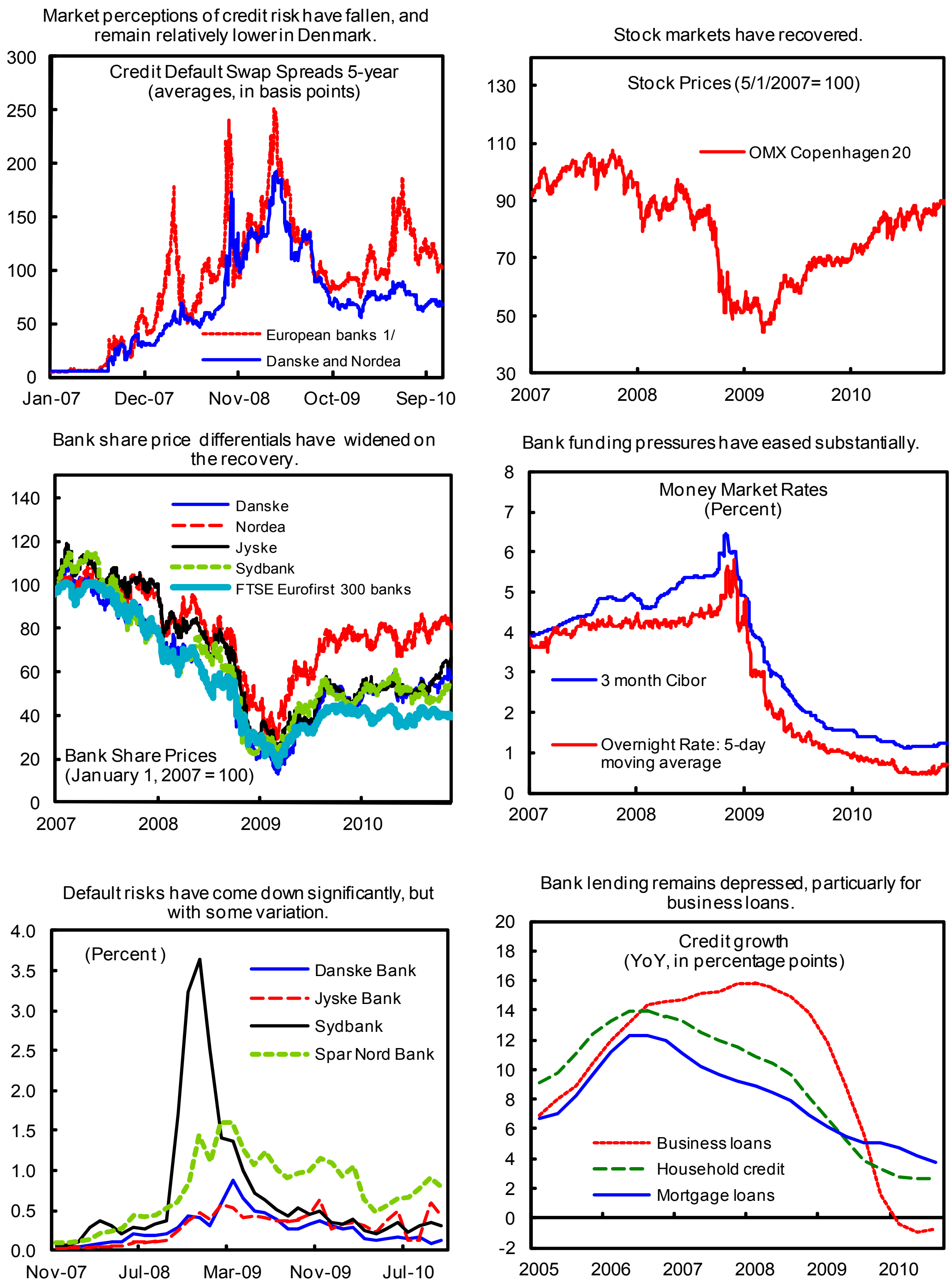
- In September, 2010 the full and unlimited guarantee on individual deposits was replaced by a new deposit insurance scheme in line with revised European Union requirements (€100,000 coverage), covering about 45 percent of banking institutions' deposits.
- The full guarantee on bank debt—which expired end-September 2010—has been adjusted to allow banks to apply for individual guarantees, and extended to end-2013. The majority of banks have joined the scheme—agreeing to restrictions in their activities (e.g., caps on remuneration; dividend payouts) while guarantees are in effect. As of end-June 2010, guarantee commitments of DKK 364 billion had been made to 63 institutions, with 50 institutions issuing DKK 198 billion of government backed debt.
- The resolution company (*Financial Stability Company* (FSC)) has taken over eight small and medium-size banks. As of 2010H1, FSC's total assets amounted to DKK 46 billion (10.5 percent of GDP; 1 percent of system assets). The FSC has received DKK 15 billion from The Private Contingent Association (constituted by financial institutions) in fee payment for the general government guarantee and is expecting an additional DKK 10 billion in first loss guarantee from The Private Contingent Association. The total payment from The Private Contingent Association will thus add up to DKK 25 billion. The FSC yielded a profit of DKK 9.5 billion in 2009, with further profit of DKK 6 billion expected for 2010.
- In October 2008, the authorities allowed pension funds to use a market rate rather than a market rate plus 25 basis points when discounting their liabilities. This decreased the gap between asset and liability rates, reducing the need to divest mortgage bond holdings—which comprise about 30 percent of the market.
- To increase liquidity, the DNB eased collateral requirements and expanded the base through the creation of temporary credit facilities that lasted until end-September 2010. Banks were allowed: (i) to issue "loan bills" which could be used as collateral at the DNB; and (ii) borrow at the DNB on the basis of their excess capital adequacy (less a 1 percent margin). The DNB also entered into currency swap agreements with the US Federal Reserve (for $15 billion; expired February 2010) and the ECB (€12 billion; open-ended). Other measures to increase liquidity included the postponement of VAT and income tax payments by non-financial firms; the ability of individuals to withdraw money from compulsory special pension saving schemes; and new export credit facilities.
- In February 2009, a second package agreement (*Bank Stabilization Package II)* , aimed at enhancing capital, passed. It allowed credit institutions to apply (until end-June 2009) for state-funded capital injections. Forty-three credit institutions received a total of DKK 46 billion in the form of hybrid core capital, with interest rates between approximately 9 and 11.25 percent depending on the individual institution's risk. The loans may be redeemed after three years.

Figure 7. Denmark: Banking System Indicators[1]



Sources: Danish Financial Supervisory Authority; and IMF staff estimates.
[1]Group 1 institutions include banks with total assets greater than DKK 50 billion. Group 2 institutions include banks with total assets under DKK 50 billion.

Figure 8. Denmark: Developments in the Financial Sector



Sources: Bloomberg; Danmarks Nationalbank; Moody's KMV; and Statistics Denmark.
[1]Average of RBS, HBOS, HSBC, UBS and Barclays.

23. **Mortgage banks performed relatively well during the crisis.** The drop in real estate prices brought a rise in delinquencies to still very low levels (from 0.1 to 0.6 percent of outstanding loans) and reduced profits (return on equity, on average, declined from 8.4 percent in 2007 to 1.5 percent in 2008 before recovering in 2009 to 5.2 percent). Reflecting the government guarantees and the strength of the mortgage bond market throughout the crisis, mortgage banks were able to borrow and raise their capital ratios, while gradually improving their profitability.

24. **Staff and the authorities agreed that risks remain.**

- Bank reliance on wholesale funding rose in line with lending and leverage, increasing vulnerability. Some medium-size banks (Group 2) have large concentrated exposures to commercial real estate, and were hit hard as inter-bank markets froze and asset prices faltered.

- Write downs and impairments remain elevated and exposure to weaker parts of the economy, particularly among smaller banks, remains large. Large banks have significant cross-border exposure (Text table). Further losses may need to be recognized near-term. Lending growth overall is still negative, and some small banks are reporting losses.

Denmark: Foreign Bank Claims (as of June, 2010)

	US$, billions	% of GDP
To all countries	221	73.5
Sweden	52	17.4
Finland	34	11.3
Norway	31	10.2
Germany	14	4.5
Ireland	16	5.5
U.S	9	2.8

Source: BIS.

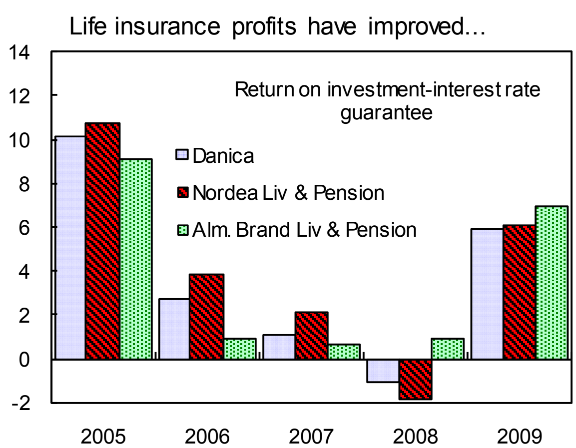
- Use of adjustable rate mortgages (ARMS) has grown rapidly, and now comprises over 65 percent of the mortgage market. The practice exacerbates the macro exposure to higher interest rates—and could hinder the rebound in consumption going forward.

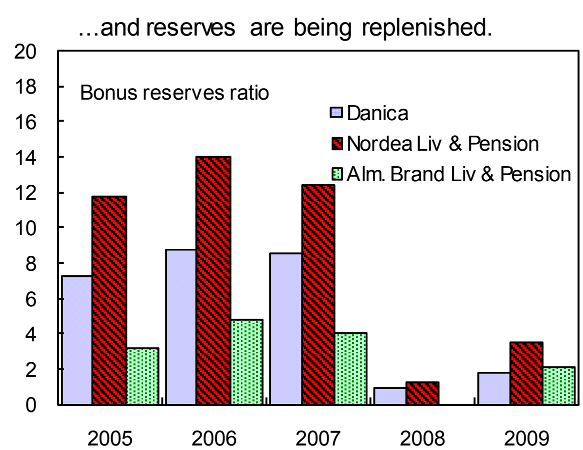
- Banks tightened lending standards during the crisis. However, the demand for stronger collateral caused banks to funnel new loans through their mortgage credit arms, resulting in a steady increase in mortgage credit. At the same time, the household debt to disposable income ratio remains elevated, at around 300 percent, and the high share of variable rate loans is an additional source of vulnerability.

25. **The authorities noted that, so far, phasing out the financial support has gone smoothly.** The blanket government guarantee expired end-September, 2010 without any disruption, including in the inter-bank market. The authorities expressed confidence that most banks will be able to replace the government's capital injections and borrowing under government guarantees with private sourced funding.

26. **The authorities expressed serious concerns with some Basel III proposals.** Proposed liquidity regulations would restrict the use of mortgage bonds in liquidity ratios. The authorities stressed that a rapid shift from the liquid and deep mortgage bond market toward the smaller government bond market could create some market disorder. They also emphasized that the Danish mortgage bond market was a somewhat unique institution and that possible new liquidity instruments would be inferior. In particular, such instruments could introduce foreign exchange risk, or require central bank support. Staff was open to the authorities' concerns, but noted that a long transition period would give the Danish mortgage bond market time to adjust, to the extent needed. To minimize any possible disruptions to liquidity management, the authorities could start considering alternative solutions (Box 3).

27. **Pension and insurance sector outcomes have improved, but challenges remain.** The profitability of insurance companies has picked up, allowing reserves to be gradually replenished (Text figures). Solvency ratios within the pension and insurance sector remain sound. Moreover, the protection system implemented at the height of the financial crisis—which forced customers to pay extra to leave the system—has lapsed, and interest rates paid on customers savings were raised slightly in January 2010. At the same time, the provision to apply an adjusted higher rate to discount provisions—and thus bolster insurance companies' financial health—was extended until end-2010. Notwithstanding the recent hike, the authorities stressed that as part of the financial stability agreement, companies agreed to be more prudent in setting interest rates on savings.





Box 3. Denmark: How Will Basel III Liquidity Proposals Impact Danish Bond Markets?

Mortgage bonds are the predominate asset in Danish financial markets, and a key part of financial institutions' liquidity management. The new *Basel III liquidity proposals* would place a lower weight on mortgage bonds versus government paper in the *Liquidity Coverage Ratio (LCR),* and put greater emphasis on longer instruments in the *Net Stable Funding Ratio (NSFR)* . Specifically, under current plans, mortgage bonds will be considered a *level 2* asset, with a 40 percent limit in the portfolio of liquid assets, and a 15 percent haircut. Given that such bonds are currently assumed to be fully liquid, this change will require banks to shift out of mortgage bonds and into government bonds. Similarly, Danish mortgage bonds with less than 1 year maturity will not be included in the NSFR, while longer-term loans (>1 year) will need to be fully financed by stable funding. Thus Danish ARM loans—which increasingly dominate the market—will become less attractive.

In response, the Danish authorities—as well as other Nordic officials—have noted that during the financial crisis, mortgage bonds were as liquid as government bonds, and that they are only exposed to limited credit risk. Loan-to-value ratios are strictly set at 80 percent, while full recourse, senior claim status, and a fast / efficient foreclosure process are the norm. Efforts to have the proposals amended to recognize the specificity of the Danish mortgage bond market are ongoing.

If these Basel proposals are implemented without change, what will be the impact on Danish bond markets, and should they be mitigated? Extrapolation of a mid-2010 quantitative impact study to the full Danish banking system indicates a liquidity shortfall of some 41 billion euros. Banks currently hold about 80 billion of the 363 billion euro mortgage bond market. About half of the banks holdings, or some 11 percent of total mortgage bonds, will need to be shifted out of banks. Given this small proportion and a long transition period (until 2015), the price impact on the mortgage bond market should be limited.

Nominal Amount of DKK Government Bonds and DKK Covered Bonds
(at end-2009, distributed by remaining time to maturity)

	Time to Maturity			
	< 5 yrs.	5 to 10 yrs.	> 10 yrs.	Total
	(in billions of euros; unless otherwise noted)			
Outstanding DKK government bonds	30	23	15	68
o/w in govt. funds	7	2	1	10
o/w in MFIs	3	4	0	7
o/w in free circulation	20	17	14	50
DKK covered bonds	198	30	135	363
QIS applied to full banking system 1/				
(in billions of euros)				**40.6**
(shortfall, % of DKK govt. bonds)				0.81
% reduction in total DKK covered bond market				11.2

Source: Danmarks National Bank and Danish FSA letter to BCBS, August 2010.
1/ GHoS: Government and Head of Supervisors, Quantitative impact study.

The impact on the government bond market, however, could be more significant given that 41 billion euros represents 81 percent of the freely circulating government bond market. To limit price effects, the authorities could consider alternative liquidity instruments. Regarding the NFSR, while Danish ARM loans within mortgage bond strictures carry little risk to financial intermediaries, they can pose a macro risk. Movements in interest rates will have a sizable impact on real estate values, and thus on the wider economy. Therefore, a new NSFR which promotes a reduction in Danish ARM loans should be welcomed.

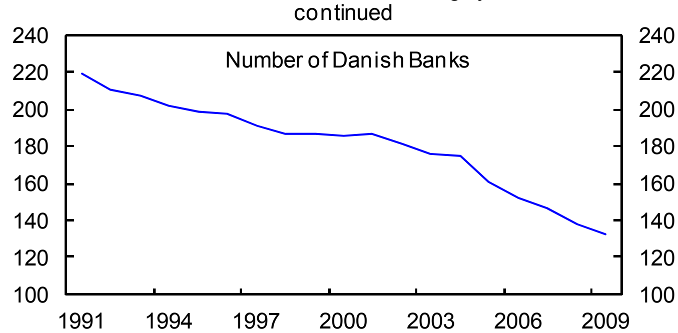
C. Financial Sector Supervision

28. **The central bank and the supervisory authorities have strengthened collaboration and information sharing.** The Financial Supervisory Authority (FSA) is responsible for micro-supervision, while the DNB handles macro-prudential supervision. The granting of government guarantees prompted increased interaction between FSA and DNB, and enhanced access to bank data. To improve the DNB's macro-prudential capabilities, statutes have been revised to allow it to independently collect data for macro-prudential purposes as well as micro-level bank data. In addition, the authorities conduct joint liquidity stress tests.

29. **Cross-border supervision has been enhanced, in particular, among Nordic and Baltic authorities.** In August, Denmark joined other Nordic and Baltic countries in signing a cooperation agreement on cross-border financial stability, crisis management, and resolution—the first ever implementation of a EU-wide initiative. Moreover, supervisory colleges have been extended to include all large banking groups.

30. **The authorities noted that some warranted consolidation of Group 2 (medium-size) banks would likely occur due to the compliance costs of Basel III.** They stressed the trend decline in the number of banks over the last few decades (Text figure). The authorities felt that banking sector restructuring would occur organically as the new Basel III regime came into effect and would not require additional incentives.

Consolidation in the Danish banking system has continued



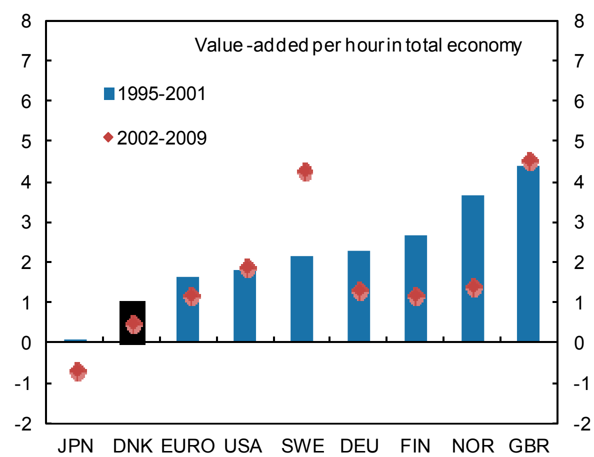
Source: Danish Financial Supervisory Authority.

31. **Staff and the authorities agreed that all banks should accept the new resolution scheme.** It replaces a temporary arrangement introduced in response to the 2008 banking crisis, and is in line with best practices. However, legal constraints prohibit making it mandatory. At their next general shareholder meetings, banks need to decide whether to be governed by the new scheme or remain under corporate bankruptcy procedures in the event of insolvency. The authorities thought that most banks would join the resolution scheme voluntarily, but private market participants expressed some doubts.

IV. LABOR MARKET AND COMPETITIVENESS

32. **With Denmark's flexicurity model expected to continue to perform well, the policy focus is now shifting to looming labor supply pressures.** The authorities were confident that the jump in conjunctural unemployment would be absorbed by the recovery. Noting that labor supply is projected to decline over the medium term due to demographic developments, they stressed that the recent reduction in the duration of unemployment benefits from 4 to 2 years as well as the 2009 tax reforms would increase labor supply. Staff emphasized that the increase in the retirement age agreed in the 2006 welfare reform would not take effect until 2019, and that more immediate measures, including steps aimed at phasing out early retirement schemes and reforming sickness and disability leave benefits, would be needed.

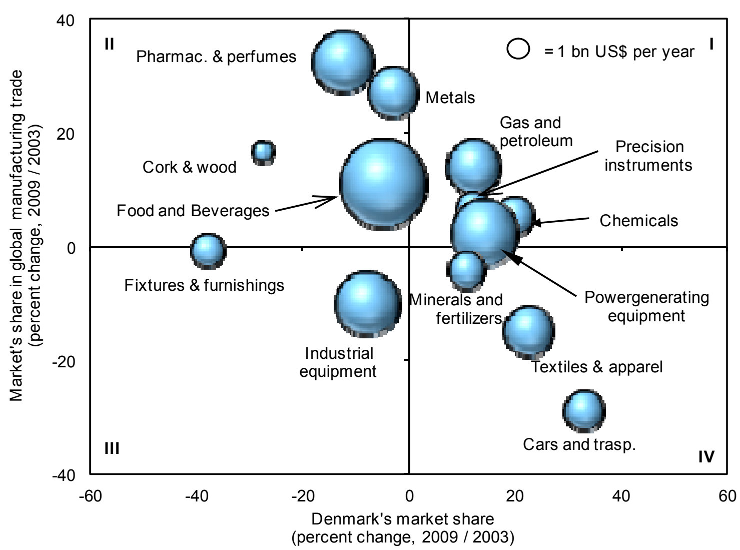
33. **Labor productivity growth in Denmark has been below the average of comparable advanced economies (Text figure).** A significant portion of the underlying decline in labor productivity does not appear to be related to under investment, but rather it is due to inefficient resource allocation.[4] According to the authorities, the allocation of resources between high-productivity and low-productivity firms within the same industry is inefficient. They agreed with staff that reforms that intensify competition and accelerate firm exit and entry, particularly in services, should help in the diffusion of knowledge and increase productivity in both the non-tradable and tradable sectors. The authorities also pointed to the concentration of highly educated workers in the public sector relative to the private sector. Staff recommended measures that increase the return to education, at higher skill levels in particular, which also would help reallocate resources to more productive areas. Staff furthermore noted that Denmark's flexible labor market supports productivity overall, but higher turnover could in some instances decrease incentives to invest in firm-specific human capital, as also suggested by relatively high public spending on job-related training (Annex II).



[4] See Danish Economic Council Fall Report, 2010.

34. **Exports of goods have been falling for some time, but have been offset by rising investment and shipping service income (Figure 9).** Favorable terms of trade effects have also underpinned the positive current account. While value-based export market shares have declined in an amount similar to other Nordic countries, Danish exports have lost ground in key markets (e.g., Germany and the U.K.)—which may hinder technology transfer through integrated supply chains. Moreover, the structure of exports is relatively heavily weighted toward the production of food and beverages, while limited in the manufacture of high-tech goods. Overall, a quarter of Danish exports are in sectors that are declining globally (Text figure). Notably, volume growth in food and beverage sector has declined significantly of late.

Denmark's main exports have lost market share. About a quarter of Denmark's exports are in declining global markets.
(2003–09)



Note: The size of a bubble represents value of Denmark's exports in 2009.
Source: UN COMTRADE.

35. **Unit labor costs have increased, but there is no indication of exchange rate misalignment.** The unit labor cost based REER appreciated by about 10 percent during 2005–09, reflecting high wage growth and low labor productivity gains. However, weakness in the euro and lower labor cost growth have pushed the REER down by 5 percent over the past year. Nonetheless, staff estimates suggest that the krone is broadly in line with fundamentals. On average, the individual CGER methodologies indicate a slight undervaluation of around 5 percent. The two current account based approaches (macro-balance and external sustainability) suggest slightly higher undervaluation than the equilibrium exchange rate methodology.

ULC REER indicate a loss of competitiveness.

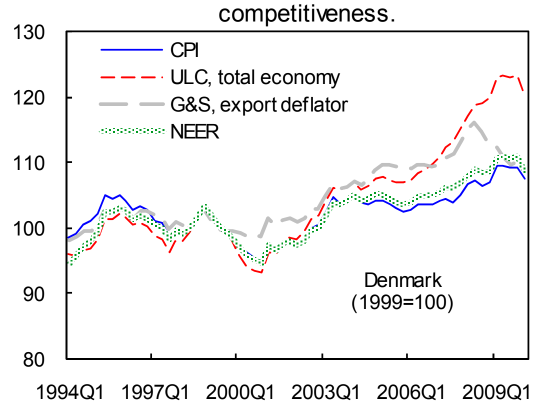
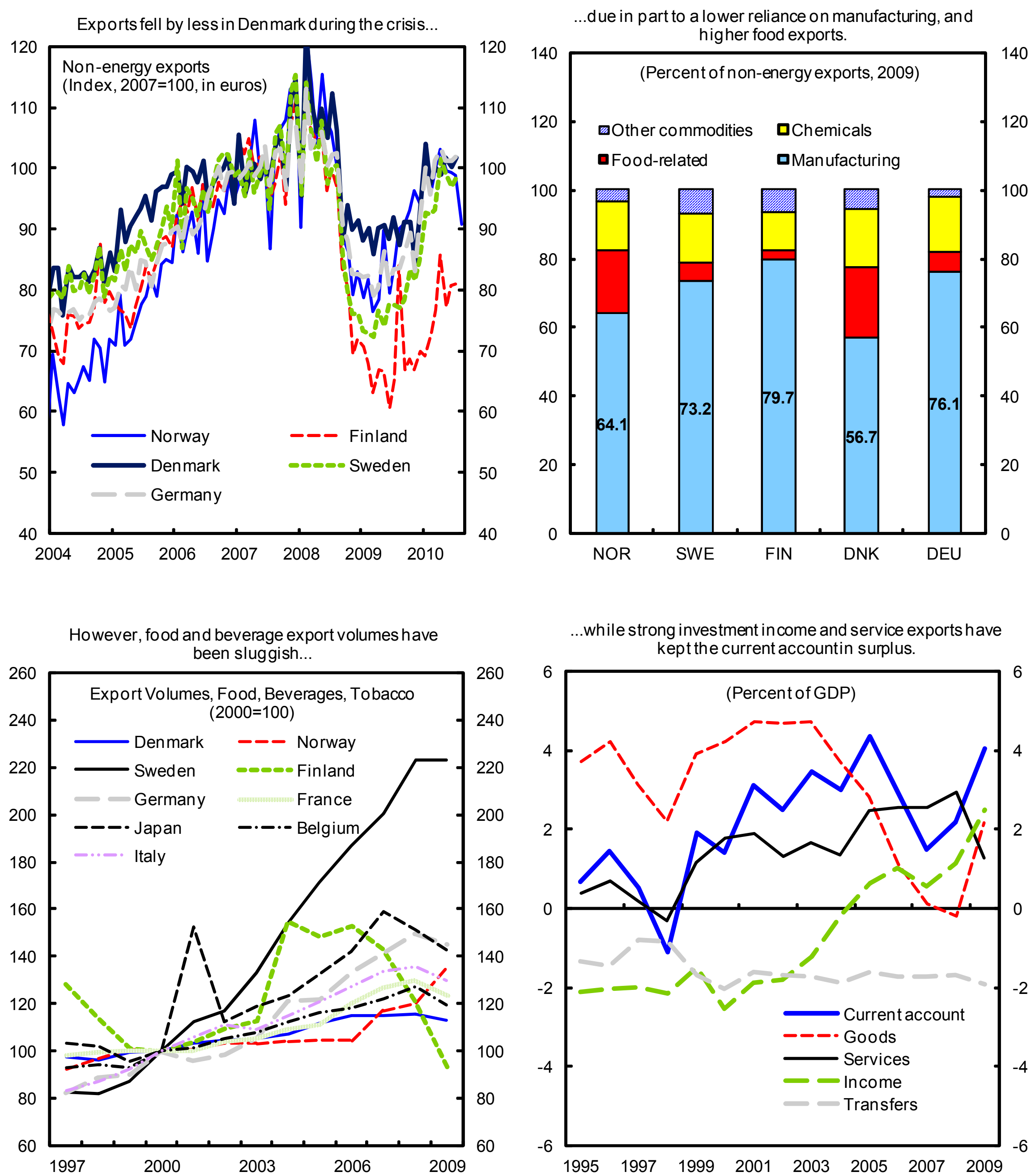


Figure 9. Denmark: External Developments



Sources: Eurostat; Haver Analytics; WITS; and IMF staff estimates.

V. Staff Appraisal

36. **A recovery is taking hold following a deep and long recession**. The rebound in the global economy, fiscal stimulus and monetary easing have supported output, and real GDP is projected to grow at about 2.5 percent this year. With the contribution of net exports projected to ease next year, in line with some euro area slowdown, and public consumption growth curtailed, growth is projected to decelerate to 2 percent in 2011 and to hover around that rate in the following years, gradually closing the output gap.

37. **The Danish policy response to the dual domestic banking and global financial crisis was overall appropriate.** Fiscal stimulus of almost 4 percentage points of GDP and major monetary easing supported activity and limited employment losses. A wide range of public interventions stabilized the financial system once global financial pressures in the fall of 2008 exacerbated domestic banking woes. And Denmark's flexicurity model helped avoid an increase in structural unemployment.

38. **The peg to the euro continues to serve Denmark well.** However, maintaining a tight peg while remaining outside the euro area is complicating monetary policy operations in the face of continued financial turbulence. Eventual euro adoption could eliminate related costs and concerns. Given the constraints of the peg, the current and foreseen monetary policy stance is appropriate.

39. **Policies need to focus on putting growth on a steady and sustainable path while reducing vulnerabilities.** With the recovery under way, fiscal policy should embark on a multi-year consolidation program. The large deterioration in the fiscal position requires a corrective response, and fiscal adjustment is the key for maintaining credibility of the exchange rate peg. Continued efforts to bolster financial sector stability and reduce vulnerabilities are also essential. Resources freed through reining in public consumption growth, together with steps to boost labor supply, productivity, and overall efficiency should spur growth.

40. **A credible adjustment strategy to reduce the general government deficit to below 3 percent of GDP by 2013 should anchor fiscal policy.** Bringing down the deficit to below the Stability and Growth Pact's ceiling over the next three year strikes a proper balance between support for a still fragile recovery and the need to return to a sound underlying fiscal position**.** Further adjustment beyond 2013 will be needed to achieve structural balance in 2015—the pre-crisis target and a necessary condition for fiscal sustainability.

41. **From this perspective, the three-year consolidation package is overall appropriate.** The package includes measures of some 1.5 percentage points of GDP that aim to bring down the deficit to below 3 percent of GDP by 2013. The measures are somewhat

frontloaded, which will establish credibility but not hamper the recovery—given the delayed multi-annual effects of the large fiscal easing in 2009–10.

42. **However, a greater emphasis on reducing public consumption growth would have been preferable.** The tax burden is already very high, raising concerns that a proposed further increase will exacerbate negative impacts on work incentives. Moreover, public sector consumption as a share of GDP will continue to exceed the authorities' indicative ceiling and additional, ageing-related, spending pressures are looming.

43. **Sustained efforts to rein in public consumption growth and meet the 2011 deficit targets are needed.** Yearly central-municipal agreements limit public consumption growth, but have not managed to eliminate persistent overruns, including in 2010. Going beyond some welcome reforms agreed for 2011, there is scope for further strengthening the monitoring of municipal budget execution and related sanctions. To give a higher profile to the agreements and generate a broader policy debate on welfare spending in Denmark, a more systematic assessment in the form of an independently prepared regular report could be considered.

44. **To address weaknesses revealed by the 2008 financial crisis, the authorities have taken important and welcome steps to strengthen financial sector supervision.** The FSA has sharpened the focus on assessing the viability of institutions' business models, and strengthened the transparency of its supervisory activities. The FSA also expanded its cooperation with DNB and extended its cross-border collaboration. The establishment of a *"supervisory diamond"*, which examines various bank ratios against benchmark thresholds, is especially welcomed. The recently signed Nordic cooperation agreement on cross-border financial stability, crisis management and resolution is also an important improvement.

45. **Nevertheless, additional actions should be undertaken to further bolster financial sector stability.** Some medium-size banks remain vulnerable—with funding continuing to depend in part on official support. The authorities' guarantees and capital injections provide a two–three year window in which financial institutions should rebalance positions and revise business models. On the regulatory and supervisory side, risks related to possibly resurfacing real estate problems or renewed international financial pressures need to be addressed, and international initiatives require domestic follow-up. In particular:

- The supervisory diamond's usefulness as an enforcement tool could be enhanced by a proactive response to breeches.

- DNB/FSA collaboration projects on monitoring financial sector risks could be further strengthened—notably with regard to exposures to wholesale funding; DNB/FSA should also, in cooperation, prepare for new macro-prudential regulation and supervision activities and requirements.

- Concrete and precise arrangements regarding intervention modalities and burden sharing responsibilities should be implemented within the Nordic-Baltic cooperation agreement.

46. **It is imperative that all banks accept the new resolution scheme.** Quick and orderly resolution is essential to minimize costs and safeguard the functioning and stability of the financial system during a period of turmoil, and the new scheme is in line with best practices. The authorities should use moral suasion and supervisory capital charges to ensure that all institutions opt for the scheme.

47. **With concerns about unemployment easing, labor market policies should re-focus on looming labor supply pressures.** Reflecting the flexibility of Denmark's labor market, there is no sign of an increase in structural unemployment in the wake of the crisis. In fact, labor supply shortages could develop over the medium term due to demographic developments. With agreed pension reforms only taking effect in 2019, more immediate measures, including steps aimed at phasing out early retirement schemes and reforming sickness and disability leave benefits, are needed to reduce labor force exit.

48. **Sluggish labor productivity growth presents a challenge.** Resource misallocation appears to be a contributing factor. Reforms that increase competition and accelerate firm exit and entry, especially in services, and measures that increase the return to education, at higher skill levels in particular, will help reallocate resources to more productive areas.

49. **It is recommended that the Article IV consultation with Denmark remain on the 24-month cycle**.

Table 1. Denmark: Selected Economic and Social Indicators, 2004–11

	2004	2005	2006	2007	2008	2009	2010	2011
							Projections	
Supply and Demand (change in percent)								
Real GDP	2.3	2.4	3.4	1.7	-0.9	-4.7	2.5	2.0
Net Exports 1/	-2.0	-1.1	-2.0	-0.2	-0.5	1.7	0.0	-0.7
Domestic demand	4.3	3.4	5.2	1.9	-0.5	-6.2	3.0	2.8
Private Consumption	4.7	3.8	3.6	2.4	-0.2	-4.6	3.3	3.0
Gross fixed investment	3.9	4.7	14.2	2.9	-4.7	-13.0	-4.0	4.4
Gross national saving (percent of GDP)	23.4	25.2	25.7	24.5	24.0	21.5	21.1	21.1
Gross domestic investment (percent of GDP)	20.4	20.8	22.7	23.0	22.0	17.4	17.5	17.9
Potential output	1.6	1.2	1.7	1.6	1.6	-1.5	2.0	1.5
Output gap (in percent of total output)	0.0	1.2	2.9	3.0	0.5	-2.8	-2.4	-1.9
Labor Market (change in percent)								
Labor force	-0.2	0.1	1.0	0.4	-2.3	0.1	0.1	-0.1
Employment	-0.4	0.9	2.2	1.6	-1.4	-1.7	-0.6	-0.4
Unemployment rate (in percent)	5.8	5.1	3.9	2.8	1.9	3.6	4.2	4.5
Prices and Costs (change in percent)								
GDP deflator	2.3	2.9	2.1	1.9	3.6	0.4	2.7	2.0
CPI (year average)	1.2	1.8	1.9	1.7	3.4	1.3	2.0	2.0
Public finance (percent of GDP) 2/								
General government revenues	56.7	58.0	56.8	55.8	55.3	55.6	53.8	53.5
General government expenditure	54.8	53.0	51.7	51.1	51.9	58.5	58.8	57.9
General government balance	1.9	5.0	5.0	4.8	3.4	-2.8	-5.0	-4.4
General government structural balance	1.6	1.6	1.6	2.1	2.3	-0.2	-1.9	-1.0
General government primary balance	3.3	6.1	5.8	5.2	3.5	-2.5	-4.4	-3.7
General government gross debt	45.1	37.8	32.1	27.4	34.2	41.4	44.4	47.0
Money and Interest rates (percent)								
Domestic credit growth (end of year)	8.9	14.9	14.1	13.1	10.9	-1.8	…	…
M3 growth (end of year)	2.7	14.3	11.4	17.0	7.7	5.0	…	…
Short-term interest rate (3 month)	2.1	2.2	3.1	4.3	4.9	1.8	…	…
Government bond yield (10 year)	4.3	3.4	3.8	4.3	4.3	3.6	…	…
Balance of payments (in percent of GDP)								
Exports of goods & services	48.9	46.7	54.9	55.5	50.0	49.7	46.9	48.4
Imports of goods & services	-43.5	-41.6	-51.0	-52.7	-47.5	-45.8	-43.6	-45.3
Trade balance, goods and services	5.5	5.1	3.9	2.8	2.5	3.8	3.3	3.1
Current account	3.0	4.3	3.0	1.5	2.0	4.1	3.6	3.2
Exchange rate								
Average DKK per US$ rate	6.0	6.0	5.9	5.4	5.1	5.4	…	…
Nominal effective rate (2000=100, ULC based)	108.9	108.4	108.7	110.9	113.9	115.3	…	…
Real effective rate (2000=100, ULC based)	116.4	119.5	120.5	126.4	128.8	125.0	…	…
Social indicators (Reference year)								
GDP per capita, PPP (current international $) (2008): $36,845; At-risk-of-poverty rate (2008): 11.8 percent.								

Sources: Danmarks Nationalbank; Eurostat; IMF's *World Economic Outlook Database*; OECD; Statistics Denmark; World Bank's *World Development Indicators*; and IMF staff projections.

1/ Contribution to GDP growth.

2/ Figures for 2010–11 reflect Ministry of Finance estimates and projections as of August 2010; pre-2010 numbers are from Danmarks Statistik.

Table 2. Denmark: Public Finances, 2004–15
(Percent of GDP)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
							Projections					
General Government												
Total Revenues	56.7	58.0	56.8	55.8	55.3	55.6	53.8	53.5	52.9	52.9	53.1	53.2
Personal Income Taxes	26.7	26.6	26.4	26.6	26.0	26.8	25.6	25.8	25.4	25.3	25.4	25.4
Labor Market Contributions	4.4	4.4	4.4	4.5	4.6	4.8	4.6	4.6	4.6	4.6	4.7	4.7
Pension Return Taxes	1.6	2.4	0.8	0.3	0.5	0.6	0.6	0.5	0.5	0.6	0.6	0.6
Company Taxes	3.2	3.9	4.4	3.8	3.4	2.4	2.6	2.5	2.5	2.5	2.5	2.5
VAT	9.8	10.1	10.3	10.4	10.1	10.1	10.1	10.0	10.0	10.0	10.0	10.0
Social Contributions	1.2	1.1	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.9
Interest and Dividends	1.7	1.5	1.5	1.6	1.7	2.1	1.5	1.4	1.5	1.5	1.5	1.5
Other revenues	8.1	8.0	8.1	7.7	8.0	7.9	7.8	7.7	7.5	7.5	7.6	7.7
Total Expenditures	54.8	53.0	51.7	51.1	51.9	58.5	58.8	57.9	56.3	54.9	54.2	53.2
Public Consumption	27.6	27.2	27.0	27.0	27.7	31.0	30.8	30.6	29.9	29.5	29.2	28.8
Transfer Incomes	17.1	16.5	15.6	15.2	15.1	17.1	17.4	17.3	17.1	16.7	16.5	16.2
Public Subsidies	2.2	2.3	2.2	2.2	2.1	2.6	2.6	2.6	2.5	2.5	2.5	2.5
Interest Expenditures	3.1	2.6	2.2	2.0	1.8	2.5	2.1	2.1	2.1	2.0	2.0	2.0
Public Investment	1.9	1.7	1.9	1.9	1.9	2.1	2.5	2.2	2.1	2.0	2.0	2.0
Other Expenditures	2.8	2.8	2.8	2.7	3.1	3.2	3.4	3.2	2.8	2.5	2.4	2.1
Balance	1.9	5.0	5.0	4.8	3.4	-2.8	-5.0	-4.4	-3.4	-2.1	-1.1	0.0
Primary balance	3.3	6.1	5.8	5.2	3.5	-2.5	-4.4	-3.7	-2.8	-1.6	-0.6	0.5
Gross Debt	45.1	37.8	32.1	27.4	34.2	41.4	44.4	47.0	48.6	48.8	48.0	46.3

Sources: Statistics Denmark; and IMF staff estimates.

Table 3. Denmark: Balance of Payments, 2004–15

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
						(in billions of DKr)						
Current Account	44.2	67.1	48.6	25.0	35.2	68.0	62.9	57.7	56.2	56.3	54.8	53.1
Balance on Goods	54.5	43.9	18.2	2.0	-3.7	39.8	32.0	23.2	13.6	13.9	14.2	15.0
Merchandise exports f.o.b.	445.9	495.2	539.0	547.0	581.0	490.5	509.4	529.0	549.4	577.4	605.8	634.2
Merchandise imports f.o.b.	-391.4	-451.3	-520.8	-545.0	-584.7	-450.6	-477.4	-505.7	-535.8	-563.6	-591.7	-619.2
Balance on Services	19.8	38.3	42.0	43.0	51.0	20.8	26.8	33.9	41.9	45.7	48.2	50.1
Exports of services, total	218.9	260.5	310.2	336.2	368.3	293.2	322.2	353.9	388.8	407.8	425.0	441.0
Imports of services, total	-199.1	-222.2	-268.2	-293.2	-317.2	-272.5	-295.3	-320.1	-346.9	-362.1	-376.8	-390.9
Balance on Income	-2.4	9.9	16.8	9.2	15.8	37.9	36.3	34.1	35.5	33.0	30.2	27.1
Receipts	92.1	149.5	164.7	187.9	189.6	169.7	174.9	178.4	185.6	189.2	192.6	195.7
Expenditures	-94.5	-139.6	-147.9	-178.7	-173.7	-131.8	-138.7	-144.3	-150.2	-156.3	-162.4	-168.6
Current transfer, net	-27.7	-25.0	-28.4	-29.3	-27.9	-30.6	-32.2	-33.5	-34.8	-36.2	-37.7	-39.1
Capital and Financial Account	-103.6	-50.9	-15.6	-22.0	-2.6	-39.8	-62.9	-57.7	-56.2	-56.3	-54.8	-53.1
Capital transfer, net	0.2	2.9	0.0	0.3	0.4	-0.4	-0.4	-0.5	-0.5	-0.5	-0.5	-0.5
Financial Account	-103.8	-53.8	-15.6	-22.3	-3.0	-39.3	-62.5	-57.3	-55.7	-55.8	-54.3	-52.5
Direct investment, net	-0.5	-19.9	-34.0	-48.0	-57.0	-42.3	-25.7	-46.3	-48.2	-50.2	-52.1	-54.1
Abroad	62.1	-97.1	-50.2	-112.3	-70.9	-84.7	-47.9	-92.8	-96.6	-100.5	-104.5	-108.5
In Denmark	-62.6	77.2	16.1	64.3	13.9	42.5	22.1	46.5	48.4	50.4	52.3	54.3
Portfolio investment, net	-87.1	-68.8	-103.3	-32.0	53.0	74.2	-65.8	-68.5	-71.3	-69.9	-72.6	-93.6
Assets	-147.4	-193.2	-155.3	-146.5	-40.4	-125.9	-155.4	-161.8	-168.3	-170.8	-177.5	-202.5
Liabilities	60.3	124.4	52.0	114.5	93.4	200.2	89.6	93.2	97.0	101.0	104.9	108.9
Other investment, net	-41.6	10.7	69.3	56.7	34.6	63.1	26.1	27.1	28.2	29.4	30.5	31.7
Reserve assets	6.2	10.9	36.7	0.2	-44.4	-172.1	-10.9	12.5	16.9	15.4	19.7	42.5
Net errors and omissions	59.4	-16.2	-33.0	-2.9	-32.6	-28.2	0.0	0.0	0.0	0.0	0.0	0.0
						(percent of GDP)						
Current Account	3.0	4.3	3.0	1.5	2.0	4.1	3.6	3.2	3.0	2.9	2.7	2.5
Balance on Goods	3.7	2.8	1.1	0.1	-0.2	2.4	1.8	1.3	0.7	0.7	0.7	0.7
Merchandise exports f.o.b.	30.4	32.0	33.0	32.3	33.4	29.5	29.1	29.1	29.0	29.3	29.6	29.8
Merchandise imports f.o.b.	-26.7	-29.2	-31.9	-32.2	-33.7	-27.1	-27.3	-27.8	-28.3	-28.6	-28.9	-29.1
Balance on Services	1.4	2.5	2.6	2.5	2.9	1.2	1.5	1.9	2.2	2.3	2.3	2.4
Exports of services, total	14.9	16.9	19.0	19.9	21.2	17.6	18.4	19.4	20.5	20.7	20.7	20.7
Imports of services, total	-13.6	-14.4	-16.4	-17.3	-18.3	-16.4	-16.9	-17.6	-18.3	-18.4	-18.4	-18.4
Balance on Income	-0.2	0.6	1.0	0.5	0.9	2.3	2.1	1.9	1.9	1.7	1.5	1.3
Receipts	6.3	9.7	10.1	11.1	10.9	10.2	10.0	9.8	9.8	9.6	9.4	9.2
Expenditures	-6.4	-9.0	-9.1	-10.6	-10.0	-7.9	-7.9	-7.9	-7.9	-7.9	-7.9	-7.9
Current transfer, net	-1.9	-1.6	-1.7	-1.7	-1.6	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8
Capital and Financial Account	-7.1	-3.3	-1.0	-1.3	-0.2	-2.4	-3.6	-3.2	-3.0	-2.9	-2.7	-2.5
Capital transfer, net	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Financial Account	-7.1	-3.5	-1.0	-1.3	-0.2	-2.4	-3.6	-3.1	-2.9	-2.8	-2.7	-2.5
Direct investment, net	0.0	-1.3	-2.1	-2.8	-3.3	-2.5	-1.5	-2.5	-2.5	-2.5	-2.5	-2.5
Abroad	4.2	-6.3	-3.1	-6.6	-4.1	-5.1	-2.7	-5.1	-5.1	-5.1	-5.1	-5.1
In Denmark	-4.3	5.0	1.0	3.8	0.8	2.6	1.3	2.6	2.6	2.6	2.6	2.6
Portfolio investment, net	-5.9	-4.5	-6.3	-1.9	3.1	4.5	-3.8	-3.8	-3.8	-3.5	-3.5	-4.4
Assets	-10.1	-12.5	-9.5	-8.7	-2.3	-7.6	-8.9	-8.9	-8.9	-8.7	-8.7	-9.5
Liabilities	4.1	8.1	3.2	6.8	5.4	12.0	5.1	5.1	5.1	5.1	5.1	5.1
Other investment, net	-2.8	0.7	4.2	3.4	2.0	3.8	1.5	1.5	1.5	1.5	1.5	1.5
Reserve assets	0.4	0.7	2.3	0.0	-2.6	-10.4	-0.6	0.7	0.9	0.8	1.0	2.0
Net errors and omissions	4.1	-1.1	-2.0	-0.2	-1.9	-1.7	0.0	0.0	0.0	0.0	0.0	0.0
						(percent of GDP)						
Memorandum items:												
Net oil and oil-related exports	1.2	1.4	1.9	1.5	1.3	0.8	…	…	…	…	…	…
Net sea transportation receipts	1.3	2.9	2.8	2.7	3.3	1.9	…	…	…	…	…	…
Current Account net of items above	0.5	0.0	-1.7	-2.8	-2.6	1.2	…	…	…	…	…	…
Gross External Debt	131.4	146.6	156.2	170.3	178.4	189.6						

Sources: National Bank of Denmark; Statistics Denmark; and IMF staff calculations.

Table 4. Denmark: Financial Sector Indicators

	2005	2006	2007	2008	2009	2010H1
	(in percent, unless otherwise indicated)					
Group 1 Banks						
Solvency ratio	13	14	12	14	18	17
Core capital ratio	9	10	8	11	14	14
Return on equity before tax	22	22	19	3	4	3
Return on equity after tax	17	18	16	3	2	2
Income/cost ratio	2	2	2	1	1	1
Interest rate risk	1	1	2	2	2	0
Foreign exchange position	4	3	4	4	3	3
Foreign exchange risk	0	0	0	0	0	0
Loans and impairment losses over deposits	117	134	132	138	127	139
Excess coverage as a percentage of the liquidity requirement	143	128	97	70	153	146
Sum of large exposures	149	133	125	89	36	27
Annual impairment ratio 1/	0	0	0	1	1	0
Growth in loans 1/	24	24	25	4	-13	5
Gearing ratios	9	9	10	11	9	9
Annual earnings per share (nominal value DKK 100) before tax 1/	190	224	228	14	27	51
Book value over net asset value	1174	1385	1527	1457	1477	1502
Price over net asset value (nominal value DKK 100)	11	12	10	9	22	1
Price over book value (nominal value DKK100)	2	2	2	1	1	…
Group 2 Banks						
Solvency ratio	13	12	11	10	15	16
Core capital ratio	11	9	8	8	13	13
Return on equity before tax	20	25	17	-27	-43	-6
Return on equity after tax	15	19	13	-24	-34	-6
Income/cost ratio	2	2	2	1	1	1
Interest rate risk	3	3	2	2	1	1
Foreign exchange position	6	9	16	9	3	11
Foreign exchange risk	0	0	0	0	0	0
Loans and impairment losses over deposits	115	139	144	155	117	118
Excess coverage as a percentage of the liquidity requirement	111	72	105	112	173	220
Sum of large exposures	158	205	157	110	78	70
Annual impairment ratio 1/	0	0	0	3	6	2
Growth in loans 1/	30	30	27	15	-16	-5
Gearing ratios	6	8	9	10	8	6
Annual earnings per share (nominal value DKK 100) before tax 1/	141	172	129	-97	-22	-17
Book value over net asset value	819	830	974	999	870	862
Price over net asset value (nominal value DKK 100)	12	11	12	40	20	3
Price over book value (nominal value DKK100)	2	2	1	1	1	…

Source: Denmark Financial Stability Authority.
1/ First half 2010 results are semi-annual.

ANNEX I. DENMARK: SPENDING CONTROL IN A HIGHLY DECENTRALIZED SYSTEM[1]

1. **Denmark has a long standing tradition of local and regional self-government, supported by strong public consensus**. The autonomy of local governments is protected in the Danish constitution, which provides for the right of municipalities to manage their own affairs independently and assigns Parliament the role of delegating a number of public functions to municipalities. The main local government bodies are:

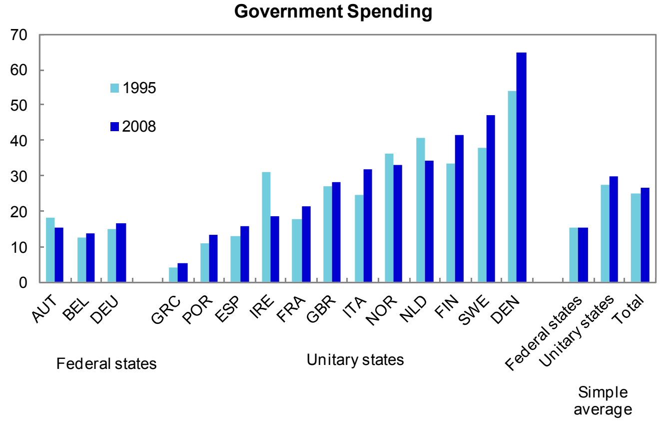
- 98 municipalities, which handle a wide range of functions including: (i) child care; (ii) primary and lower-secondary education; (iii) elderly care; (iv) preventive health care; (v) libraries, sports facilities and other cultural activities; (vi) implementation of active labor market policies.

- 5 regions, each covering several municipalities, are mainly responsible for healthcare and health insurance, but also carry out tasks related to regional development and growth, as well as specialized educational and social institutions.

- Municipalities are represented by the National Association of Municipalities (LGDK), which advances their collective interests during annual budget negotiations with the government, while regions are represented by the association of regions.

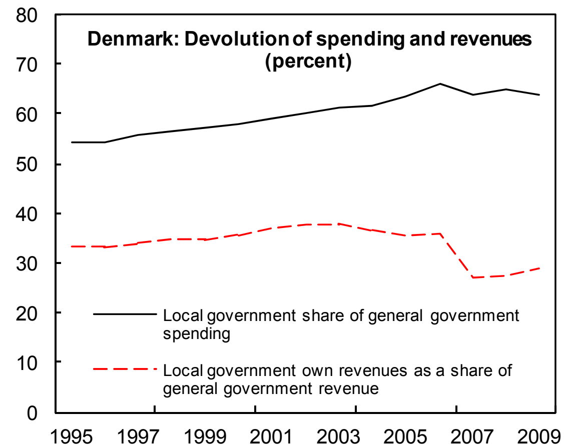
2. **In this context, sub national spending in Denmark has risen rapidly and exceeds the average level for comparator countries (Annex figure)**. Denmark stands out in international comparisons—including by both federal and unitary states—for its share of local government expenditure in general government expenditure (Text figure). Despite an already high level of decentralization in 1995—roughly 54 percent of local government spending in total spending compared to the Nordic and EU averages of 37 percent and 28 percent, respectively—the devolution of spending has risen more rapidly in Denmark. The country's share of sub national spending in total spending peaked at 64.5 percent in 2008. The share of local government employment in total government employment exceeded 60 percent in 2010.

Denmark: Local Government Spending as a Share of General Government Spending



3. **But greater devolution of expenditure responsibilities has not been equally matched by devolution of revenue assignments**. As local governments in principle cannot

[1] Prepared by Rita Babihuga (EUR)



run deficits for purposes other than investment in utility services, the broader increase in decentralization of spending without corresponding devolution of revenue responsibilities has resulted in an increasing dependency on central government grants to fill the gap[2]. While municipalities in principle have the right to determine their own tax rates and tax base, since 2003—in the context of broader macroeconomic policy—the central government has put in place a tax freeze and municipalities are forbidden from *collectively* raising the average tax rate. Individual municipal increases in the tax rate must be offset by reductions in other municipalities, negotiated within the assocation of municipalities, such that the average tax rate remains unchanged. With increased expenditure devolution and a cap on tax increases, central government transfers to local governments have risen in recent years.

4. **Fiscal vertical coordination is based on an institutionalized process of voluntary cooperation between the center and local governments**. Collaboration on the budget works through annual negotiations between the central government and local organizations, resulting in a framework agreement for the municipalities.[3] The agreements are voluntary and contain proposals including an overall expenditure ceiling and tax level for all municipalities, as well as guidelines regarding economic and political priorities in key areas for the following year. The agreements have two central characteristics. First they are collective and do not apply to individual municipalities. This generality provides some flexibility and allows for local differences—individual municipalities can deviate from plans, provided that the deviation is neutralized by other municipalities. Second the agreements are voluntary, meaning that municipalities have no legal obligation to follow them. In event of deviation by a municipality, the central government however has the option of imposing sanctions in order to neutralize the effect of the deviation. Moreover, the association of municipalities can exercise moral suasion over its individual members. Following the conclusion of negotiations, local government block grants can then be determined with the approval of parliament.

5. **Budget agreements between the central government and municipalities aim for balanced budgets at the municipal level**. An expenditure ceiling is set in nominal terms, such that it is consistent with a general government norm on real growth in public consumption spending. Tax revenues—income and real property (land) taxes—yield roughly

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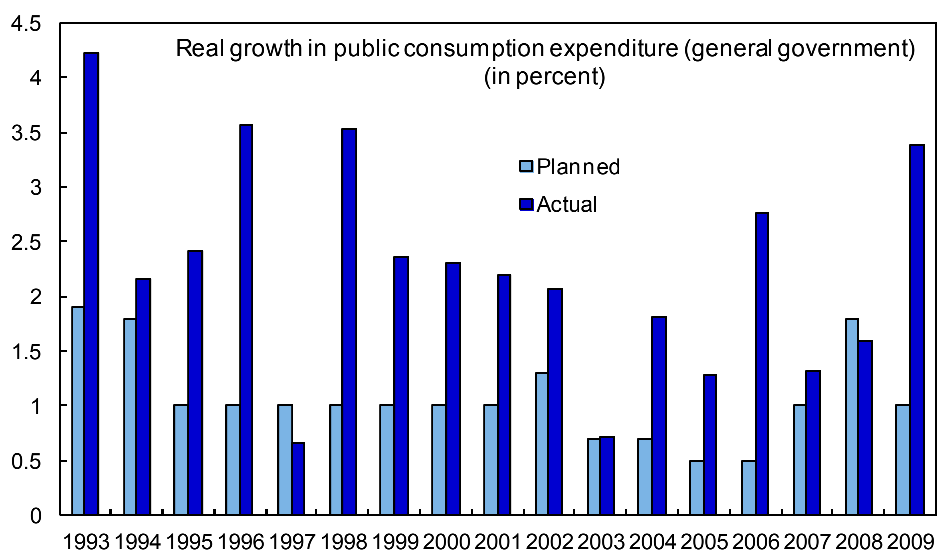
[2] Following a 2007 reform, regions do not any longer have the authority to raise their own revenue. They are now entirely funded through central government grants.

[3] A parallel agreement is negotiated between the central government and the association of regions.

60 percent of total financing, while central government block grants comprise 13 percent of total financing.

6. **But spending at the municipal level has consistently exceeded ceilings—and the general government spending norm has been missed since 1993**. The central government has sought to rein in growth in public spending by imposing restrictions on how local governments finance spending. Currently, the overall growth rate of expenditures at the municipal level is governed by the combination of: (i) a tax freeze since 2003, which keeps average tax rates constant across municipalities; (ii) an agreement between the central government and municipalities on the collective expenditure ceiling; (iii) a prohibition, in principle, to borrow for purposes other than investment in utility services and restrictions limiting municipalities' access to credit markets; and (iv) strict rules regarding reimbursements and user charges. However, the current system has only had limited success, judging from repeated overruns of the spending ceiling and the general government target for real growth in public consumption. In the context of rising asset prices, municipalities have circumvented these restrictions in recent years, funding spending overruns with non-tax revenues such as cash reserves from the sale of assets (land).



7. **The devolution of spending has mainly occurred in socially sensitive areas of spending**. Local governments have increasingly been assigned expenditure responsibilities in the areas of social services, welfare and health—demographically sensitive, high growth areas of spending. This allocation of responsibilities reflects the overriding principle that certain public services should be carried out in close proximity to the population and that local governments are better placed to assess their needs. Denmark stands out in comparison to both Sweden and other unitary states with its emphasis on health and social services (Text table). Taken together, these two items account for roughly ¾ of total sub national spending compared to just over ½ and ⅓ in Sweden and unitary states, respectively. In particular, expenditure pressures from aging related areas have been of great concern to local governments in Denmark.

Denmark: Composition of Local Government Spending

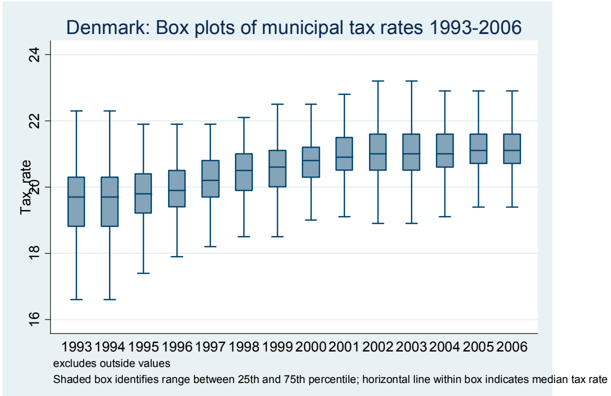
	Denmark		Sweden		Unitary states 1/	
	1995	2008	1995	2008	1995	2008
General public services	4.2	4.3	12.8	11.3	16.7	14.9
Public order and safety	0.3	0.3	1.0	0.8	4.6	4.7
Education	11.7	10.6	20.6	21.4	17.4	18.7
Health	19.6	22.9	21.6	27.0	12.5	13.4
Social security and welfare	55.3	53.8	26.9	26.8	15.8	15.9
Housing and community amenities	0.4	1.0	3.3	2.5	10.8	8.6
Other	8.4	7.2	13.9	10.2	22.2	23.8
Total share	100.0	100.0	100.0	100.0	100.0	100.0

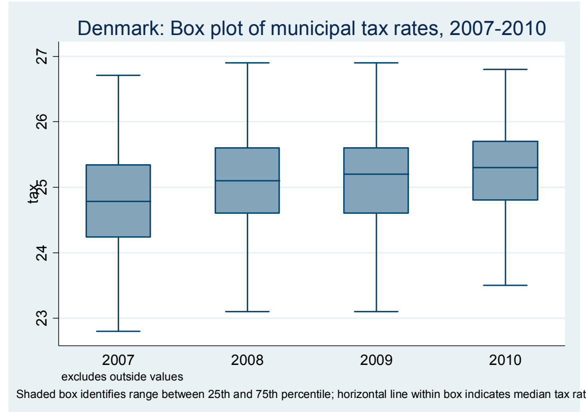
Source: Eurostat.
1/ Unweighted average.

8. **The current fiscal framework, based on cooperative voluntary agreements, has posed a serious problem for enforcement**. The collective and voluntary nature of budget agreements between the central government and associations of local governments makes their enforcement practically impossible. Moreover, enforcement of these agreements by the central government would contravene the local governments' constitutional right to autonomy.

9. **Instead, the central government has relied on a weak system of sanctions, with limited success**. In 2003, a tax freeze was imposed, restricting the average tax rate in municipalities to the 2001 level. This has helped slow the upward drift in tax rates across municipalities, but has not completely eliminated it as evidenced by the increase in tax rates from 2007–10. In 2008, parliament passed additional sanctions and incentives which were only relevant to municipal budgets (ex ante), not accounts (ex post)—excessive revenues from tax increases for the municipalities as a whole would be neutralized by reductions in the in the collective municipal block grant, and roughly DKK1 billion of the block grant became conditional on municipality *budgets* meeting the agreed spending levels. Following large spending overruns in 2009 combined with the need to consolidate public finances, the central government further raised incentives and imposed new sanctions mechanisms aimed at ensuring that municipal accounts meet spending targets in the context of the agreement for 2011—the conditional block grant was raised to DKK3 billion; both the budget and the outcome (accounts) have to comply with the ceiling; and individual sanctions regarding tax increases have been instituted[4]. However, these new sanctions do not become effective until 2011 and would not have any remedial impact on municipalities' public finances until 2012. The agreement for 2011 also introduces additional reporting requirements—notably, preparation of half-year municipal accounts.

[4] Any individual municipality tax increase not offset by decreases in other municipalities—resulting in an increase in the average tax rate—has to be remitted to the central government as follows: 75 percent of the increase has to be remitted the year of the increase, followed by 50 percent the following year and 25 percent the year after.





10. **More broadly, the institutional vertical coordination between levels of government has been weak**. The central government has clearly faced difficulties getting the sum of the budget of the individual municipalities to abide by a centrally negotiated target. Moreover, central government's overall fiscal objective of targeting real consumption spending growth has not been well translated into individual municipal fiscal plans—as municipal agreements focus on the annual collective expenditure ceiling, which is denominated in nominal level terms. This has reflected a clear divergence in fiscal plans and actions between tiers of government—as municipal budgets have until 2009 consistently diverged from agreements with the central government.

11. **Additional steps to stem the tendency for municipalities to overspend could be considered.** The improvements in the monitoring of municipal budget execution and the sanctions introduced in the context of the central government-municipal agreement for 2011 are welcome, but will remain in part untested until 2012 and could be complemented with other steps. Additional measures could be considered in the following areas:

Budget formulation and monitoring

- Budget formulation: municipal budgets include multiyear plans beyond the current budget year, but in practice have limited relevance in the annual budget preparation process. More emphasis could be put on the accuracy, quality and guiding character of multi-year plans.

- Yearly negotiations: the starting point of the negotiations should be fully consistent will the general government balance targets and the ceiling on public consumption as a share of GDP (rather than taking last year's budgets or outcomes as starting point).

- In-year fiscal reporting: the introduction of half-yearly accounts is welcome, but better quarterly data to analyze developing divergences between budget plans and execution could be considered. Direct reporting of quarterly cash-based revenue and spending data, including a consumption/investment decomposition, could facilitate budget execution monitoring.

Incentives and Sanctions

- Enhancing incentives to pursue efficiency in municipal service delivery through consideration of cost savings in the allocation of central government grants.

- Easing adverse incentives to overuse benefit schemes through improving the co-financing formula for income benefit expenditure.

- Establishing clearer consequences for municipalities with a track record of overspending. The additional ex-post monitoring of the agreements between central and local governments introduced for 2011 is welcome. However, since municipalities typically do not change tax rates during the course of the year, ex post monitoring on the tax side may be of limited practical consequence. Ex post monitoring therefore should focus on the expenditure side, and could be enhanced through a more systematic backward looking analysis of spending and liquidity patterns. This could help identify potential "bad performers"—i.e., municipalities that have frequently experienced spending overruns. These municipalities could then be subject to more intensive monitoring and additional conditions, including:

    a. Requirement to submit an adjustment plan to correct for past spending overruns

    b. Requirement to set aside an unallocated contingency in the budget to offset possible spending overruns in the budget year ahead

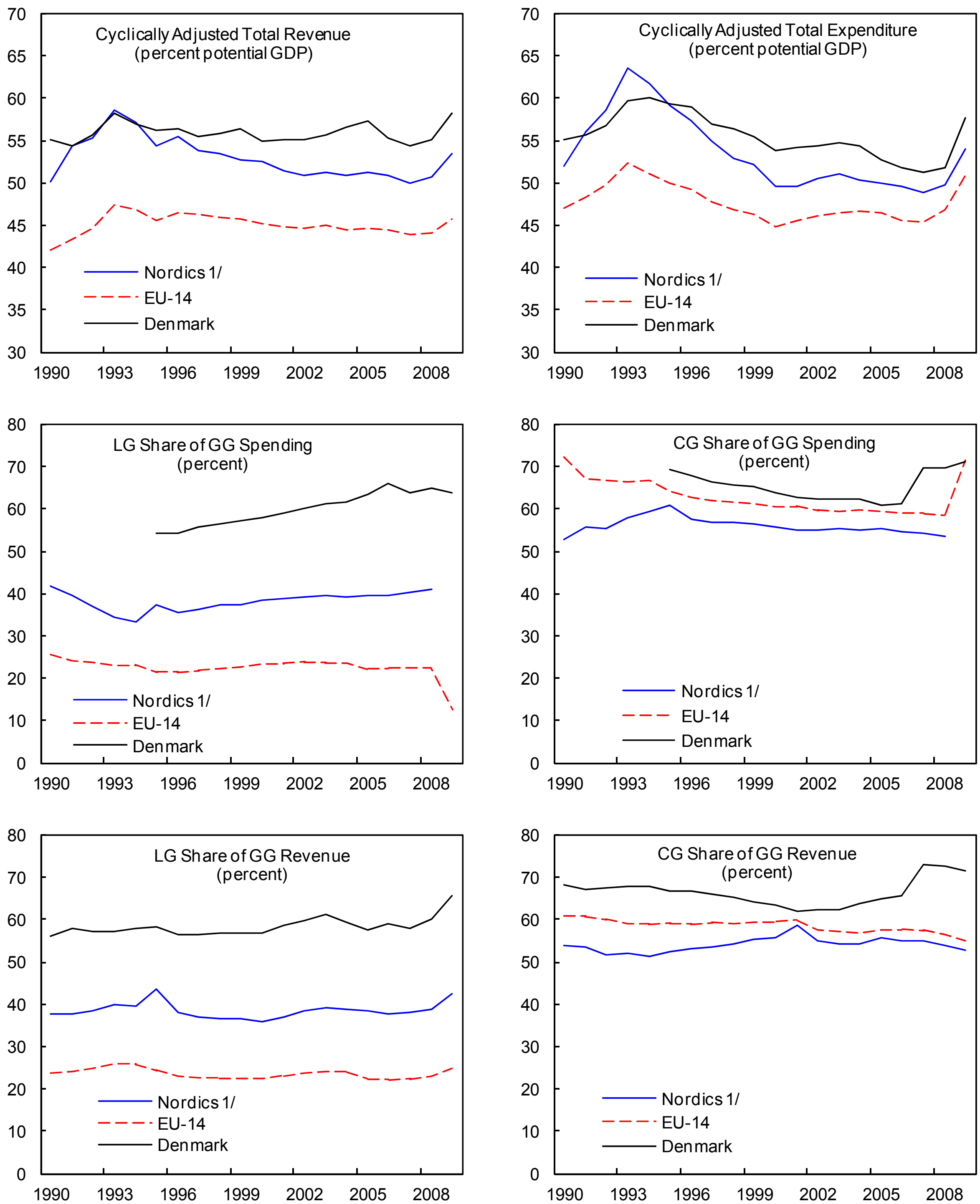
    c. An individual municipality spending ceiling in case the contingency under b. proves to be insufficient to prevent a spending overrun ex post.

National-Local Fiscal Coordination

- Ensuring consistency between the central-local agreements and the broader fiscal objectives at the general government level. Further efforts should aim to strengthen the negotiation framework to help municipalities better understand and internalize how the nominal spending ceiling and the tax freeze they agree to can contribute to the broader objectives of fiscal policy. They also should strive to better assess the implications of decisions from the center on new local spending mandates, and coordinate them more effectively with the municipalities.

- Giving a higher profile to the central-local agreements and generating a broader policy discussion on their content, while maintaining their non-binding legal nature. A more systematic ex-ante and ex-post assessment, including an analysis of their contribution from the point of view of Convergence Programme objectives, could be introduced. This evaluation could be in the form of a regular report, to be prepared within the existing institutional framework.

Figure 1. Denmark: Government Expenditure and Revenue, 1990–2009



Sources: Eurostat; Ameco; and IMF staff calculations.
1/ Netherlands, Finland and Sweden.

ANNEX II. WHAT IS BEHIND THE DECLINE IN DANISH TFP GROWTH?[1]

A. Introduction

1. **Danish productivity, measured as gross value added per hour worked, is relatively low and has trended downward since the mid-1990s.** Coupled with developments in labor compensation, low productivity growth has led to high unit labor costs increases and an overall concern in Denmark regarding declining external competitiveness and weakening growth prospects (Figure 1).

2. **A frequent explanation for low Danish productivity growth is that the recent rise in employment included workers with below average productivity, while capital stocks have not fully adjusted to higher labor supply levels.** However, after adjusting for these factors in a growth accounting framework, most of the decline appears to be linked to a fall in total factor productivity (TFP) growth. The OECD (2009) has noted that this is somewhat puzzling since the basic economic framework (e.g., regulations, education, and labor market flexibility) is considered to be sound. The Danish Economic Council (2010) also has pointed to the decline in TFP as evidence that resources were allocated inefficiently, and that additional competition—especially in the service sector—was needed. In particular, they find that highly educated workers tend to be overly represented in low productive firms and in the public sector.

3. **The purpose of this note is to empirically examine the factors that may be leading to a decline in Danish TFP growth.** TFP is a measure of the overall efficiency with which capital and labor are utilized, and the best yardstick for understanding the evolution of productivity. In the next section B, we use growth accounting to illustrate the size and sectoral source of the fall in Danish TFP. In section C, we describe possible links of TFP to economic policy variables. The panel data empirical framework is defined in Section D, while Section E presents the results.

4. **Our empirical results, summarized below, should be considered preliminary.** Broadly, they indicate that Danish sectoral TFP growth is significantly higher when the "technological gap" between the domestic and leading frontier economies is large. This suggests that there are opportunities for convergence and that policies which promote transfer of existing knowledge and technology will enhance Danish labor productivity growth. However, our results also indicate that Danish TFP growth is not affected by technology developments in leading frontier economies. This implies that cutting edge innovation dynamics found in leading economies do not spillover into Denmark, and do not play a significant role in Danish TFP growth. Regarding structural policies, our main result implies that Danish labor market flexibility—perhaps combined with strong income and job search

[1] Prepared by Kevin Ross and Volodymyr Tulin (both EUR)

support for the unemployed—could weaken incentives for investment in firm-specific human capital through excessive job turnover.

B. Growth Accounting

5. **Growth accounting using EU-KLEMS data provides a decomposition of the determinants of labor productivity growth into its main components—capital intensity, labor quality and TFP growth.** The decomposition indicates that over the past decade, Danish productivity has grown modestly both in relation to past norms, and compared to other countries (Table 1). The main factor behind slow productivity growth is much weaker TFP growth—which has declined from 0.8 percent on average during 1981–95 to -0.7 percent in 1996–2007. The drop in TFP is larger than in the euro area (EA) average and significantly larger than in countries who maintained healthy productivity growth (U.S., Germany and Finland). Moreover, TFP slowed in most sectors, with large falls in financing and business services, construction and network industries (Table 2).

C. Linking TFP to Economic Policy Variables

6. **Institutions and policies play a key role in determining growth patterns and relative TFP performance between countries.**

- As a residual measure, TFP reflects *innovation* and the speed at which state of the art *technologies are adopted / diffused* throughout the economy, as well as the *efficiency* in which factors of production are utilized. Countries near the technology frontier grow via introduction of newer technologies, while the "followers" increase their TFP growth by adopting better, but existing technologies available at the frontier.

- Policies that favor cost efficient adoption of existing technologies help followers, while countries at the frontier profit more from policies that promote innovation (e.g., R&D and higher education spending). In particular, external trade in capital goods with industry leaders is thought to stimulate technology transfers and convergence toward the frontier.

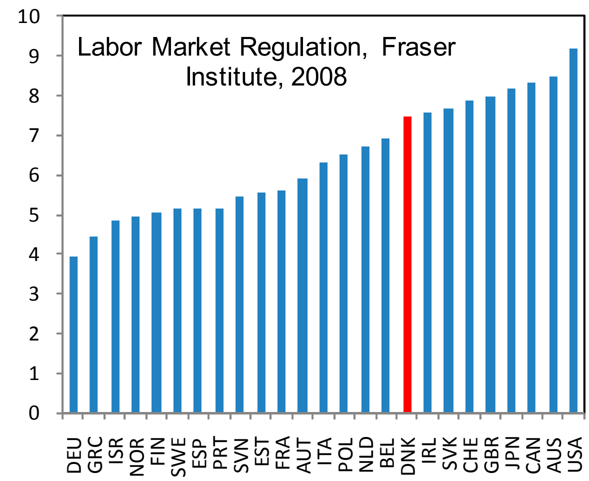
D. Methodology and Data

7. **The empirical framework broadly follows that found in McMorrow et al. (2010), Inklaar et al. (2008) and others.** The empirical strategy is to estimate panel regressions for a fifteen OECD country sample at the sectoral level over the 1987–2007 period. The baseline specification is as follows:

$$\Delta lnTFP_{i,j,t} = \alpha + \beta\Delta lnTFP_{F,j,t} + \delta ln\left(\frac{TFP_{F,j,t-1}}{TFP_{i,j,t-1}}\right) + \gamma Z_{i,j,t-1} + \varphi L_{i,t-1}$$
$$+ \tau Z_{i,j,t-1} ln\left(\frac{TFP_{F,j,t-1}}{TFP_{i,j,t-1}}\right) + øL_{i,j,t-1} ln\left(\frac{TFP_{F,j,t-1}}{TFP_{i,j,t-1}}\right).$$

Simply put, the growth in industry level (j) TFP in country (i) is a function of sectoral TFP growth at the frontier economy (F); the sectoral gap in TFP growth between the economy (i) and the frontier (F); sector specific and time varying information on R&D expenditures and trade (Z); country specific labor policy variables (L); and inter-action terms between the gap and Z and L. Other control variables (e.g., real effective exchange rates, are also included).

8. **Productivity and TFP data comes from the KLEMS database, while structural variables such as R&D expenditures and product market regulation are taken from the OECD.** For labor market policies, we use the labor market regulations indicator from the Fraser Institute. The indicator represents regulations pertaining to minimum wage, hiring and firing, costs of employment and dismissal, and centralized collective bargaining systems. The index ranges from 0 to 10, with lower values implying anti-competitive regulations. Overall, the Fraser labor market variable suggests that Denmark has a relatively flexible labor market system.



9. **To provide some flavor to the data, we report the sectoral evolution of the TFP gap over time as well as developments in R&D expenditures (Figure 2).** The gap between sectoral Danish TFP and the frontier economy is growing in many sectors (e.g., food and beverage and tobacco; electrical and optical equipment)—and the level of the gap is relatively high in transport, chemicals, paper products and electrical equipment. However, there have also been improvements in some sectors (e.g., chemical; wood products) over time. Looking at R&D expenditures, the main increases have been in chemical products—where it appears to have helped close the TFP gap—and in electrical equipment and food and beverages—where it has not.

E. Results

10. **Table 3 presents the results of the baseline specification, without policy variables included.** The outcomes are also provided at the manufacturing and service sector level, both for the OECD group of countries and for Denmark[2]. The results indicate that for OECD countries TFP growth is significantly higher when there is stronger TFP growth at the frontier economy (reflecting cross-border innovation and technology spillovers) and when the gap with the frontier economy is large. This is also the case at the OECD manufacturing level. Broadly, a 1 percent increase in TFP growth in the frontier economy results in a 0.05 percent increase in TFP growth, while a larger TFP gap one period earlier results in a less than 0.01 percent increase in TFP growth. However, given the size of the average TFP

[2] Wald tests indicate fixed effects by country, industry, and year should be kept.

gap (40 percent) and the average TFP growth rate of the frontier economy (1.8 percent), the contribution of the gap is about 3 times larger. When we look at Denmark alone, the growth rate of TFP at the frontier is insignificant, either across all sectors or when we focus on market services or manufacturing. In particular, the *catching up effect* is higher than the OECD average, and strongly significant, especially at the manufacturing level.

11. **Table 4 presents the results of the benchmark model but with R&D expenditures included.**[3] For OECD countries, lagged R&D intensity significantly adds to TFP growth—when looking at the total economy, manufacturing or market service levels. However, for Denmark we find no evidence that R&D intensity improves TFP growth or absorption capacity. This result is consistent with the fact that growth at the frontier or new technological innovations do not appear to drive Danish TFP growth.

12. **Table 5 presents the results with the labor market variables—which are particularly interesting.** As expected, the estimates indicate that more labor market flexibility improves TFP growth with a short lag.[4] However, it only works through a square specification, leading to an inverted-U relationship. That is, too much labor market flexibility limits TFP growth, but so does too little flexibility. Denmark appears to be slightly to the right of the peak, so TFP growth could be higher if Danish labor markets were somewhat less flexible.[5] One reason for this intriguing result may be that greater emphasis on flexibility may lead to higher job turnover regardless of the state of the business cycle. In Denmark, labor turnover is relatively high, reflecting low levels of job protection and firing and hiring costs, but also significant unemployment and retraining support. Workers thus shift positions frequently within Denmark's "flexicurity" labor market. However, this could imply that the Danish framework diminishes labor search costs too much and weakens incentives in firm-specific investment in human capital.

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[3] Results using product market regulation were not significant and are not reported.

[4] When we aggregate the data over 3 or 4-year periods, the effect of the lagged labor becomes negative. Short term effects appear to be positive but longer term effects negative. We do not include these results since they only work well without fixed effects, implying data over fitting given much fewer observations.

[5] Given the coefficients on lagged and squared labor market regulation, the implied maximum value of the Fraser variable is around 5.9. Values above this level start to drag down TFP growth.

Table 1. Contributions to Growth in Productivity 1/
(in average annual growth, percent)

	Denmark	Germany	US	Finland	UK	France	Italy	EA 2/	Sweden 3/
	1981-95								
Hourly productivity	**2.3**	**2.4**	**1.3**	**2.9**	**2.4**	**2.5**	**1.9**	**2.3**	**…**
Contributions from capital intensity	1.1	1.2	1.5	1.1	1.1	0.7	0.9	1.0	…
Of which IT and communication tech.	0.8	0.2	0.6	0.4	0.5	0.2	0.2	0.3	…
Of which non-IT capital equipment	0.3	0.9	0.9	0.7	0.6	0.5	0.6	0.8	…
Contributions from labor quality	0.4	0.2	0.2	0.9	0.2	0.6	0.3	0.4	…
TFP	0.8	1.1	-0.3	0.9	1.1	1.3	0.7	0.9	…
	1996-2007								
Hourly productivity	**0.6**	**1.7**	**2.0**	**2.3**	**1.9**	**1.6**	**0.4**	**1.2**	**2.3**
Contributions from capital intensity	1.2	1.0	1.5	1.0	1.3	0.9	0.9	1.1	1.5
Of which IT and communication tech.	0.8	0.4	0.7	0.5	0.7	0.3	0.2	0.4	0.5
Of which non-IT capital equipment	0.4	0.6	0.8	0.5	0.6	0.6	0.7	0.7	1.1
Contributions from labor quality	0.1	0.0	0.2	0.2	0.4	0.3	0.1	0.1	0.3
TFP	-0.7	0.7	0.2	1.1	0.2	0.4	-0.6	0.0	0.6

Sources: EU-KLEMS database, November 2009 vintage; and staff estimates.
1/ Data contains the market related part of the economy only.
2/ EA comprises Austria, Belgium, Finland, Germany, Italy, the Netherlands, and Spain.
3/ Sweden is only available from 1995 onward.

Table 2. Change in TFP Growth, Contributions from Sectors 1/
(in average annual growth, percent)

	Denmark	Germany	US	Finland	UK	France	Italy	EA 2/
TFP growth, 1981-1995	0.8	1.1	-0.3	0.9	1.1	1.3	0.7	0.9
TFP growth, 1996-2007	-0.7	0.7	0.2	1.1	0.2	0.4	-0.6	0.0
Change in TFP growth	**-1.5**	**-0.4**	**0.5**	**0.2**	**-0.9**	**-0.9**	**-1.4**	**-0.9**
Of which contribution from sectors								
Electronics, post and telecommunications	0.0	0.2	0.2	0.3	0.0	0.1	0.0	0.1
Manufacturing, ex. electronics	0.1	-0.1	0.1	-0.1	-0.7	-0.1	-0.6	-0.2
Other production 2/	-0.7	-0.2	-0.5	0.0	-0.5	-0.6	-0.6	-0.5
Trade and transport	-0.2	0.0	0.2	0.1	-0.2	-0.5	-0.4	-0.2
Financing and business services	-0.5	-0.4	0.4	0.0	0.6	0.0	0.2	-0.1
Personal services	-0.2	0.1	0.0	0.0	-0.1	0.2	0.0	0.0

Sources: EU-KLEMS database, November 2009 vintage; and staff estimates.
1/ Data contains the market related part of the economy only.
2/ EA comprises Austria, Belgium, Finland, Germany, Italy, the Netherlands, and Spain.
3/ Other production includes construction; agriculture, forestry, and fishing; raw material extraction; electricity, gas and water supplies.

Table 3. Regression Analysis: TFP Growth Determinants: Basic Specification

Dependent variable: TFP growth rate, percent	OECD All sectors	Denmark All sectors	OECD Manufacturing	Denmark Manufacturing	OECD Market services	Denmark Market services
TFP frontier growth rate, percent	0.050 ***	0.046	0.041 ***	0.021	0.031	-0.063
	(0.010)	(0.047)	(0.011)	(0.053)	(0.034)	(0.146)
Gap from the TFP frontier$_{t-1}$, percent	0.008 ***	0.079 ***	0.005 **	0.076 ***	0.033 ***	0.078
	(0.002)	(0.019)	(0.002)	(0.020)	(0.005)	(0.079)
R^2	0.09	0.25	0.11	0.31	0.10	0.49
Fixed effects: country, industry, year, within-groups estimation						
Observations:	6138	431	4336	312	1077	66
Sample: 15 OECD economies, 1987-2007						

Source: IMF staff calculations.
Notes: ***, **, * indicates 1, 5, and 10 percent statistical significance, respectively. Newey-West standard errors in parenthesis.
Gap from the TFP frontier = Ln(Maximum TFP level)-Ln(TFP level)
Market services include trade, transportation, and finance, insurance and real estate (FIRE).
Non-overlapping industries, non-frontier observations.

Table 4. Regression Analysis: TFP Growth Determinants: Including R&D Expenditure

Dependent variable: TFP growth rate, percent	OECD All sectors	Denmark All sectors	OECD Manufacturing	Denmark Manufacturing	OECD Market services	Denmark Market services
TFP frontier growth rate, percent	0.042 ***	0.010	0.033 ***	-0.036	0.119 **	…
	(0.010)	(0.046)	(0.012)	(0.048)	(0.059)	…
Gap from the TFP frontier$_{t-1}$, percent	0.007 **	0.112 ***	0.005 *	0.108 ***	0.048 ***	…
	(0.003)	(0.025)	(0.003)	(0.026)	(0.017)	…
R&D intensity$_{t-1}$, percent of value added	0.187 ***	-0.323	0.171 ***	-0.380	2.04 *	…
	(0.059)	(0.225)	(0.061)	(0.229)	(1.07)	…
R^2	0.11	0.32	0.14	0.40	0.23	…
Fixed effects: country, industry, year, within-groups estimation						
Observations:	3473	256	2772	210	239	…
Sample: 15 OECD economies, 1987-2007						

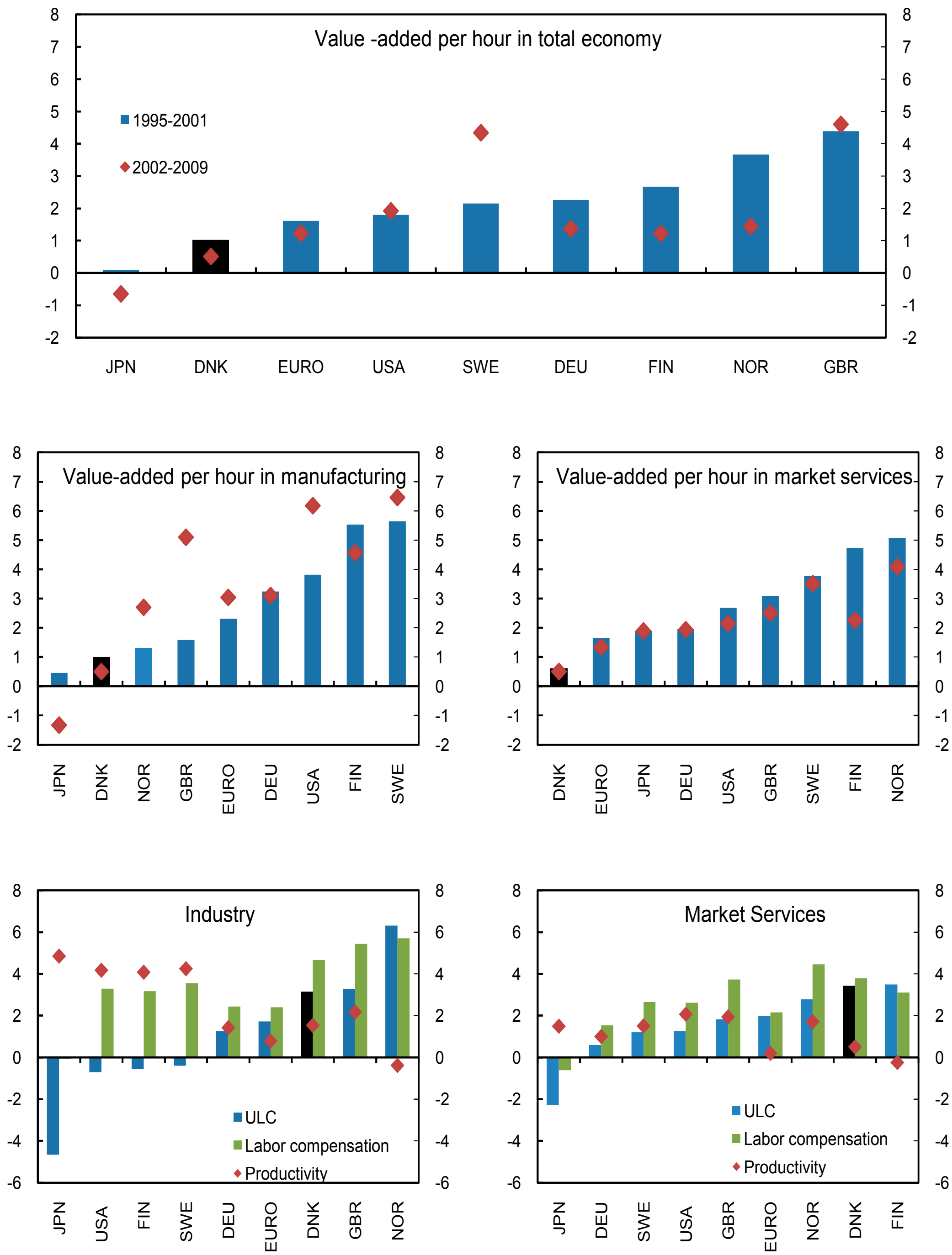
Source: IMF staff calculations.
Notes: ***, **, * indicates 1, 5, and 10 percent statistical significance, respectively. Newey-West standard errors in parenthesis.
Gap from the TFP frontier = Ln(Maximum TFP level)-Ln(TFP level)
Market services include trade; transportation; and FIRE.
Non-overlapping industries, non-frontier observations.

Table 5. Regression Analysis: TFP Growth Determinants: Including Labor Market Institutions

Dependent variable: TFP growth rate, percent	OECD All sectors	OECD All sectors	OECD Manufacturing	OECD Manufacturing	OECD Market services
TFP frontier growth rate, percent	0.043 ***	0.043 ***	0.035 ***	0.034 ***	0.114 **
	(0.012)	(0.012)	(0.012)	(0.012)	(0.059)
Gap from the TFP frontier$_{t-1}$, percent	0.007 **	0.007 **	0.005 *	0.005 *	0.049 ***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.017)
R&D intensity$_{t-1}$, percent of value added	0.186 ***	0.186 ***	0.171 ***	0.171 ***	3.318 ***
	(0.059)	(0.059)	(0.062)	(0.062)	(1.206)
Labor market regulation$^2_{t-1}$	-0.093 ***		-0.128 ***		0.053
	(0.036)		(0.042)		(0.117)
Labor market regulation$_{t-1}$	1.097 **		1.486 **		-0.465
	(0.432)		(0.499)		(1.454)
Implied peak value of labor market regulation	*5.9*	*5.9*	*5.8*	*5.8*	*4.4*
Labor market regulation$_{t-1}$, distance from the peak		-0.332 ***		-0.413 ***	
		(0.134)		(0.156)	
R^2	0.13	0.13	0.15	0.15	0.25
Fixed effects: country, industry, year, within-groups estimation					
Observations:	3309	3309	2644	2644	221
Sample: 15 OECD economies, 1987-2007					

Source: IMF staff calculations.
Notes: ***, **, * indicates 1, 5, and 10 percent statistical significance, respectively. Newey-West standard errors in parenthesis.
Gap from the TFP frontier = Ln(Maximum TFP level)-Ln(TFP level)
Market services include trade, transportation, and FIRE.
Non-overlapping industries, non-frontier observations.

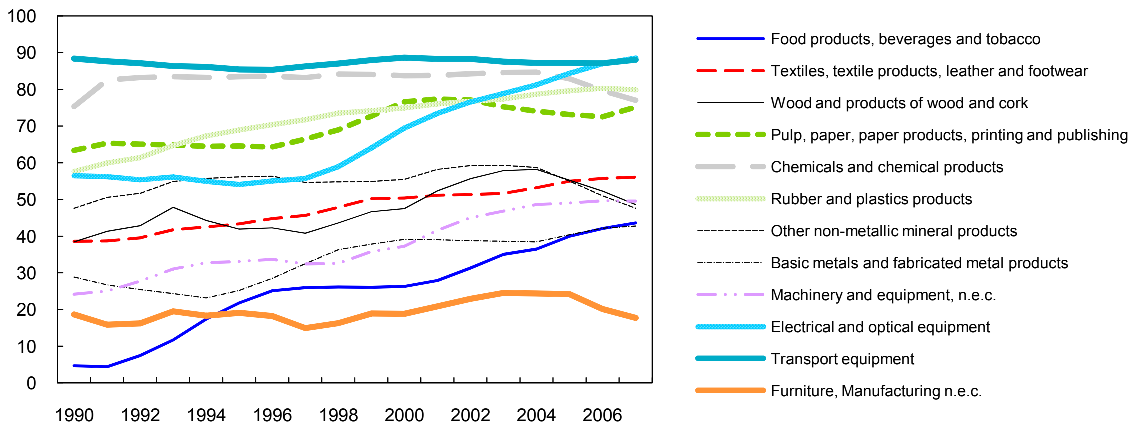
Figure 1. Denmark: OECD Productivity Indicators, 1995–2009
(Average annual percent change)



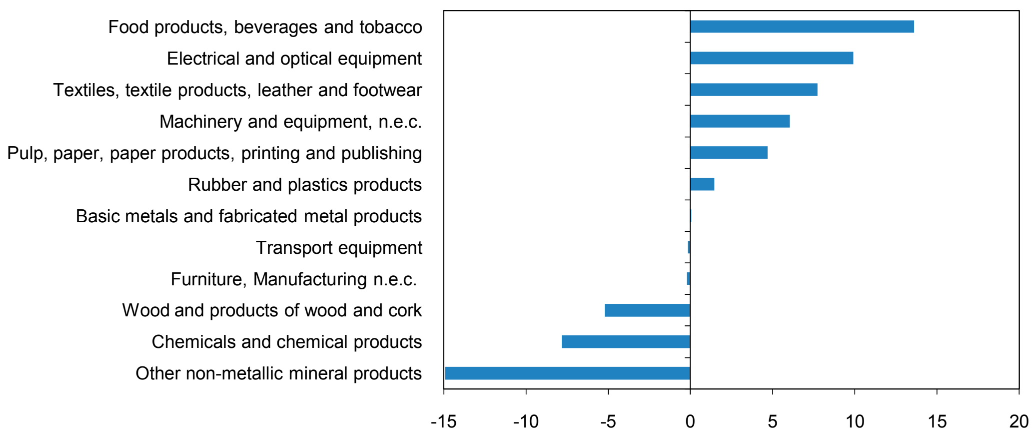
Sources: KLEMS; and OECD.

Figure 2. Denmark: Manufacturing Sector TFP Developments, 1987-2007

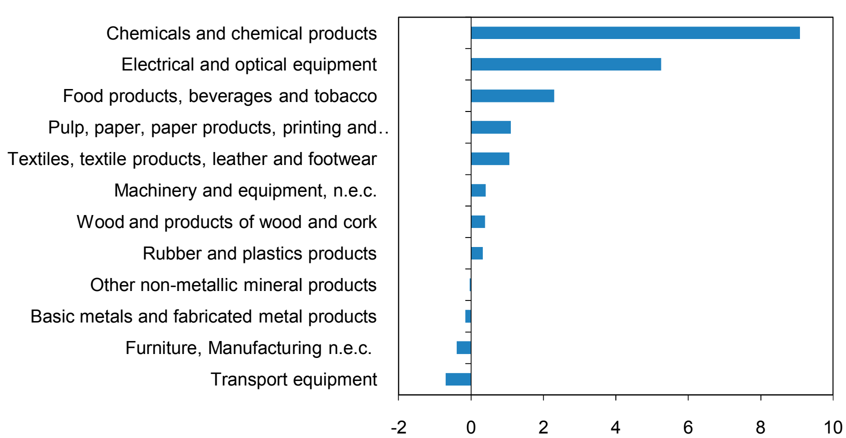
Evolution of TFP gap vis-a-vis most productive OECD economy, manufacturing industries, 4-year average (In percent of frontier TFP)



Increase in the gap from the TFP frontier, 2000-2007 (In percentage points)



Change in R&D Intensity, 2006-2000 (In percentage points of value added)



Source: IMF staff calculations.

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INTERNATIONAL MONETARY FUND

DENMARK

Staff Report for the 2010 Article IV Consultation—Informational Annex

Prepared by the European Department

November 23, 2010

Contents Page

Appendixes

APPENDIX I: DENMARK—FUND RELATIONS
(As of October 31, 2010)

I. **Membership Status**: Joined March 30, 1946. Article VIII

II. **General Resources Account**:	SDR Million	Percent Quota
Quota	1,642.80	100.00
Fund holdings of currency	1,286.33	78.30
Reserve Tranche position	356.48	21.70
Lending to the Fund	125.20	
Notes Issuance		
Holdings Exchange Rate		

III. **SDR Department**:	SDR Million	Percent Allocation
Net cumulative allocation	1,531.47	100.00
Holdings	1,521.13	99.32

IV. **Outstanding Purchases and Loans**: None

V. **Latest Financial Arrangements**: None

VI. **Projected Payments to the Fund** [1/]

(SDR Million; based on existing use of resources and present holdings of SDRs):

	Forthcoming				
	2010	2011	2012	2013	2014
Principal					
Charges/Interest	0.01	0.05	0.05	0.05	0.05
Total	0.01	0.05	0.05	0.05	0.05

[1/] When a member has overdue financial obligations outstanding for more than three months, the amount of such arrears will be shown in this section.

VII. **Exchange Arrangements:**

- Denmark participates in the European Exchange Rate mechanism II (ERMII) with a central rate at DKr 746.038 per €100 and a fluctuation band of +/- 2¼ per cent relative to the central rate.

- In accordance with relevant UN resolutions and EU regulations, Denmark maintains measures to regulate the freezing of funds, other financial assets, and economic resources of certain persons and entities associated with Osama bin Laden, the Taliban, the Al-Qaida network, Slobodan Milosevic and persons associated with him, and persons indicted by the International Criminal Tribunal for the Former Yugoslavia. There are restrictive measures against Uzbekistan, and Lebanon. Certain restrictive measures, including the freezing of funds of certain individuals and entities, are maintained against

Burma/Myanmar, Iraq, the Democratic Republic of the Congo, Eritrea, Liberia, Somalia, Sudan, Zimbabwe, Belarus, Côte d'Ivoire, the Democratic People's Republic of Korea, the Republic of Guinea and the Islamic Republic of Iran. Measures have been taken to prohibit the payment of certain claims by Iraq, Libya, and the Haitian authorities.These restrictions have been notified to the Fund under Decision 144–(52/51).

VIII. **Article IV Consultation**: Denmark is on the 24-month consultation cycle. The staff report for the last Article IV consultation (IMF Country Report No. 08/379) was discussed at EBM/08/112 (December 19, 2008).

IX. **Technical Assistance**: None.

X. **Resident Representative**: None.

Appendix II: Denmark—Statistical Appendix

Data provision is adequate for surveillance. The country has a full range of statistical publications, many of which are on the Internet. The quality and timeliness of the economic database are generally very good. The country subscribes to the Fund's Special Data Dissemination Standard. Metadata are posted on the Dissemination Standards Bulletin Board.

TABLE OF COMMON INDICATORS REQUIRED FOR SURVEILLANCE (AS OF OCTOBER 31, 2010)

	Date of latest observation	Date received	Frequency of Data[7]	Frequency of Reporting[7]	Frequency of Publication[7]
Exchange Rates	11/10	11/12/10	D	D	D
International Reserve Assets and Reserve Liabilities of the Monetary Authorities[1]	10/10	10/31/10	M	M	M
Reserve/Base Money	10/10	10/31/10	M	M	M
Broad Money	10/10	10/31/10	M	M	M
Central Bank Balance Sheet	10/10	10/31/10	M	M	M
Consolidated Balance Sheet of the Banking System	10/10	10/31/10	M	M	M
Interest Rates[2]	11/10	11/12/10	D	D	D
Consumer Price Index	10/10	10/31/10	M	M	M
Revenue, Expenditure, Balance and Composition of Financing[3]—General Government[4]	Q2 2010	11/04/10	A	A	A
Revenue, Expenditure, Balance, and Composition of Financing[3]—Central Government	2009	04/10	A	A	A
Stocks of Central Government and Central Government-Guaranteed Debt[5]	2009	04/10	A	A	A
External Current Account Balance	Q2 2010	11/04/10	M	M	M
Exports and Imports of Goods and Services	Q2 2010	11/04/10	M	M	M
GDP/GNP	Q2 2010	11/04/10	Q	Q	Q
Gross External Debt	11/07	04/10	Q	Q	Q
International Investment Position[6]	Q2 2010	11/04/10			

1/ Includes reserve assets pledged or otherwise encumbered as well as net derivative positions.
2/ Both market-based and officially-determined, including discount rates, money market rates, rates on treasury bills, notes and bonds.
3/ Foreign, domestic bank, and domestic nonbank financing.
4/ The general government consists of the central government (budgetary funds, extra budgetary funds, and social security funds) and state and local governments.
5/ Including currency and maturity composition.
6/ Includes external gross financial asset and liability positions vis-à-vis nonresidents.
7/ Daily (D), weekly (W), monthly (M), quarterly (Q), annual (A), irregular (I); and not available (NA)

INTERNATIONAL MONETARY FUND
Public Information Notice
EXTERNAL RELATIONS DEPARTMENT

Public Information Notice (PIN) No. 10/160
FOR IMMEDIATE RELEASE
December 16, 2010

International Monetary Fund
700 19th Street, NW
Washington, D. C. 20431 USA

IMF Executive Board Concludes 2010 Article IV Consultation with Denmark

On December 13, 2010 the Executive Board of the International Monetary Fund (IMF) concluded the Article IV consultation with Denmark.[1]

Background

Denmark is recovering from a deep recession. Output contracted sharply—by about 7 percent from peak to trough—led by a 20 percent correction in house prices which gave way to a domestic banking crisis in mid-2008. Danish banks, highly dependent on interbank funding, faced additional pressures in the fall of 2008 as international wholesale markets froze.

A strong and swift policy response to the global financial crisis softened its impact on the Danish economy and stabilized the banking system. The recovery in the global economy and normalization of financial markets have boosted exports and confidence. This, together with fiscal stimulus and easing monetary conditions, has supported output and halted a rapid rise in unemployment from low pre-crisis levels. Domestic demand was buttressed by large automatic stabilizers, discretionary fiscal easing of almost 4 percentage points of GDP, and major interest rate cuts in line with reductions in the ECB policy rate. Extended active labor market policies helped contain employment losses, while relatively generous unemployment benefits lessened the social impact. The banking system was fortified by a wide range of measures, including a

[1] Under Article IV of the IMF's Articles of Agreement, the IMF holds bilateral discussions with members, usually every year. A staff team visits the country, collects economic and financial information, and discusses with officials the country's economic developments and policies. On return to headquarters, the staff prepares a report, which forms the basis for discussion by the Executive Board. At the conclusion of the discussion, the Managing Director, as Chairman of the Board, summarizes the views of Executive Directors, and this summary is transmitted to the country's authorities. An explanation of any qualifiers used in summings up can be found here: http://www.imf.org/external/np/sec/misc/qualifiers.htm.

blanket government guarantee for depositors and creditors; liquidity support; capital injections; and a temporary bank resolution scheme. In this context, output began to rise in the second half of 2009 and staff project real GDP to grow at about 2½ percent this year and 2 percent in 2011.

Nonetheless, the crisis and policy response have weakened the fiscal position, moving it away from the planned pre-crisis path. The general government balance swung from a surplus of 3.4 percent of GDP in 2008 to a deficit of 2¾ percent of GDP in 2009, and the deficit is projected to further widen in 2010, to around 5 percent of GDP—around 2 percent of GDP when excluding cyclical and temporary components. Even with a return by 2015 to the pre-crisis targets for the budget balance, gross general government debt as a share of GDP will still be some 30 percentages points higher that year than envisaged before the crisis. Accordingly, the planned pre-funding of ageing-related spending pressures will only partially materialize. Moreover, the expected tightening in monetary conditions raises vulnerabilities for households and corporate given their highly leveraged balance sheets and the prevalence of variable interest rate loans, with possible knock on effects to banks and the real economy.

Executive Board Assessment

Directors noted that the Danish economy had been hit hard by dual shocks—a domestic housing market correction and the global recession. A strong policy response—led by a large discretionary fiscal stimulus building on Denmark's strong macroeconomic framework—has stabilized output and the banking system, and has prevented an increase in structural unemployment. The economy has begun to recover.

Directors broadly concurred that economic policies should be geared at managing two key risks: a possible worsening of growth prospects; and a tightening in monetary conditions, which could expose household and corporate vulnerabilities arising from highly leveraged balance sheets and variable interest rate loans.

Directors welcomed the authorities' three-year fiscal consolidation package as an important step towards strengthening Denmark's fiscal position and reaching structural balance in 2015. Achieving this medium-term objective would be key to safeguard the credibility of the peg to the euro, prepare for ageing-related pressures, and ensure fiscal sustainability. The lagged effects of the large fiscal easing in 2009-10 would continue to support the recovery in 2011, and some Directors saw room for slowing the pace of consolidation should recovery be at risk.

Directors considered the consolidation strategy, including its frontloaded element, to be well designed. At the same time, they supported stronger efforts to rein in public consumption growth in order to meet the deficit targets. While welcoming recent expenditure control reforms, they saw scope for further strengthening public expenditure management, particularly at the municipal level. Containing expenditure growth would also reduce the need for tax increases, given that Denmark's tax burden continues to be high, even after the recent tax reform.

Directors supported the strengthening of financial sector supervision. They commended the establishment of benchmark thresholds for various bank ratios, the recently signed Nordic cooperation agreement on cross-border financial stability, crisis management and resolution, and the strengthened cooperation between the financial supervisory agency and the National Bank with increased focus on macro-prudential risks. Directors encouraged further efforts to address remaining vulnerabilities in some medium-size banks, and risks that could arise from a resurgence of domestic real estate problems or international financial pressures. They also noted the challenges arising from implementation of Basel III rules.

Directors noted that flexicurity had helped avoid an increase in structural unemployment. Given sluggish labor productivity growth and to boost longer run growth, Directors recommended steps to increase returns on education, in particular at higher skill levels, and to step up competition in the services sector to help reallocate resources to more productive uses. Directors noted that in view of looming labor supply shortages, reforms of early retirement schemes and of sickness and disability leave benefits are also a priority.

Public Information Notices (PINs) form part of the IMF's efforts to promote transparency of the IMF's views and analysis of economic developments and policies. With the consent of the country (or countries) concerned, PINs are issued after Executive Board discussions of Article IV consultations with member countries, of its surveillance of developments at the regional level, of post-program monitoring, and of ex post assessments of member countries with longer-term program engagements. PINs are also issued after Executive Board discussions of general policy matters, unless otherwise decided by the Executive Board in a particular case. The staff report (use the free Adobe Acrobat Reader to view this pdf file) for the 2010 Article IV Consultation with Denmark is also available.

Denmark: Selected Economic and Social Indicators, 2004–11

	2004	2005	2006	2007	2008	2009	2010	2011
							Projections	
Supply and Demand (change in percent)								
Real GDP	2.3	2.4	3.4	1.7	-0.9	-4.7	2.5	2.0
Net Exports 1/	-2.0	-1.1	-2.0	-0.2	-0.5	1.7	0.0	-0.7
Domestic demand	4.3	3.4	5.2	1.9	-0.5	-6.2	3.0	2.8
Private Consumption	4.7	3.8	3.6	2.4	-0.2	-4.6	3.3	3.0
Gross fixed investment	3.9	4.7	14.2	2.9	-4.7	-13.0	-4.0	4.4
Gross national saving (percent of GDP)	23.4	25.2	25.7	24.5	24.0	21.5	21.1	21.1
Gross domestic investment (percent of GDP)	20.4	20.8	22.7	23.0	22.0	17.4	17.5	17.9
Potential output	1.6	1.2	1.7	1.6	1.6	-1.5	2.0	1.5
Output gap (in percent of total output)	0.0	1.2	2.9	3.0	0.5	-2.8	-2.4	-1.9
Labor Market (change in percent)								
Labor force	-0.2	0.1	1.0	0.4	-2.3	0.1	0.1	-0.1
Employment	-0.4	0.9	2.2	1.6	-1.4	-1.7	-0.6	-0.4
Unemployment rate (in percent)	5.8	5.1	3.9	2.8	1.9	3.6	4.2	4.5
Prices and Costs (change in percent)								
GDP deflator	2.3	2.9	2.1	1.9	3.6	0.4	2.7	2.0
CPI (year average)	1.2	1.8	1.9	1.7	3.4	1.3	2.0	2.0
Public finance (percent of GDP) 2/								
General government revenues	56.7	58.0	56.8	55.8	55.3	55.6	53.8	53.5
General government expenditure	54.8	53.0	51.7	51.1	51.9	58.5	58.8	57.9
General government balance	1.9	5.0	5.0	4.8	3.4	-2.8	-5.0	-4.4
General government structural balance	1.6	1.6	1.6	2.1	2.3	-0.2	-1.9	-1.0
General government primary balance	3.3	6.1	5.8	5.2	3.5	-2.5	-4.4	-3.7
General government gross debt	45.1	37.8	32.1	27.4	34.2	41.4	44.4	47.0
Money and Interest rates (percent)								
Domestic credit growth (end of year)	8.9	14.9	14.1	13.1	10.9	-1.8	…	…
M3 growth (end of year)	2.7	14.3	11.4	17.0	7.7	5.0	…	…
Short-term interest rate (3 month)	2.1	2.2	3.1	4.3	4.9	1.8	…	…
Government bond yield (10 year)	4.3	3.4	3.8	4.3	4.3	3.6	…	…
Balance of payments (in percent of GDP)								
Exports of goods & services	48.9	46.7	54.9	55.5	50.0	49.7	46.9	48.4
Imports of goods & services	-43.5	-41.6	-51.0	-52.7	-47.5	-45.8	-43.6	-45.3
Trade balance, goods and services	5.5	5.1	3.9	2.8	2.5	3.8	3.3	3.1
Current account	3.0	4.3	3.0	1.5	2.0	4.1	3.6	3.2
Exchange rate								
Average DKK per US$ rate	6.0	6.0	5.9	5.4	5.1	5.4	…	…
Nominal effective rate (2000=100, ULC based)	108.9	108.4	108.7	110.9	113.9	115.3	…	…
Real effective rate (2000=100, ULC based)	116.4	119.5	120.5	126.4	128.8	125.0	…	…
Social indicators (Reference year)								
GDP per capita, PPP (current international $) (2008): $36,845; At-risk-of-poverty rate (2008): 11.8 percent.								

Sources: Danmarks Nationalbank; Eurostat; IMF's *World Economic Outlook Database*; OECD; Statistics Denmark; World Bank's *World Development Indicators*; and IMF staff projections.
1/ Contribution to GDP growth.
2/ Figures for 2010–11 reflect Ministry of Finance estimates and projections as of August 2010; pre-2010 numbers are from Danmarks Statistik.

Statement by Per Callesen, Executive Director for Denmark and Martin Holmberg, Advisor to Executive Director December 13, 2010

On behalf of my Danish authorities, I would like to thank the staff for candid and constructive policy discussions in Copenhagen during the Article IV mission. My authorities appreciate the high quality paper addressing topical issues for the Danish economy. They broadly concur with staff's analysis and assessment and will carefully consider the recommendations.

Financial Sector Issues

My authorities generally welcome the assessment by staff on the current state of the banking system. Staff identifies correctly the initiatives launched to ensure financial stability and re-capitalization of the financial sector.

In relation to the Basel III liquidity proposals and the impact on Danish covered bond markets, staff considers that the share (11 per cent) of total mortgage bonds that will have to be sold by banks to meet the liquidity requirements will have a limited price effect on the mortgage bond market. Staff believes that any possible disruptions to the liquidity management could be addressed by considering alternative liquidity instruments.

The Danish government is more concerned than staff about the effect of the new liquidity requirements. It is reasonable to assume that the off-loading of covered bonds probably will take place in one or two years up to 2015. In this context, it can be assumed that an 11 per cent reduction of the entire outstanding stock of covered bonds will have an effect on the pricings of the covered bonds in a given year, as the issued covered bonds per year (gross) is considerably lower than the stock. Thus, an off load of 11 per cent of all outstanding covered bonds (41 billion) will comprise around 25 per cent of the trade of covered bonds in a given year. Furthermore, the new EU rules regulating the insurance sector, Solvency II, will likely also have an effect on demand for covered bonds by insurance companies and pension funds. This will most likely result in a lasting re-pricing in the market, but will in my authorities' opinion not introduce any added value of financial stability. This is supported by empirical findings by Danmarks Nationalbank that Danish covered bonds have been as liquid as Danish government bonds during periods of market stress.[1]

Staff's reference to alternative liquidity instruments in relation to the problem of the government bond market is unclear, as only government bonds, cash and central bank deposits can form part of the level 1 buffer. It is the authorities' assessment that the liquidity proposals will have significant consequences for the government bond market. Danish credit institutions will have to hold more than 90 per cent of the outstanding government bonds. This will in practice be impossible, since only a portion of the outstanding government bonds are traded freely. In any case, it would seriously hamper the liquidity of the Danish government bond market. Further, this would require pension funds and insurance companies to sell off a large proportion of their government bonds. This is clearly not desirable from a financial stability perspective. Government bonds of other countries could be bought, albeit this would introduce currency risk, which can be hard to

[1] See B. Buchholst et al.: "Liquidity of Danish Government and Covered Bonds - Before, During and After the Financial Crisis - Preliminary Findings", Danmarks Nationalbank Working Paper 2010 (70).

hedge against in the FX markets as these have not proven to be robust during financial stress. Furthermore, this could create challenges to the exchange rate peg.

These concerns regarding the new liquidity requirements are, however, acknowledged by the IMF in the Global Financial Stability Report (October 2010), where Danish covered bonds are highlighted as playing a significant role in financial institutions' liquidity management and that implementing the LCR would generate significant stresses. Further, my authorities strongly believe that liquid private debt markets as far as possible should be relied upon. Relying on other countries' government bonds may create incentives where countries with a high government debt are put in a more favorable position compared to countries with low government debt. This does not seem in line with the G20 commitment to reduce government debt.

In relation to ARM loans with a maturity of less than 1 year staff considers that such loans can pose a macro risk since movements in interest rates will have a sizeable impact on real estate values. Staff therefore welcomes the stable funding requirement which will likely reduce such loans. The Danish government acknowledges this, but one should also recognize the potential positive effect of ARM loans on macroeconomic stability when periods of economic slowdown go hand in hand with decreasing interest rates.

Economic Outlook

The Danish economy is gradually recovering. GDP is up by 3.6 per cent since 2009Q2, following the sharp decline in production and demand in the wake of the international, financial crisis. Unemployment has risen but yet remains surprisingly low, given the magnitude of the downturn, and total and long term unemployment is still lower than in many other countries and in previous downturns. Central government net debt and gross debt this year stand at respectively 23.4 per cent of GDP and 42.6 per cent GDP, which compares quite favorably with many other countries.

The international financial crisis accelerated the ongoing correction of the Danish housing market thus turning the soft landing, which was expected in the spring 2008 by most observers, into a hard landing. In fact, more than ¾ of the decline in house prices since the peak in 2007Q3 occurred in the two quarters following the financial market freeze in late September 2008. Hence, there was only <u>one</u> severe shock to the Danish economy – the freeze of international financial markets and the associated contraction of global trade, demand and asset prices. The shock quickly spread to a vulnerable housing and commercial real estate market, which was already in the process of adjusting, and other parts of the Danish economy, and hence added to the problems in the banking sector, which had gradually been evolving during the first part of 2008.

Policy reaction to the unfolding crisis was substantial, as acknowledged by IMF staff. On top of the automatic stabilizers – among the strongest in OECD countries – substantial discretionary fiscal easing was implemented. Public investment increased markedly in 2009 and will continue in 2010. The overall and public consumption has risen by more than planned. At the same, time private consumption is supported by tax cuts in the beginning of 2009 and again in 2010 and the pay-out of Special Pension (SP) savings in the second half of 2009. Along with a sharp drop in interest rates since the autumn of 2008, the fiscal easing has been a main driver of the recovery. Lower interest rates have, in particular, led to a stabilization of the housing market, as extended use of adjustable rate mortgages generate a stronger transmission – and thus enhanced efficiency – of monetary policy. The flipside is higher vulnerability to an eventual normalization of the monetary policy stance.

A commonly held view is that Danish households are highly indebted. My authorities point out, however, that the net wealth position – including private pension assets and housing equity – is quite solid in a historical context, despite the sharp drop in asset and housing prices from 2007 until early 2009. It has improved notably this year. But we acknowledge that parts of this wealth (housing and pensions) are less liquid, and gross financial debt has reached a high level. This situation involves some liquidity risk in times of financial turmoil.

With national accounts in for 2010Q3, GDP growth this year looks to be around 2 per cent, which is less than expected by staff. Public consumption was reduced in the third quarter, and next year my authorities expect growth to become more self-sustaining with continued growth in private consumption and rising exports, while public demand will contribute negatively to GDP growth. A GDP growth rate of 1¾ per cent is expected. Substantial risks to the outlook persist, primarily linked to developments in the international economy.

Private employment has fallen markedly, and labor adjustments in firms now seem to have come to an end. Overall, employment levels are still somewhat higher than in 2005, which is considered a year with relatively normal cyclical conditions. This reflects that the estimate of structural employment has increased by around 3¼ per cent since 2005, partly as a result of higher labor participation and a reduction of structural unemployment. Although long-term unemployment has risen due to the decline in economic activity, the level is still low in historical and international comparison. This is partly linked to the fact that long-term unemployment was exceptionally low when the crisis emerged. The flexible rules for firing and hiring and the active labor market policies have contributed to high job turnover and help unemployed find jobs.

Wage growth has come down to around 2–2½ per cent per annum, a level similar to our trading partners, after a number of years with excess wage increases. Despite a continued deterioration of competitiveness and loss of export market shares in recent years, the long record of current account surpluses has been maintained and the surplus now stands at close to 4 per cent of GDP. Consequently, the Danish foreign debt has in recent years turned into net foreign assets, around 7 per cent of GDP in the first half of 2010.

Fiscal policy

The crisis and the expansionary fiscal policy have weakened public finances. The structural deficit is expected to increase to 1¾ per cent of GDP in 2010 due to the fiscal policy easing. With no new consolidation efforts, the structural deficit would increase further in the next decades. Thus, it is paramount to tighten fiscal policy.

The fiscal consolidation agreement from May 2010 strengthens public finances through new initiatives of DKK 24 billion (1½ per cent of GDP) towards 2013 and a further DKK 2 billion through 2015. The agreement meets the recommendation from the EU in order to bring the fiscal deficit below 3 per cent of GDP by 2013 and is a significant step towards structural balance in 2015, the medium term fiscal target of the government.

Consolidation is implemented in three ways: through lower growth in public spending than previously planned, higher taxes, and a reform of the unemployment benefit system, which increases both employment and growth potential through 2015. This mix reflects several considerations, including that even further emphasis on lower public expenditures could be considered less credible and harder to get through parliament.

Moreover, the tax measures in the agreement are structurally well chosen, since the impact on labor supply is modest, and much lower than the employment gains due to the reform of the unemployment benefit system. It is estimated that the measures in the agreement will increase labor supply by some ⅓ per cent, including the impact from higher taxes. Moreover, the negative impact on labor supply from these tax hikes only amount to 15 per cent of the labor supply gains from the most recent – and fully financed – tax reform.

Thus, the tax reform and the fiscal consolidation agreement overall contribute to handling the demographic changes and long term fiscal sustainability. It complements the Welfare Agreement from 2007, which involved a 2-year rise of age thresholds for eligibility for retirement benefits taking effect in 2019, and also that the age thresholds for retirement benefits will increase gradually in line with higher life expectancy. Based on current projections, the reform can be expected to add some 8-10 per cent to employment in 2040

It remains a challenge to avoid local government expenditure overruns. Growth in public consumption has been higher than planned almost every year since 1993. However, in 2008 growth was lower than planned. That year sanctions in case of overruns were introduced in the form of reductions in the block grant from the central government. The accounts were in line with the agreed budget levels in 2008 hence the sanction was not enforced.

Expenditure growth must now be kept at bay in order to avoid a permanent weakening of the public finances, and it is a key objective to contain the growth in public consumption in the years to come. Therefore, as mentioned by staff, new initiatives are initiated in line with the fiscal consolidation agreement to strengthen the incentives for local government to limit the expenditures to the agreed level. The instruments are effective from 2011 and onwards. In addition, the agreement on the fiscal bill for 2011 includes new measures. In case of overruns in 2011, 60 per cent of the reduction is deducted individually in the block grants to the municipalities that spend more than budgeted and the rest of the deduction is collective.

Monetary and Exchange Rate Policy

The Danish authorities share the view that the very long standing exchange rate peg has served Denmark well. The inflation rate is low and stable and the exchange rate peg anchors inflation expectations, thus representing a key component of the Danish stability-oriented macroeconomic policy.

The financial crisis highlighted the challenges of being a small open economy with a shadow currency. As noted by the IMF staff, in the fall of 2008 Danmarks Nationalbank conducted substantial interventions in the foreign exchange market and increased policy interest rates significantly in order to defend the peg. Since autumn 2008 Danmarks Nationalbank has lowered the policy lending rate. The spread between the policy lending rate in Denmark and the euro area is now five basis points. Furthermore, the foreign exchange reserve has more than doubled since the end of October 2008. The experience in the fall of 2008 showed that very large amounts may be needed if the currency is under pressure. Hence, a substantial foreign exchange reserve is required. Overall, these events demonstrated the stabilization policy cost for Denmark (there are also costs related to currency exchange, smaller seignorage etc.) of being outside the euro zone, in particular in times of financial turbulence.

In June 2009 Danmarks Nationalbank introduced an interest margin between the policy lending rate and the interest rate on certificates. This margin gives banks and mortgage-credit institutes an incentive to settle liquidity differences among themselves in the money market rather than resorting to central bank's facilities.

The normalization process in the euro-area money market is closely monitored. A rise in the short-term money market interest rates in the euro area has recently led Danmarks Nationalbank to increase the rate of interest on certificates of deposit.

Productivity

Danish productivity levels are somewhat below the average of comparable advanced economies – and have trended downward in relative terms since the mid-1990s. Most of the underlying decline seems to be due to inefficient resource allocation. This may reflect that the allocation of resources between high-productivity firms and low-productivity firms within the same industry is inefficient. Another explanation is the concentration of highly educated workers in the public sector relative to the private sector. My authorities agree that reforms to intensify competition and accelerate firm exit and entry, especially in services, should help in the diffusion of knowledge and increase productivity.

Staff findings suggest that too much labor market flexibility limits productivity growth as it reduces firms' willingness to invest in the education of employees. Staff states that the flexible Danish framework with high labor market turnover might diminish labor search costs and limit investment in firm-specific human capital. This result could imply that Danish productivity growth could be higher with somewhat less flexible labor market policies. Our authorities recognize the theoretical mechanism between productivity growth and firm specific investments in human capital. Our authorities are, however, more skeptical whether a less flexible labor market could improve Danish productivity, and find that one should be careful to draw such a far-reaching conclusion on the basis of the empirical analysis. The virtues of low unemployment are to be preferred to possible marginal improvement in the average productivity of a lower employment base.

Denmark is one of the countries in the OECD with the lowest structural unemployment, reflecting that the Danish labor market is efficient and flexible. This efficiency and flexibility comes from high labor market mobility, which increases the number of job openings, making it easier for the unemployed to find new jobs – possibly in new lines of business. In this sense, the flexible Danish labor market supports reallocation of productive worker to the most efficient firms. Furthermore, other countries with very flexible labor markets, e.g., the United States, are apparently not facing the same sluggish labor productivity growth challenge.

Finally, while the low rate of productivity increases is certainly a problem to be addressed it has in part, as regards living standards, been compensated by a positive trend in the terms-of-trade and a substantial improvement in net foreign interest payments (due in part to the elimination of net foreign debt), with the latter comparable to 4 per cent of GDP over a period of 10 years.