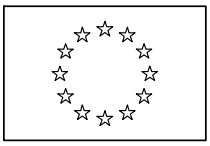

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In-Depth Review for DENMARK

in accordance with Article 5 of Regulation (EU) No 1176/2011 on the prevention and correction of macroeconomic imbalances

TABLE OF CONTENTS

EXECUTIVE SUMMARY AND CONCLUSIONS

This in-depth review takes a broad view of the Danish economy in order to identify actual or potential imbalances and the possible macroeconomic risks which they may entail. It should be acknowledged that the Danish economy has performed very well in many respects, recording for example relatively high levels of GDP per capita and a public debt level significantly below 60% of GDP, and many reforms have been undertaken over the last few decades to raise the country's growth potential. Nevertheless, the economy faces some challenges. The main observations of this review are:

- **The analysis suggests a deterioration in Denmark's competitive performance in its export markets for goods.** In fact, Denmark's losses in export market shares in goods over the entire period 2000-2010 were larger than for the (weighted) average of other EU member states. Most importantly, this is due to a deterioration in Denmark's competitive performance. It is also due to lower growth among Denmark's trading partners than among the trading partners of the EU. The latter suggests that Danish exports would benefit from being better represented in high-growth emerging markets. On the other hand, the product composition of Danish exports has partly counterbalanced the loss in market shares compared to the EU but not compared to similar countries such as the Netherlands and Germany.

- **The deterioration in Denmark's competitive performance seems to be linked to a rise in relative unit labour costs, reflecting both relatively higher wage growth and weaker productivity growth in Denmark than abroad.** Furthermore, real effective exchange rate movements have been unfavourable for Danish competitiveness. While the effect of high unit labour costs has been attenuated to some extent by favourable terms of trade developments, an adjustment in unit labour costs is warranted, via either lower wage growth or higher productivity growth.

- **While wage setting traditionally has been in the hands of social partners, the problem of slow productivity growth could be addressed by focusing on improvements in the educational system and strengthening competition in various sectors.** The problem of slow productivity growth has existed in Denmark since the mid-1990s and has been under investigation by various institutions in Denmark. The present government appointed a Productivity Commission to get to the heart of the problem and come up with proposals for productivity promoting measures.

- **While high household gross debt is to some extent a structural feature of the Danish economy, with household assets considerably exceeding liabilities, concerns regarding high household debt arise since developments in the housing market seem to have caused the debt to move beyond levels explained by structural factors. This poses higher potential risks in terms of financial and economic stability.** Elevated contributions to private pension saving schemes, large savings in real estate and a generous social safety-net provide citizens with reliable financial buffers. Nevertheless, most assets are illiquid and can only be realised at a high cost. Furthermore, the composition of mortgage loans has changed since 2003, with instalment-free and adjustable-rate loans gaining in popularity over fixed-rate loans with instalment. Thus, for a given debt level, households are more sensitive to

interest rates hikes and fluctuations in property prices now than they were a decade ago.

- **Risks to financial stability seem low** when assessed on the basis of financial institutions' low losses on loans and guarantees and a limited rise in the number of foreclosures and arrears following the outbreak of the crisis. **However, to get a clearer view of the situation, more information on the distribution of the type of assets and liabilities across households is necessary.** The Ministry of Business and Growth is currently collecting such data and undertaking a study which will shed light on the potential vulnerability of households in the event of different shocks to the economy. Danmarks Nationalbank is carrying out a similar study with regard to financial stability.

- **Risks to economic stability seem more pronounced, as the consequences of excessive swings in house prices and high debt have already been exposed.** The latter have contributed to large fluctuations in private consumption, currently constraining the economy's ability to recover as households are deleveraging. Changes to interest deductibility rules over the coming years should gradually exhibit a stronger downward pressure on the household debt level. However, relevant measures to avoid future housing bubbles and the associated excessive indebtedness in the medium term should be considered.

In this context, **the in-depth review concludes that Denmark is experiencing macroeconomic imbalances, which are not excessive but need to be addressed.** In particular, certain macroeconomic developments, notably underlying the external competitiveness and the potential risks related to household indebtedness, deserve attention so as to reduce the risk of adverse effects on the functioning of the economy.

Possible areas for relevant policy responses could include the removal of obstacles to competition and improving the quality of the educational system in order to tackle the problem of slow productivity growth. In order to get a clearer understanding of the household debt situation in terms of risks to financial stability, the distribution of the type of assets and liabilities across households would need to be investigated. Furthermore, with a view to correcting the pro-cyclical effects of and the debt bias in housing taxation, a realignment of the property value tax to actual market values or, as a second best option, a further reduction of the tax deductibility of interest payments could be considered. This could also restore neutrality among investment alternatives. In addition, removing the ceiling on the annual increase of the municipal land value tax could prevent future pro-cyclical effects of lagged tax increases. Such changes could be introduced gradually, taking into account the current need for stabilisation in the housing market.

1. INTRODUCTION

On 14 February 2012, the European Commission presented its first Alert Mechanism Report (AMR), prepared in accordance with Article 3 of Regulation (EU) No 1176/2011 on the prevention and correction of macroeconomic imbalances. The AMR serves as an initial screening device, helping to identify Member States that warrant further in-depth analysis to determine whether imbalances exist or risk of emerging. According to Article 5 of Regulation No 1176/2011, these country-specific "in-depth reviews" should examine the nature, origin and severity of macroeconomic developments in the Member State concerned, which constitute, or could lead to, imbalances. On the basis of this analysis, the Commission will establish whether it considers that an imbalance exists and what type of policy follow-up it will recommend to the Council.

For Denmark, the AMR identified a need to look more closely at whether Denmark is exhibiting macroeconomic imbalances of an internal and an external nature. On the external side, the AMR highlighted a long series of current account surpluses which, however, coincided with losses in export market shares over the past decades. On the internal side, the high level of private debt was identified as a matter of concern, mainly due to increasing household indebtedness in the context of the Danish housing boom. While prices have adjusted since 2007, the household debt remains very high, although this also reflects structural factors such as elevated contributions to private pension saving schemes.

Against this background, Section 2 of this review looks greater in detail into these developments covering both external and internal dimensions. This is followed by specific focus sections on the deterioration in competitiveness and the high household debt level (Section 3). Section 4 summarises the findings and presents possible policy considerations.

2. MACROECONOMIC SITUATION AND POTENTIAL IMBALANCES

2.1. Macro scene setter

The Danish economy recorded a period of almost continuous expansion between 1995 and 2008, with annual average growth rates of 2%. In 2006-2007, the economy experienced a period of overheating spurred by accelerating investment and private consumption growth on the back of a credit expansion and a surge in house prices of 54% between 2003 and 2007. Labour market bottlenecks and tight labour market conditions in general led to high wage growth while productivity growth rates were simultaneously falling or even negative. Since the mid-1990s, slow productivity growth and relatively high wage growth resulting in rising unit labour costs have contributed to a deterioration in competitiveness potentially connected with observed losses in export market shares.

The Danish economy was already slowing down before the onset of the financial crisis amidst a correction in the real estate market. Consequently, output plunged by almost 7½% between mid-2008 and mid-2009 as investment and exports collapsed. Moreover, private consumption contracted markedly along with a rise in the unemployment rate and a fall in house prices. House prices fell by around 20% in real terms between 2007 and 2009 and, after a stabilisation in 2010, dropped further by 6% in 2011 reaching 2004-levels at the end of the year.

The rebound of the Danish economy in 2010 was driven predominantly by fiscal stimulus measures, export growth and the turnaround in the inventory cycle. In 2011, despite solid exports, the overall performance of the Danish economy was subdued with GDP growth reaching only 1%, due in particular to consolidation efforts among households and firms. The sovereign debt crisis has, however, led to strong international demand for highly rated mortgage bonds and government securities from Denmark, resulting in low interest rates, which currently underpin the still fragile housing market.

In 2012 and 2013, real GDP is expected to grow at around 1-1½% which is among the highest growth rates in the EU and is driven primarily by domestic demand until such time as the global economy is expected to gradually gain more strength in 2013. Due to a less favourable external environment, export growth is likely to be substantially lower in 2012 than in 2011. In 2013, exports are expected to pick up on the back of a rise in world trade. Credit conditions are expected to remain tight and gross fixed capital formation continues to be driven largely by public initiatives, in line with the government's "kick-start" stimulus package and supported further by large-scale infrastructure projects. Private consumption is expected to accelerate in the course of 2012 as contributions to the voluntary early retirement pension (VERP) scheme are to be reimbursed following the adoption of the retirement reform by Parliament. However, it is envisaged that the housing market and a stagnating labour market will continue to weigh on consumer spending. Moreover, households are likely to continue with the needed balance sheet deleveraging and to maintain precautionary savings at a relatively high level during the current period of elevated economic uncertainty.

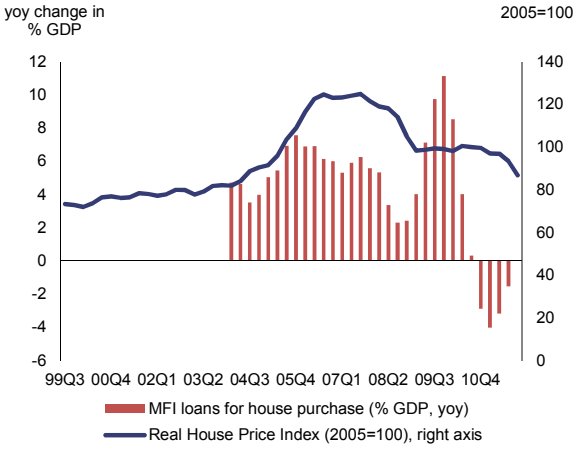
2.2. Potential sources of imbalances

2.2.1. Housing market developments

As in many other countries, Denmark experienced a period of easing credit conditions and falling structural unemployment rates between the mid-1990s and the outbreak of the economic and financial crisis. The Danish housing market experienced a period of almost continuous house price increases between 1993 and 2007, with accumulated growth in house prices of 183% over the period. According to the average annual growth of house prices, the period can be divided into two sections (Graph 1). Moderate growth was present between 1993 and 2003 (5.6% on average) while the recent cycle gained speed between 2003 and 2007 (11.4% on average). The introduction of instalment-free mortgages in 2003 and the property tax freeze since 2002 may have contributed to this development. Accordingly, nominal house prices rose by 54% between 2003 and 2007 when the bubble burst.

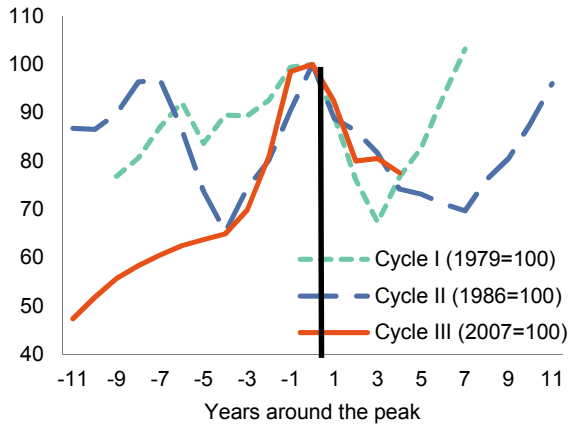
The amplitude and the duration of the house price cycle between 2003 and 2007 are comparable to the previous cycle that peaked in 1986 (Graph 2). However, contrary to the evolution in the 1980s, the acceleration in house prices in 2003 materialised after 10 years of previous moderate growth. While estimations of equilibrium house prices suggest that the moderate growth in house prices between 1993 and 2004, approximately, can be explained by evolutions in interest rates, disposable income, financial wealth and taxes etc., model calculations suggest that house price growth between 2004 and 2007 was excessive and, thus, represented a housing bubble (see Skaarup and Bødker (2010) and Dam et al. (2011)). The subsequent correction was sharp with a fall in real house prices of around 20% from 2007 to 2009, among the largest in the EU. After a break in 2010, house prices continued to fall by 6% last year against declining credit flows for housing purposes and worsening economic conditions and are now considered to be close to their equilibrium value.

Graph 1: House prices and credit affordability



Source: ECB, Commission services

Graph 2: Danish real house price dynamics over the past cycles

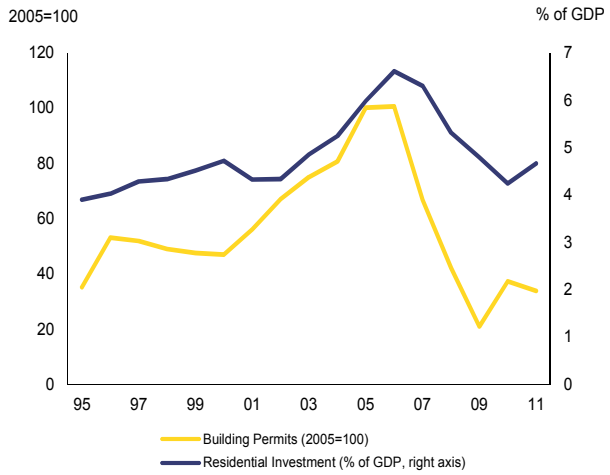


Source: OECD

The high-growth period of accelerating house prices caused a rise in the ratio of prices of properties on the market relative to the cost of constructing new houses and, hence, was accompanied by large property investment by the private sector (Graph 3). Accordingly, the weight of housing investment in total investment reached 29% in 2007 compared with 25% in 2003 and 20% in 1993. This represented a significant diversion of productive resources towards the construction sector. Employment in construction surged by almost 20% between 2003 and 2007 whereas employment in the private sector grew by 8%. When house prices plummeted from 2007 to 2009, the share of housing investment in total investment fell below the pre-boom level and in 2010, employment in the construction sector was back at the 2003-level.

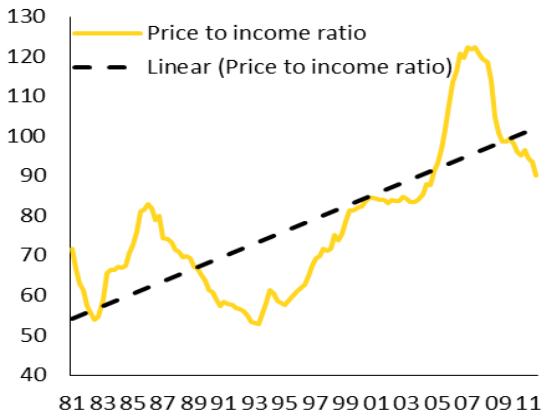
Future prospects for housing prices are uncertain. On the one hand, affordability as measured by price-to-income lies below its long-term average (Graph 4), pointing to easing downward pressures on the demand for housing. On the other hand, tight credit access for households, a historically high stock of houses for sale and a relatively low number of sale transactions point towards a further downward adjustment in house prices.

Graph 3: Housing investment



Source: Commission services

Graph 4: Affordability index (Price to income, 2005=100)



Source: OECD

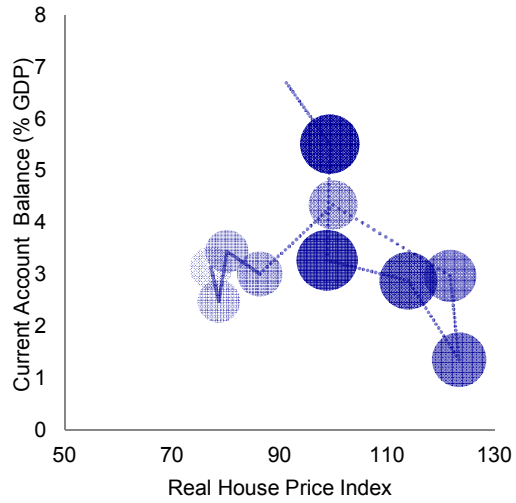
2.2.2. The anatomy of sectoral balance sheets

The escalation in house prices, as well as the upsurge in residential investment, contributed to a simultaneous accumulation of assets and liabilities by the private sector (Graph 5). Graph 5 shows how private sector debt increased in line with house prices from 2001 to 2007 and remained elevated in 2008 and 2009 when house prices adjusted. As households and firms started to deleverage in the aftermath of the crisis, the current account balance surged and reached a historically high level of 6.5% of GDP in 2011, reflecting that the general government deficit was more than counterweighted by savings in the private sector. In total, gross private sector debt increased by 38% from 2001 to 2010, more for households (48%) and less for non-financial corporations (26%) (Graph 6). Private sector debt in the EU rose by 29% over the same period.

Denmark's gross private sector debt ratio (243% of GDP in 2010) is the highest among EU Member States and has exceeded the indicative threshold of the MIP scoreboard since 2000. Whereas the debt level of non-financial corporations (101% of GDP in 2010) does not differ significantly from the EU average, household debt (142% of GDP in 2010), which is mainly linked to mortgages, exceeded the EU level by on average 50 pps. of GDP between 1995 and 2010. Tentative signs of a reversal appeared in 2010 (minus 4.3 pps.) partly due to rising household savings in the aftermath of the recession.

To some extent, high household gross debt is a structural feature of the Danish economy. With assets considerably exceeding liabilities, the net wealth position of Danish households, as opposed to their gross debt position, is comparable to that of many other EU Member States. Elevated compulsory contributions to private pension saving schemes, directly deducted from wages, large savings in real estate and a generous social safety-net provide citizens with reliable financial buffers (Graph 7). These features are explained in more detail in Section 3.2.

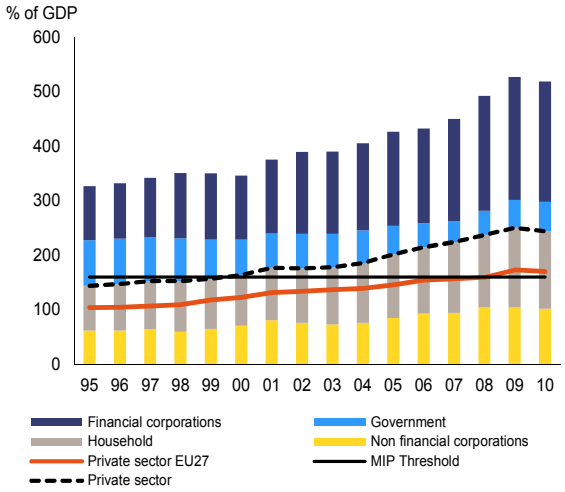
Graph 5: Current account balance, real house prices and private sector debt



Source: Commission services

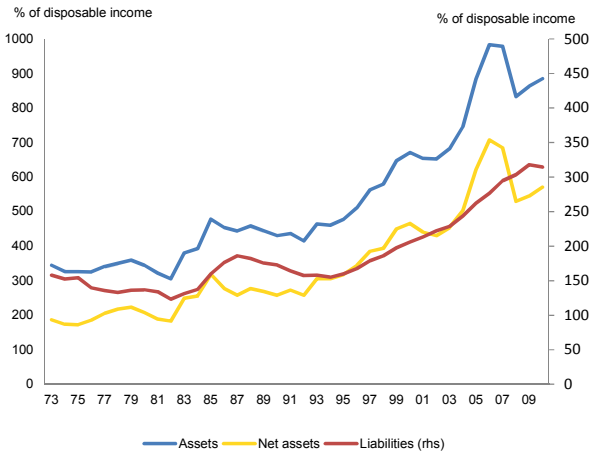
Notes:

Graph 6: Sectoral decomposition of total gross debt



Source: Commission services

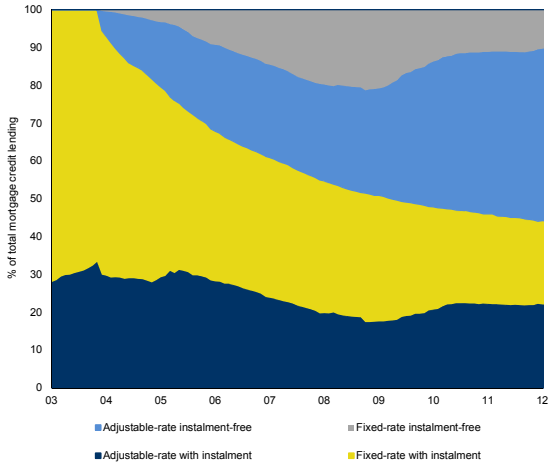
Graph 7: Household assets and liabilities



Source: Danmarks Nationalbank

Notes: Pension assets are not adjusted for estimated taxation at the time of pay-out.

Graph 8: Composition of mortgage debt (% of total)



Source: Statistics Denmark

Although the financial crisis, the rise in unemployment and the sharp correction of the housing bubble have taken a toll on wealth and disposable income, the net financial asset positions of households remain comfortable. However, the composition of mortgage loans has changed since 2003, with instalment-free and adjustable-rate loans gaining in popularity at the expense of fixed-rate loans with instalments (Graph 8). For a given debt level, households are therefore more sensitive to interest rates hikes and fluctuations in property prices now than they were ten years ago.

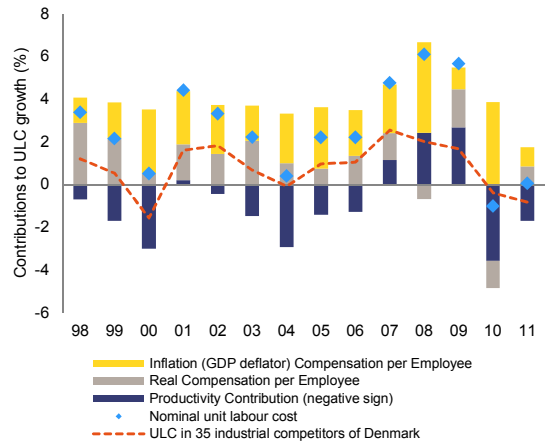
2.2.3. Competitiveness and export performance

While the expansion of the construction sector took place in Denmark, Danish unit labour cost growth almost continuously exceeded those of the country's trade partners (Graph 9). Since 2000, unit labour costs increased by 30% against a rise among Denmark's competitors of 11% reflecting both relatively higher wage increases and weaker productivity growth in Denmark. Furthermore, the appreciation of the euro and hence the Danish krone contributed to real effective exchange rate movements that have been unfavourable for Danish competitiveness (Graph 10). The acceleration in unit labour costs from 2006 to 2008 must be seen as emerging in the context of an overheating economy, particularly during 2006-2007. Labour market bottlenecks and tight labour market conditions in general led to high wage growth in subsequent years whereas productivity growth rates were simultaneously falling or even negative.

Following the crisis, the loss in cost competitiveness has only partly been corrected and it will take some time with relatively lower wage growth or higher productivity growth in Denmark than abroad to fully correct the past decade's deterioration in competitiveness. The recent correction has been a result of a depreciation of the krone and relatively strong productivity growth. The latter reflects a cyclical adjustment rather than a structural shift. As there is a lag between the time where output rises and firms start to hire new workers, labour productivity has a tendency to grow fast for some period of time following a turn in the cycle. Such a cyclical catch-up in productivity has in particular taken place in the industrial sector and services while productivity in the construction sector has been on a declining trend since the turn of the century.

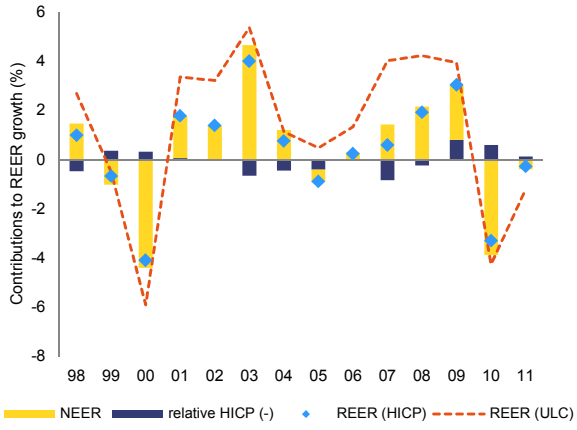
At the same time as Denmark's cost competitiveness deteriorated, the country lost export market shares. The loss in export market shares in goods and services over the period 1995 to 2010 amounted to 19.2% (Graph 11). This reflects, however, diverging developments in export market shares in goods and services, respectively. Over the period, the accumulated loss in export market shares in goods amounted to around 42% while in services, Denmark's export market shares improved by 42%. Since the share of Denmark's exports in goods in total exports is around 60%, and used to be even larger, the counterbalancing of services export was not sufficient to avoid losses in overall export market shares over the period 1995 to 2010.

Graph 9: Nominal unit labour costs and its components vis-à-vis IC35



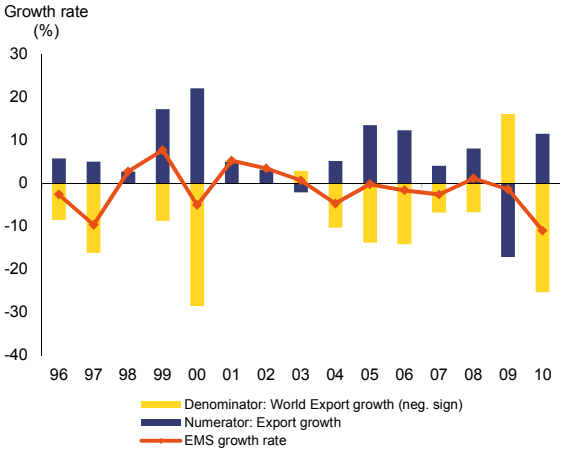
Source: Commission services

Graph 10: Nominal and real effective exchange rate (HICP- and ULC-based) vis-à-vis IC35



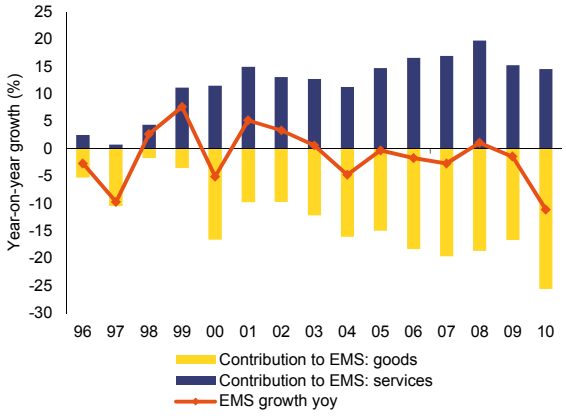
Source: Commission services

Graph 11: Export market shares (EMS) in goods and services (in value terms)



Source: Commission services

Graph 12: Contribution to the change in export market shares (in value terms)



Source: Commission services

Although Denmark's export market shares in goods trended downwards over the period 1995-2010, the development shows quite a cyclical pattern over economic cycles. For instance, in 2010, Denmark lost almost 15% of export market shares in goods after gaining 3.5% in 2009. Due to the relatively large share of less cyclically-sensitive goods in Danish goods exports, e.g. agricultural products and pharmaceuticals, Denmark has a tendency to record relatively large losses in export market shares in goods during upswings which are attenuated, or even turned to gains, in periods of economic slowdown. The evolution of market shares in services exports shows almost the opposite tendency, reflecting the large share of sea transport in Danish services exports (Graph 12).

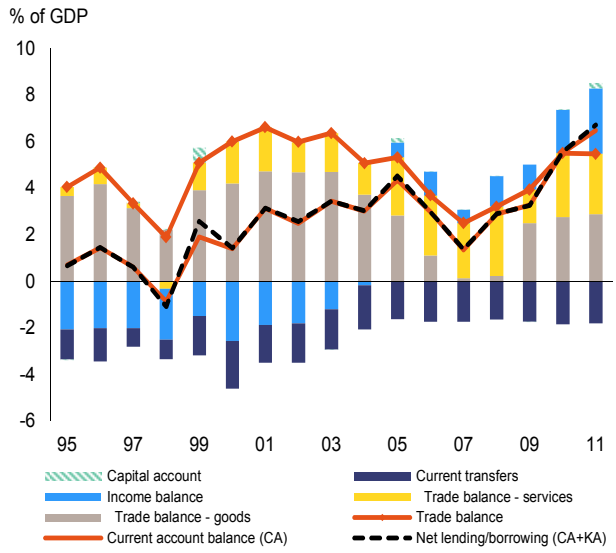
2.2.4. External positions

During the period from 1995 to 2011, the Danish current account balance recorded sustained large surpluses mainly thanks to the strong performance of exports of goods and services as well as, more recently, surpluses on the income balance (Graph 13). The income balance increased markedly since 2005 when it turned positive, reflecting a significant increase in property income in line with an improvement in the net international investment position. As a result of the sustained surpluses on the current account balance, the net international investment position turned positive for the first time in 2005 (Graph 14).

Since the net international investment position turned positive, Denmark has increased its assets more than its liabilities, in particular by raising the level of direct investment as well as other investment in stocks. The liabilities, on the other hand, continued to be comprised largely of borrowing, for instance in terms of bonds. Thus, Denmark's composition of assets and liabilities changed. With the assets, in general, being more risky than the liabilities they provided a higher (expected) return, thereby contributing to the increase in property income.

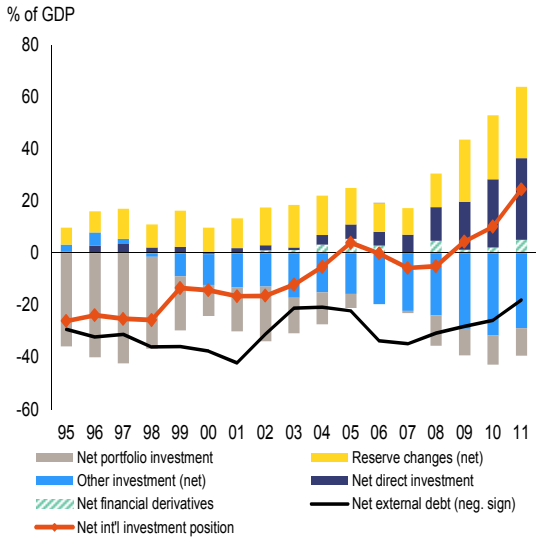
As mentioned, the rise in the current account surplus since 2007 partly reflected larger savings in the private sector which more than counterbalanced the deterioration in the general government balance (Graph 15). Financial corporations improved their already robust net lending position and non-financial corporations turned a rather small net-lending position into a net-borrowing position in the aftermath of the crisis. Similarly, households consolidated markedly, resulting in a reduction of their net lending position from 4.8% in 2007 to 0.5% in 2010.

Graph 13: Decomposition of the current account balance (% of GDP)



Source: Commission services

Graph 14: Components of Net IIP (% of GDP)

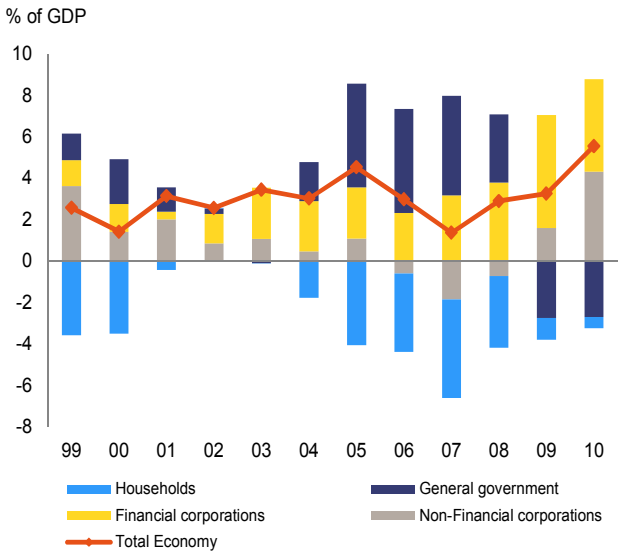


Source: Commission services

The rise in the current account since 2007 therefore reflects larger savings in the private sector and not a strong competitive performance. As discussed above, the competitive position as measured in terms of relative unit labour costs deteriorated over the past decade. However, in parallel with this development, favourable terms of trade dynamics, particularly in goods exports, contributed to the positive trade balance. This suggests that Denmark, in spite of

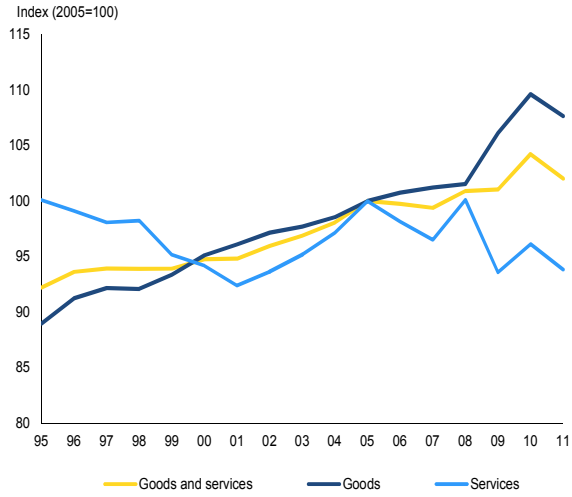
losses in cost competitiveness, was able to charge relatively high prices for its export products (Graph 16). As a result, Denmark's losses in export market shares in goods in value terms (29%) from 1997-2010 were less pronounced than in volume terms (35%).

Graph 15: Net lending/borrowing by sector (% of GDP)



Source: Commission services

Graph 16: Terms of trade in goods and services



Source: Commission services

3. IN-DEPTH ANALYSIS OF SELECTED TOPICS

3.1. Competitiveness and export performance

According to the horizontal analysis above, Denmark lost market shares in goods exports over the past couple of decades while at the same time, the country's competitive position as measures in terms of unit labour cost deteriorated. This suggests that a link between the two developments may exist.

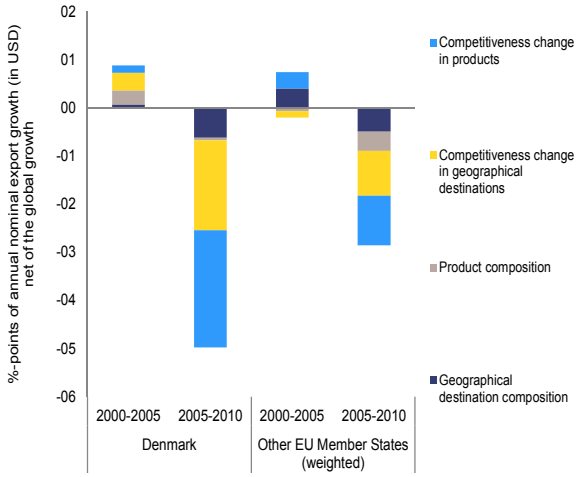
The link between competitiveness and market shares is difficult to disentangle, however. First, as mentioned above, the evolution of export market shares is, due to its composition, affected by the economic cycle which may mask the link between competitiveness and market shares. Second, the structural component of market shares has been exhibiting a downward trend as emerging economies become more and more present in global trade. Accordingly, Denmark will, for instance, record losses in market shares even under such circumstances that world exports rise only to countries to which Denmark has never exported or of products Denmark has never produced, i.e. although Denmark maintains its shares in its initial markets. This is due to the definition of market shares, measured as the share of the country's exports in total world exports.

In order to better evaluate Denmark's export performance and identify its drivers, it is therefore desirable to differentiate between 1) market share developments linked to growth in the country's existing product markets or among its trading partners relative to growth in the rest of the world's export markets and 2) *real* losses in market shares, i.e. losses due to inferior

performance on the specific markets where the country is already represented relative to other countries.

On the basis of Graph 17, the losses in Denmark's market shares between 2000 and 2010 relative to those of other EU Member States can to some extent be attributed to 1) a less favourable mix of geographical destinations for Danish exports but do to a larger extent seem to 2) represent real losses in markets shares, i.e. losses not merely due to unfavourable cyclical fluctuations or structural losses as a result of emerging economies engaging in world trade. In particular, comparing the reduction in Danish exports to the average reduction of other EU Member States from 2005 to 2010, it appears that Denmark lost relatively more export shares in the geographical destinations ('competitiveness change in geographical destination') and, especially, in the product markets ('competitiveness change in products') to which the country usually exported than other EU Member States.

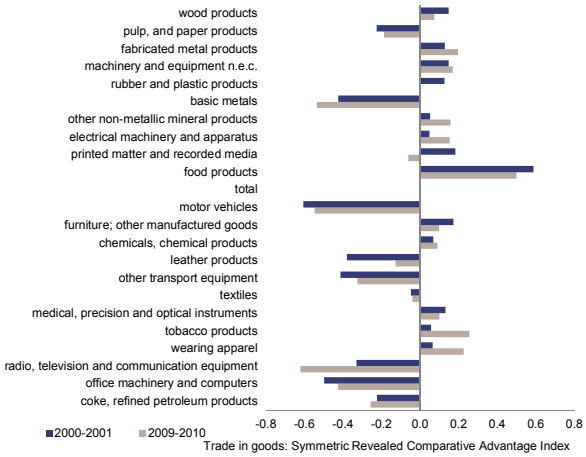
Graph 17: Growth in nominal exports relative to global growth in exports (shift-share analysis)



Source: Commission services' calculations based on COMTRADE

Notes: Decomposition of total (worldwide) nominal export growth (net of the global trade growth) into four components: i) growth due to the growth of destination markets, ii) growth due to the growth in product markets, iii) export growth to destination markets above their growth, iv) export growth in product markets above their growth. The decomposition tells whether a country was initially (in the beginning of a period) specialised in geographical destinations and/or sectors with dynamic or sluggish demand as well as whether a country has increased or decreased its share in these geographical or product markets.

Graph 18: Revealed comparative advantage across product categories



Source: Commission services' calculations based on COMTRADE

Notes: Symmetric Revealed Comparative Advantage index is an indicator of specialisation of a country in exports of goods relative to the world. The range value of the indicator is from -1 to +1; values greater than 0 imply specialisation of the country in the corresponding good.

In the next subsection, the developments in the geographical destination and product composition of Danish exports are explored before the link between the real losses in export

market shares and the deterioration in unit labour cost is investigated in the following subsection. Finally, potential drivers of Danish productivity growth, which is identified as an important tool for restoring competitiveness, are reviewed.

3.1.1. Trade partners and product composition

Over the period 2000-2010, Denmark's mix of geographical destinations for exports seems to have been unfavourable for Denmark compared with that of the EU average. Contrary to the EU average, the mix of geographical destinations for Danish exports almost did not contribute to Danish export market share growth during 2000-2005 whereas from 2005 to 2010, Denmark's loss in export market share due to weaker demand among its main trading partners was comparable to that of the EU average. Overall, this seems to suggest that Danish exports would benefit from being better represented in high growth markets. Indeed, in 2010, only 5% of Danish goods exports were absorbed by the high-growth BRIC-countries (Brazil, Russia, India and China) compared to e.g. 11% for Germany (Table 1).

Table 1: Share by export destination in total manufacturing exports

	Share in 2010 or *2008 (corresponding figure for DE in parenthesis) (%)		Change in share 2000-2010
EU27	74.7	(63.2)	-7.7
Germany	18.8		-3.1
Sweden	14.4	(2.2)	0.4
United Kingdom	9.0	(6.7)	-2.4
Norway	7.4	(0.8)	0.8
France	5.0	(10.1)	-0.5
The Netherlands	4.9	(6.7)	0.6
Finland	3.1	(0.9)	0.1
US	6.8	(7.6)	0.1
India*	0.5	(1.0)	-
Russia	2.0	(3.0)	1.0
China*	2.2	(6.2)	1.2
Brazil	0.6	(1.2)	0.1

Source: Commission services

The composition of trade partners, however, is linked to the country's product composition. For instance, Denmark produces relatively few items in the form of transport equipment and basic metals, which are in strong demand especially in the high-growth emerging economies. Although Danish export firms are indirectly represented in these markets, for instance as sub-contractors to the German car industry, a disproportionally large share of Danish export goods is indeed composed of food products (Graph 18). Nevertheless, the country's total product composition actually favoured Denmark's export market share performance in nominal terms, over the period 2000-2010, compared to that of other EU Member States. In fact, Denmark's product composition contributed significantly to the country's nominal export market share growth during the period 2000-2005 contrary to the product composition of other EU Member States (Graph 17).

The picture is similar in a study by the OECD reviewing the export performance of countries over the period 1995-2007 (see Beltramello et al. (2012)). However, the study shows that the

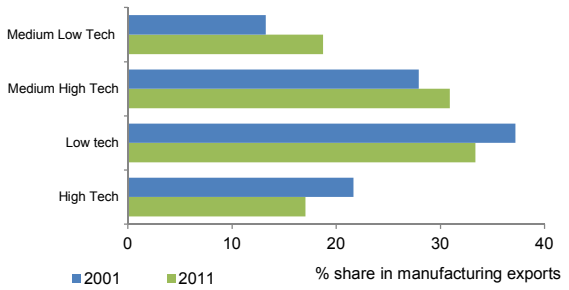
positive contribution from Denmark's product composition is smaller compared to countries like e.g. the Netherlands and Germany. When differentiating between export market shares in final consumption goods and intermediate goods, the product composition of final consumption goods even contributed negatively to Danish export market shares whereas it contributed positively for the two other countries. Hence, although the product composition seems to have been slightly more favourable compared with the weighted average of other EU Member States, this is not the case compared with two more similar countries. Nevertheless, the data suggest that Danish firms managed to specialise in products in a way that partly counteracted the loss in market shares due to the relatively unfavourable composition of destination partners.

Furthermore, there is some evidence from the OECD study that Danish export firms quite actively tried to redirect products in existing markets, perhaps in order to be able to continue to charge relatively high prices for them. A breakdown of countries' contributions to export growth from 1995 to 2007 on intensive and extensive margins (i.e. the increase in the value of bilateral trade flows already existing vs. the net result of entries and disappearance of exporter-importer product combinations) shows that while the intensive margin was the main driver of export growth for Denmark and most other developed countries over the period, Denmark's (and the Netherlands') extensive margin was the net result of a much higher number of entries and exits than in other countries. In particular, the study shows that the larger amount of entries and exits was a result of companies trying new combinations of existing export products on existing markets and, although to a lesser extent, of new products being exported to existing markets. Contrary to countries like Germany and Finland, and to some extent also the Netherlands and Sweden, the introduction of existing products to new markets almost did not contribute to the extensive margin over the period.

New combinations of existing products to existing markets and specialisation in new products to existing markets may have contributed to the favourable development in Denmark's terms of trade, particularly in goods, over the past decades. Indeed, a relatively large share of Danish products is in the more expensive medium high tech and high tech products, reflecting the large shares of *machinery and equipment* and *chemicals and man-made fibres*, including pharmaceuticals, in goods' export (Graph 19 and 20). The share of low-tech products continues to be the largest, however, due to the large share of food products. Nevertheless, the share of *food* products has fallen over the past decade and, instead, *crude petroleum and natural gas*, *fabricated metals* and *coke, refined petroleum and nuclear fuel*s as well as, for instance, *furs* have taken over[1].

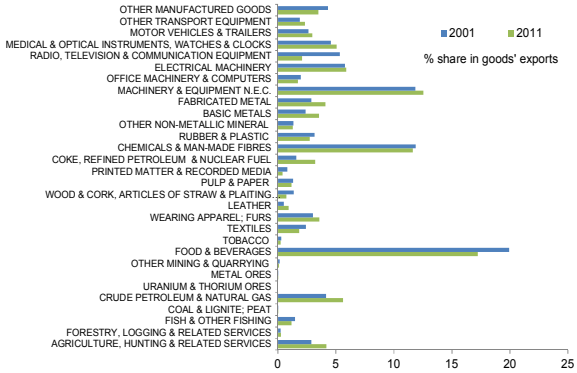
[1] The rise in the share of agricultural products in Graph 20 has only taken place since 2008 and may have to be seen in the light of the economic and financial crisis raising relative demand for short-duration goods.

Graph 19: Share of high and low tech products in manufacturing exports



Source: Commission services

Graph 20: Export composition in goods



Source: Commission services

Thus, if Denmark has managed to change its export composition towards less price sensitive goods or less price-sensitive destination markets, it may have been able to sell them at higher prices providing room for relatively high unit labour costs. Indeed, studies show that Danish companies have been specialising in so-called up-market products (i.e. products that can be sold at particularly high prices), for which the share in total exports increased during the period 1995-2005[2]. Hence, Denmark's focus on up-market products may to some extent justify its relatively high unit labour costs and prices, the latter having attenuated the country's loss in market shares in nominal values.

In the medium-to-long term, the share of medium and high-quality products may even counteract part of the structural drag on market shares, also as continued growth in e.g. the BRIC-countries will eventually lead to greater demand for this type of product. Still, the share of high-and medium-quality products is currently far too small to compensate for the losses in market shares due to losses in competitiveness (according to Graph 17). It would therefore also appear prudent to consider ways to improve competitive performance in Denmark's main export markets.

3.1.2. Market share losses and cost competitiveness

A closer look at Denmark's losses in export market shares in existing export markets, i.e. market share losses due to 'competitiveness change' in product or geographical destination markets, reveals that Denmark's market share losses in volumes (goods and services) have been relatively large compared to other Nordic countries, Germany or the Netherlands. At the same time, the rise in unit labour costs (ULC) in Denmark has been more pronounced than in these countries. The rise in unit labour costs may therefore have had a negative impact on export growth in Denmark, which has been compensated only to some extent by higher prices since the losses in market shares in value terms have been smaller than in volume terms (see Danish Economic Council (2009)).

[2] For references, see Pedersen and Riishøj (2008), Ministry of Economics and Business (2007) and Ministry of Economics and Business (2009).

To better disentangle the relationship between unit labour cost competitiveness and export performance, it is helpful to look at the manufacturing sector, which accounts for almost half of total Danish exports. As labour intensity in manufacturing is higher than in other sectors, wage competitiveness plays a larger role for the export performance of manufacturing goods than, for instance, for agricultural products, energy and sea transport. Not surprisingly, however, the picture within manufacturing industry is the same as for total exports. During the period 1995-2009, Danish wages in manufacturing rose by 15% relative to corresponding manufacturing wages abroad. The export performance of Danish industries compared to countries such as Germany, Sweden, France and the Netherlands deteriorated during the same period, when measured both in terms of relative export volumes and in terms of export market shares (see Kristensen et al. (2010)).

Accordingly, Denmark's market shares in manufactured goods fell by 25% over the period 1995-2009 in volume terms. Based on values, the fall was significantly smaller (13%) suggesting that Danish export prices increased faster than the corresponding prices of Denmark's competitors[3]. Hence, as for total exports, there seems to be a negative relationship between market shares in volumes and wage competitiveness indicating that higher unit labour costs may have forced Danish export companies to raise prices at the expense of volumes sold.

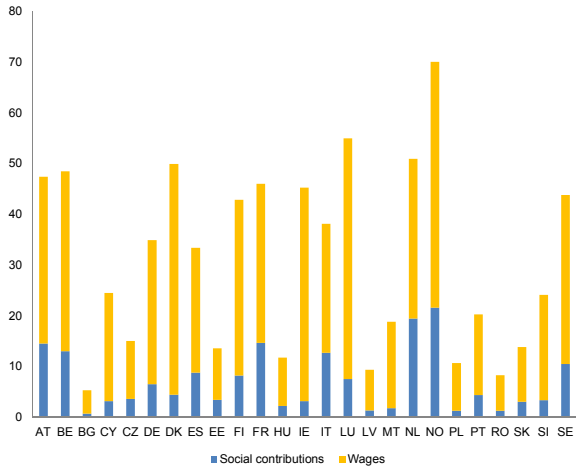
As pointed to in the previous subsection, rising export prices and lower export volumes coupled with rising wages could indicate that, due to the labour cost pressure, Danish firms are moving to markets with higher prices in order to maintain profit margins. If the growth of these export markets is below the average, this could also explain the observed fall in export shares relative to other EU Member States due to the geographical destination composition. If, on the other hand, the rise in prices at the expense of volumes sold, implies that companies are squeezing profit-margins, unit labour costs will have to adjust in the medium term, either via lower wage growth or via higher productivity growth.

Overall, the evidence discussed above suggests that Denmark's deteriorating performance in its current main export markets warrants an adjustment in unit labour costs, either via lower growth in compensation of employees or higher productivity growth or both. A further change in Denmark's export composition in goods may also be desirable and could probably also be achieved by an adjustment in unit labour costs creating a stronger link between productivity and compensation of employees in the wage setting process.

Although compensation of employees also includes non-wage elements (for example social security contributions), the level of social contributions are not as high in Denmark as for instance in the other Nordic countries and the Netherlands, and changes in the level of social contributions did not affect the rise in the level of compensation of employees much between 1999 and 2010 (Graph 21 and 22). Hence, a large part of the compensation of workers and, thus, unit labour costs, are influenced by the wage setting process and are not subject to, for instance, political decisions.

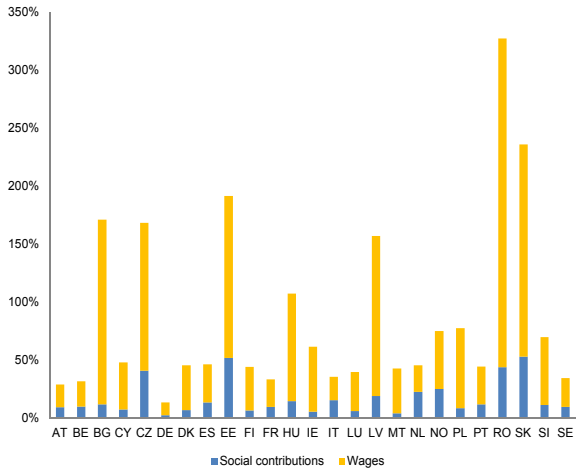
[3] According to Kristensen et al. (2010), computation of manufactured export goods in volumes is more uncertain than in values, due to difficulties in estimating the price deflator.

Graph 21: Compensation per employee (2010, 1,000 EUR)



Source: Commission services

Graph 22: Change in compensation per employee between 1999 and 2010 (%)



Source: Commission services

Instead, some policy instruments can be used in order to address the slow productivity growth that has characterised the Danish economy since 1995. Although it has not been possible so far to pinpoint one single factor explaining this slowdown, weak education performance compared to the cost of the educational system as well as weak competition in certain sectors are among the possible causes thereof (see next subsection) which were also pointed out in European Commission (2011). Solving the problem of slow productivity growth should also be seen in the light of raising Denmark's growth potential in order to maintain its high standard of living - including comprehensive access to welfare services.

3.1.3. Productivity

Labour productivity growth started slowing down in most advanced economies in the mid-1990s. However, the slowdown was particularly pronounced in Denmark despite comparable performance in areas traditionally considered important for productivity, such as capital accumulation, R&D spending, education and labour market flexibility. Productivity performance has been particularly weak in the construction, retail trade and services sectors.

While it has proven difficult to identify the factors behind the falling trend in productivity growth in Denmark and to come up with clear-cut policy conclusions, research results point towards a number of factors at play. Firstly, barriers to competition in Denmark exist, particularly in the construction and retail sectors, and there is significant empirical evidence that competition affects productivity positively (see McKinsey and Company (2010)). The construction sector is characterised by a fragmented market with many small companies limiting economies of scale and at the same time, national standards make the market less attractive for foreign companies. The retail sector is characterised by limited foreign competition and few large-scale supermarkets partly as a result of strict zoning laws.

The performance of the educational system is not proportionate to its cost and also in terms of R&D expenditure, Denmark ranks high compared to the euro area average while the

conversion of R&D expenditure into marketable innovations is not as well-functioning as it could be. Similarly, the productivity gains from Denmark's R&D expenditure are low compared to other countries (see K. McMorrow (2011)). While there may therefore be reasons to look into whether the allocation of R&D resources is reasonable, there may also be a potential for Danish firms to better make use of knowledge created abroad.

Openness to foreign countries and foreign direct investment can contribute in this respect. Foreign-owned firms in Denmark are more productive than Danish firms and firms that export services are more productive than non-exporting firms in the services sector[4]. However, while outward foreign direct investment is growing, Denmark has recorded a flat trend in inward foreign direct investment since 2007. It is too early to say if this is only related to the economic and financial crisis or if Denmark has more pertinent problems attracting foreign direct investment.

Furthermore, there appears to be some misallocation of resources across firms within sectors. The Danish Economic Council (2010) has investigated a series of potential causes for relatively weaker TFP growth in Denmark compared to countries abroad, of which the firm-level misallocation of resources within industries appears the strongest. Hence, the re-allocation of workers from low-productivity firms to higher-productivity (often larger) firms is insufficient and the share of low-productivity firms in employment is very high. The rate of reallocation between industries is on the other hand discarded as a specific cause for weaker TFP growth in Denmark compared to abroad, as this is high in the Danish labour market.

Accordingly, the Danish flexicurity system does not impede on productivity growth as it rather augments the degrees of labour reallocation between industries and firms, and has thus the potential to raise productivity growth (see Bassanini et al. (2008)). Indeed, job turnover in Denmark is very high, with a large share of employees remaining in a job no longer than 1-3 years. However, the fact that high labour flexibility reduces incentives to invest in human capital as employers run the risk that employees leave the firm is attenuated by high public expenditure on active labour market policies and life-long-learning. Furthermore, good opportunities for skills-upgrading for employees are provided through collective agreements.

The construction of the tax system may also hamper productivity growth by reducing the return on productivity boosting investment (see Arnold et al. (2011)). In Denmark, the marginal tax rate on high incomes kicks in at an income level only slightly above the average which, in isolation, also reduces Denmark's attractiveness for high-skilled workers from abroad.

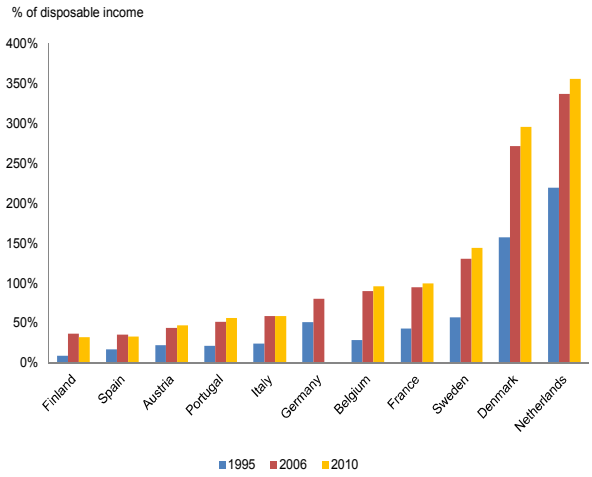
3.2. Household debt

3.2.1. Household gross debt developments

High household debt is to some extent a structural feature of the Danish economy. Elevated compulsory contributions to private pension saving schemes (Graph 23), amounting to 11% directly deducted from the gross wage for an average worker, imply that households also have a relatively high level of financial assets. Compulsory pension savings schemes were introduced for some collective agreements in the late 1980s and the pension payments expanded strongly from the beginning of the 1990s as the pension saving schemes became more widespread among trade groups (Graph 24).

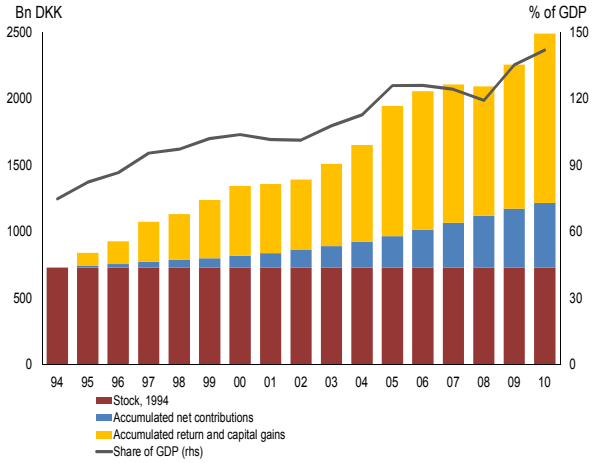
[4] For references, see Ministry of Economics and Business (2011) and Skaksen (2011).

Graph 23: Private pension wealth



Source: Danmarks Nationalbank

Graph 24: Pension stock and returns



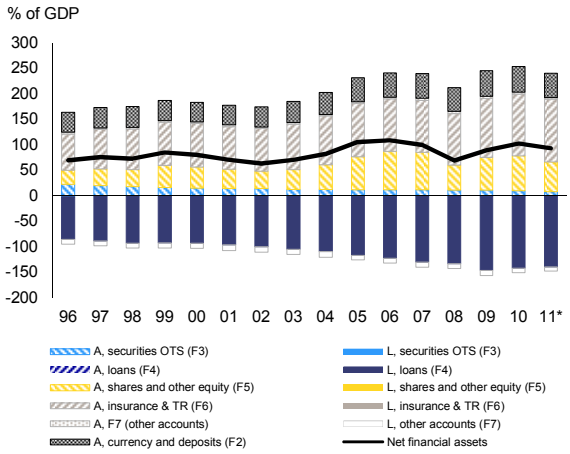
Source: Danmarks Nationalbank

As the level of pension savings cannot directly be decided by employees themselves, borrowing can be used as an offsetting instrument for the household to decide its overall saving level[5]. As a consequence, the expansion of pension wealth led to a mutual increase in households' pension assets and gross debt, while the net financial assets of households remained broadly constant from the mid-1990s and until 2011 (Graph 25).

Furthermore, a generous social safety-net provides citizens with reliable financial buffers and a well-developed market for housing financing, including a robust mortgage system which makes it easy for households to fund house purchases through loans, provides incentives for investment in housing (Graph 26 and Box 1). As debt-related costs have fallen and the possibilities for borrowing have risen, there has been a simultaneous increase in housing assets and gross debt among households, not only in Denmark but also in other countries since the mid-1990s (Graph 27 and 28). Consequently, the net wealth position of Danish households, as opposed to their gross debt position, is comparable to that of many other EU Member States.

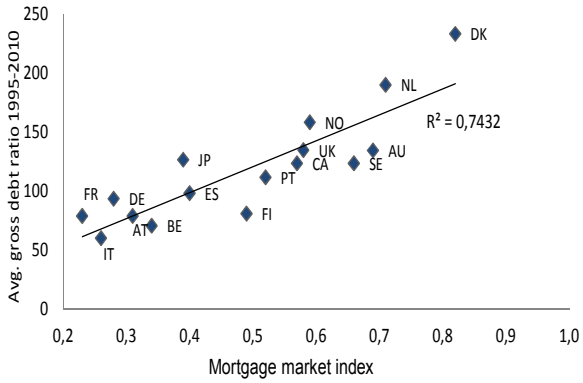
5 It is difficult to estimate the degree to which households' pension savings are off-set by reductions in other savings. According to Isaksen et al. (2011), gross debt rises by 30-40% of the rise in pension wealth. According to the Danish Economic Council (2008), other savings are reduced by only 20-30% of the rise in pension savings.

Graph 25: Net financial assets of households



Source: Commission services

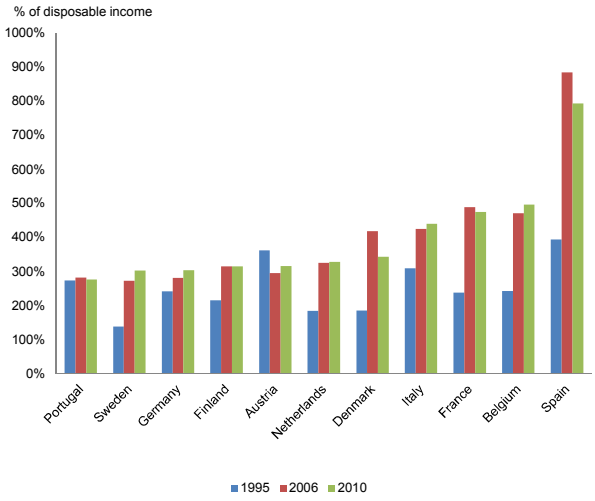
Graph 26: Correlation between degree of financial innovation/liberalisation and the household debt ratio



Source: Danmarks Nationalbank

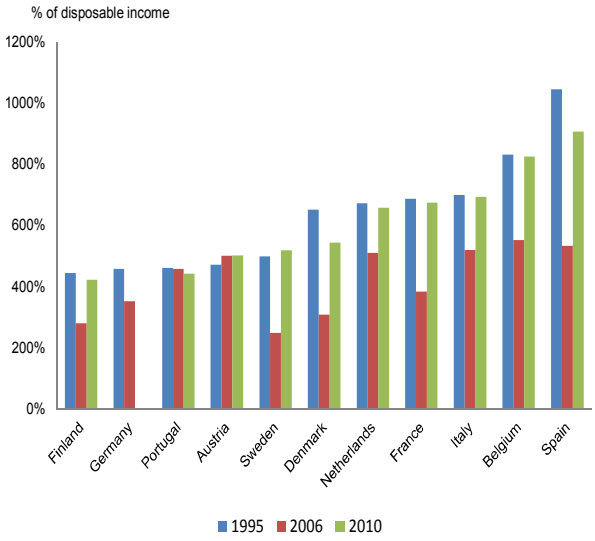
Notes: Data exclude the US. If the US is included, R^2 is 0.4891.

Graph 27: Housing gross wealth, 1996, 2006 and 2010



Source: Danmarks Nationalbank.

Graph 28: Household net wealth, 1996, 2006 and 2010



Source: Danmarks Nationalbank.

Box 1: The Danish mortgage system

The traditional Danish model of financing mortgages through bond issuance has been in operation for more than 200 years. The Danish mortgage bond market is the largest in the world in terms of GDP and the second largest in Europe in absolute terms (behind Spain). The stock of mortgage bonds was four times the size of outstanding Danish government gross debt in 2010.

Key principles of the traditional mortgage model

- Historically, only mortgage credit institutes (MCIs) were allowed to grant loans against mortgages on real estate under tight legal conditions, e.g. a loan-to-value ratio for owner-occupied dwellings of 80%. MCIs finance their loans by issuing bonds only and do not rely on deposits or interbank-funding.

- MCIs issue mortgage bonds on a daily basis to finance their lending activities. The bonds issued correspond to the loan conditions that borrowers sign with the MCI. Hence, the payments on the bonds match the payments on the loans. This "match-funding principle" prevents MCI losses on most financial risks, including interest rate risks, with the notable exception of credit risk. At the same time, the match-funding principle allows for transparency as regards loan costs and prices. Borrowers pay a transparent separate margin to the MCI (covering costs and expected losses).

- MCIs are obliged by law to comply with a balance principle preventing MCIs from incurring any financial risks except credit risk. Historically, the required balance principle was a strict match-funding principle. Although the required balance principle has been relaxed over time, allowing MCIs to a very limited extend to operate with non-hedged imbalances, MCIs have only done so in very few cases.

- Borrowers have the right to make early repayment without penalty fees. Early repayment can take place at the lower of par and the market price of the outstanding bond. Borrowers can purchase their mortgage bond at par in a low-interest rate environment – and subsequently obtain a new mortgage loan at a lower rate.

- An efficient recourse mechanism, i.e. foreclosure proceedings in case of non-payment of interest or principal by a borrower, limits the risk of long legal proceedings. Courts reach a decision rapidly and forced property sales take place usually within 6 months. MCIs' relatively prudent lending standards and borrowers' personal liability for mortgage loans also limit the credit risks for MCIs.

Innovation and latest developments

The Danish mortgage model underwent a major change on 1 July 2007 when rules regarding covered bonds were implemented to comply with the Capital Requirements Directive. New covered bond types (the so-called "Særligt dækkede obligationer" – SDOs), in addition to the traditional mortgage bonds ("Realkreditobligationer" – ROs), were introduced allowing issuance also by commercial banks. Moreover, limits regarding the length of a mortgage loan (30 years and 10 years for instalment-free mortgages) were removed for the new bond types. The new legislation also further relaxed the historic requirement to apply the match-funding

principle, although all MCIs so far has chosen to maintain this principle on a voluntary basis for all covered bonds – including SDOs – issued by MCIs.

As only the new covered bond types (SDOs) comply with EU-wide covered-bond legislation, they benefit from a more lenient capital requirement regulation than traditional bonds (ROs). Between January 2008 and January 2011, their share in total issuance of covered bonds rose from 14% to 62%, while the share of traditional bonds decreased from 86% to 38%[6].

The Capital Requirement Directive also imposed the condition that the loan-to-value (LTV)-ratios of 80% are to be respected for the entire life-span of the loan. To this end, the MCIs are currently undertaking measures to ensure the provision of additional collateral in case of a fall in house prices. For instance, in 2012, Denmark's largest mortgage institute, Nykredit, is introducing a so-called two-layer system, where the LTV ratio of instalment-free and/or adjustable rate loans is limited to 60%. The remaining 20% has to be covered by fixed rate loans with instalments.

Key figures and challenges

- The amount of outstanding mortgage bonds (SDOs + ROs) averaged DKK 2.6 trillion (EUR 344 billion, 150% of GDP) in 2010. 90% of these were issued in Danish kroner and 10% in euro. Up to 89% of mortgage bonds were held domestically. This compares to general government gross debt averaging DKK 753 billion (EUR 101 billion, 43% of GDP) in 2010.

- Up to one quarter of mortgage bonds is held by pension funds and life insurers, while Danish commercial banks, MCIs and investment funds hold half of the mortgage bonds. Life-insurance companies and cross-sector pension funds, together accounting for around 70% of pension savings in 2009, held 30% of their assets in mortgage bonds. About a fifth of commercial banks' total assets were invested in MFI bonds (of which a large proportion is likely to be mortgage bonds).

- The currently-negotiated Basel III capital requirements might pose a challenge. In particular, the intention to consider only sovereign debt as extremely high liquid and secure could have severe repercussions on the Danish MFI sector, given the size of the mortgage bond market, the limited amount of government bonds, and the need to shift towards "safer" assets. At the same time, this might increase borrowing costs.

- Adjustable-rate mortgages (ARMs) were introduced in 1996 with interest-rate reset frequencies ranging across 1, 3, 5 to 10 years. The popularity of these loans has increased rapidly. Moreover, floating-rate loans with interest-rate adjustment cycles below one year (3 or 6 months) also exist, but they have a fairly limited market share.

- All loan types have since 2003 also been offered "instalment-free". At the end of 2010, 54% of all outstanding mortgage loans were instalment-free, of which 85% were ARM loans.

The large savings of Danish households in pensions and property investment should also be seen in the light of the structure of the tax system. As in most comparable countries, by taxing returns to savings placed in pension funds at a low rate relative to other capital income, the

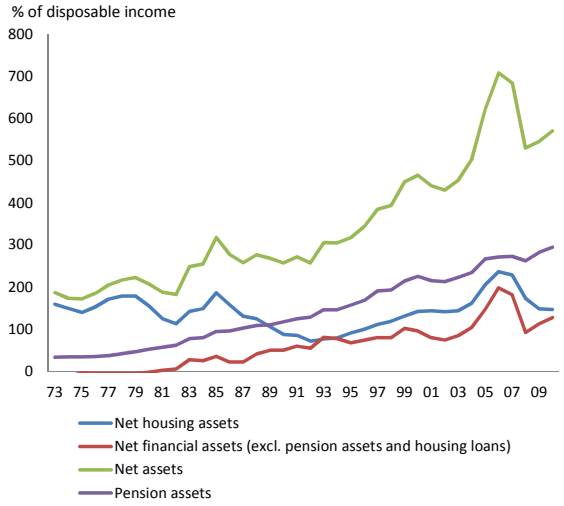
[6] ROs issued prior to 1 January 2008 also benefit from lenient capital requirements.

tax system provides incentives to save via pension schemes rather than via other forms of financial wealth. Furthermore, an effective property value tax rate below the neutral level given the tax value of deductions of interest payments may have provided incentives for the accumulation of private debt linked to housing wealth. As a result of the 2009 tax reform, interest deductibility is gradually being lowered but the effective property value tax rate will remain below the neutral level. Hence, these features of the tax system have probably also contributed to the concurrent increase in household assets and liabilities from the beginning of the 1990s.

Concerns regarding household debt have arisen since debt levels increased significantly in line with house prices during the period 2003-2007. The introduction of innovative financial products (instalment-free mortgages since 2003) and tax incentives (property value tax freeze since 2002) are among the factors that may have triggered the housing bubble (see Dam et al. (2011)).

Furthermore, as part of the tax freeze, a ceiling of the annual increase of the municipal land value tax was introduced in 2003. As the land values have increased more than the annual ceilings since 2003, a backlog of land value tax increases was accumulated until housing prices peaked in 2007 and has since given rise to annual increases in the land value tax simultaneously with price reductions. Hence, as the property value tax, the land value tax has acted pro-cyclically as a result of the tax freeze.

Graph 29: Households' net assets, net housing assets, pension assets and other net financial assets



Source: Danmarks Nationalbank and Commission services' calculations

Notes: Pension assets are not adjusted for estimated taxation at the time of pay-out.

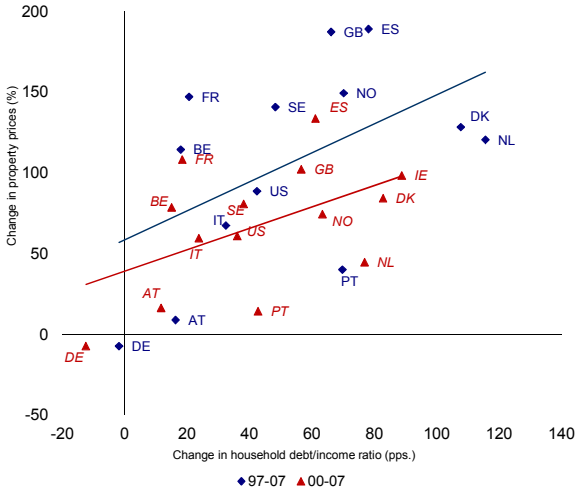
As the housing bubble burst, household net wealth dropped markedly (Graph 29), but the net asset positions of households remain comfortable, also in an historical perspective, thanks to sizeable deposits, holdings of securities and the large savings in both pension funds and real

estate. Nevertheless, real estate and pension savings are highly illiquid assets and the situation on the real estate market remains fragile.

Consequently, the housing bubble seems to have caused household indebtedness to move beyond levels that can be explained by structural factors. Isaksen et al. (2011) show, in a cross-country study, that the rise in household debt from 1995 to 2010 can be explained to a large extent by factors such as higher pension savings, a rise in public sector net assets and a decline in structural unemployment. However, for both Denmark and the Netherlands, the change in household debt from 1995 to 2010 was larger than explained by the model formulated in the study, and, hence, than explained by the mentioned structural factors.

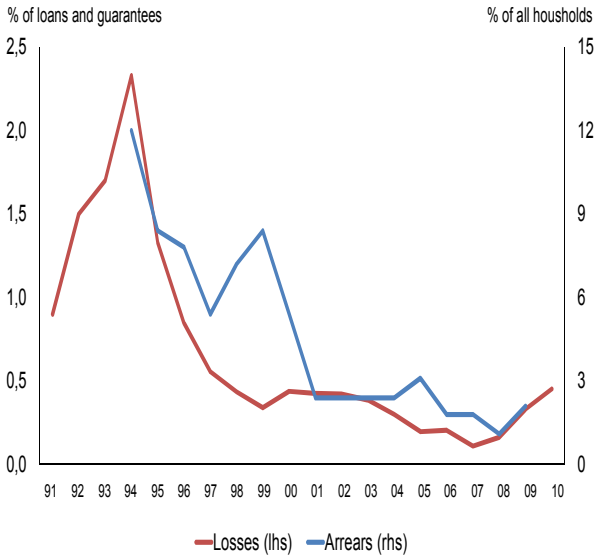
While for Denmark, this probably partly reflects the fact that a cross-country study cannot sufficiently take the features of the sophisticated Danish mortgage system and the tax system into account, part of the excessive rise in the debt level seems to be linked to developments in the housing market (Graph 30). Should this be the case, the household debt level in the aftermath of the price correction represents an imbalance that poses increased economic risks, in particular through potential effects via the financial sector (potential increases in non-performing loans) and private consumption (e.g. the need for deleveraging due to erosion of asset values or high debt-service burden).

Graph 30: Correlation between property price and household debt developments, 1997-2007



Source: Commission services

Graph 31: Danish financial institutions' losses on loans and guaranties and the share of households in arrears



Source: Danmarks Nationalbank

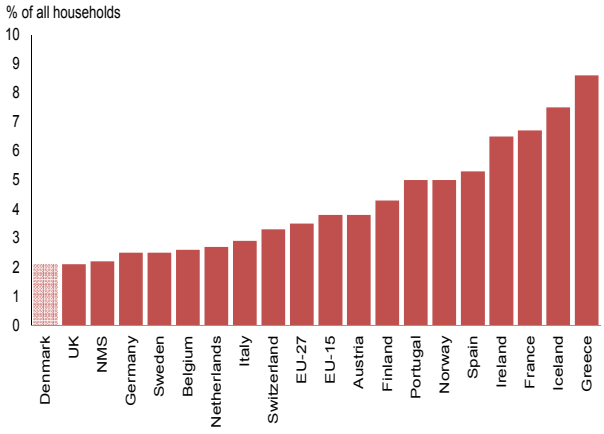
3.2.2. Risks to financial stability

In terms of financial stability, the consequences of the rise in household debt have been contained so far. During the last 15 years during which the household gross debt ratio has doubled, the financial sector in Denmark has only incurred small losses on loans to households compared to the crisis in the beginning of the 1990s. In spite of the rise in unemployment and the sharp correction in house prices following the recent financial crisis, Danish financial institutes' losses on loans and guaranties have not exceeded 0.5% (Graph 31). In addition, the share of total households indicating that housing-related costs represent a

financial burden increased only slightly between 2007 and 2009. Similarly, the share of households indicating that they are in arrears with their housing loan or housing rent has remained below 3% and was the lowest among a broad number of EU Member States in 2009 (Graph 32). As a result, the number of foreclosures rose but remained at a moderate level in a historical perspective (Graph 33).

Arguably, the consequences of the larger share of adjustable-rate mortgage loans among households were mitigated by the drop in interest rates on Danish mortgage bonds as the outbreak of the sovereign debt crisis led to strong international demand for these highly-rated bonds as well as for government securities from Denmark. However, the increase in the share of adjustable-rate loans makes households more sensitive to interest rate hikes than previously and it is therefore pertinent to investigate how vulnerable households are to different shocks to the economy. According to Danmarks Nationalbank (2010), only 3.2% of total household debt is concentrated among financially vulnerable households (mainly young people with low income levels living in rented property). Even under a severe scenario, i.e. an increase of the unemployment rate by 5 pps. and a rise in interest rates by 4 pps., debt accumulated in vulnerable households would not exceed 7% of total debt.

Graph 32: Arrears (mortgage or rent) 2009



Source: Danmarks Nationalbank

Graph 33: Foreclosures

Source: Commission services

Furthermore, preliminary results of a study carried out by Denmark's largest mortgage institute, Nykredit, on the characteristics of their customers show that only 1.7% of all customers and 2.5% of adjustable-rate-mortgage customers without instalment have loan-to-value ratios exceeding 100%. With regard to their financial position, borrowers of adjustable-rate loans have, on average, and across age groups and regions, higher incomes than fixed rate borrowers, and there is no major difference between the income levels of borrowers of instalment-free loans and borrowers of loans with instalment[7]. Hence, potential fears of, for instance, first-time buyers having been forced to take up adjustable-rate loans in order to be able to enter the housing market do not seem to be supported by the data.

On this basis, the household debt level does not appear to constitute a severe threat to the economy in terms of financial stability at the current juncture. To get a clearer picture of the situation, however, more detailed micro data on the distribution of assets and liabilities across

[7] The results are based on income data from 2009 and borrower behaviour as of the beginning of 2011.

households, including the type of loans, are required. The Ministry of Business and Growth is currently undertaking such a study which is not yet finished. The study should shed light on the potential vulnerability of households in the event of different shocks to the economy. Danmarks Nationalbank is carrying out a similar study with regard to financial stability.

Another challenge related to the larger share of adjustable-rate loans is the increased risk that adverse developments in the market at the time of refinancing of adjustable-rate loans would have undesirable effects on house owners and mortgage institutes, as most refinancing auctions currently take place in December. To counter this possibility, the mortgage institutes have taken some measures to spread auctions refinancing adjustable-rate loans over the year so as to reduce the refinancing risk. As a result, refinancing auctions should be spread over the year by 2017. A working group consisting of the financial sector, Danmarks Nationalbank, the Danish Financial Supervisory Authority and the Ministry of Business and Growth has also been set up in order to address the need for spreading the refinancing auctions over the year.

Finally, the EU's capital requirement directive, which was implemented in Danish law in July 2007, poses a potential challenge for the Danish mortgage institutes as it requires that loan-to-value (LTV) ratios of 80% are respected for the entire life-span of the so-called "Særligt dækkede obligationer" (SDOs). These new bond types, which were introduced in 2007 alongside the traditional mortgage bonds ("Realkreditobligationer" – ROs), now constitute more than 60% of all covered bonds (see Box 1). In the current environment of low inflation and only very moderate house price increases, the automatic downward pressure on the LTV ratio, as observed prior to the crisis, is no longer as strong and it is therefore relevant to investigate the mortgage institutes' need for additional collateral in case of a negative shock to house prices.

The mortgage credit institutes themselves are currently undertaking measures to ensure the provision of additional collateral. For instance, in 2012, Nykredit is introducing a so-called two-layer system where the LTV ratio of instalment-free and/or adjustable-rate loans is limited to 60%. The remaining 20% has to be covered by fixed rate loans with instalments. Such measures will effectively limit the share of instalment-free and adjustable-rate loans. Furthermore, a working group, consisting of relevant trade associations, Danmarks Nationalbank, the Danish Financial Supervisory Authority and the Ministry of Business and Growth, has been set up to examine the consequences of the requirements for additional collateral.

3.2.3. Risks to economic stability

While the consequences of the household debt on the financial stability of the Danish economy have been limited so far, the existence and subsequent bursting of the housing bubble and the simultaneous rise in debt do seem to have taken their toll on the economy in terms of economic stability and, thus, its ability to get back on track after the crisis, especially as households and firms are engaged in deleveraging.

Historically, consumer confidence is closely linked to house price increases. Hence, the surge in house prices between 2003 and 2007 went hand in hand with an improvement in consumer confidence. Consequently, the rise in house prices beyond structural levels was closely linked to the subsequent overheating of the Danish economy, with GDP growth driven to a large extent by private consumption. Shortly after the growth in house prices started to decelerate

towards the end of 2005, the consumer confidence indicator drifted downwards and became negative as house prices started to decline (Graph 34).

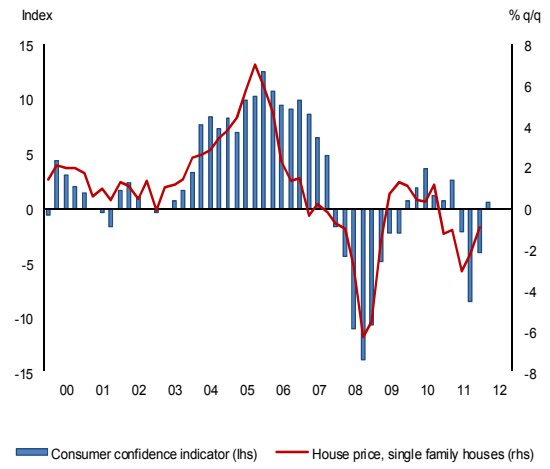
The escalation of the economic and financial crises and the subsequent recovery have been characterised by a surge in the private sector's financial saving rate to a historically high level reflecting strong consolidation efforts among household and non-financial corporations as well as in the financial sector (Graph 35). As a result of their consolidation efforts, households managed, for the first time since the beginning of the 1990s, to reduce their debt ratio by 3 pps., from the historical high of 314% of disposable income in 2009 to 311% of disposable income in 2010 and 2011 (Graph 36). In the beginning of 2011, households' nominal debt burden was also reduced for the first time since the 1990s (Graph 37). This development, however, was followed by moderate increases in nominal debt in the remaining quarters of 2011.

As shown earlier, in spite of the house price corrections in recent years, the net asset position of households remains comfortable and high in a historical perspective. However, although households' net wealth to a large extent determines their consumption possibilities, real estate and pension wealth are highly illiquid assets, which can only be realised at a high cost. Thus, households' current propensity to save and to reduce their liabilities probably reflects a means of protecting themselves against future interest rate hikes, also as a larger share of mortgages are adjustable-rate loans.

As the savings of the private sector are larger than the general government deficit, the current account surplus has become very large contributing to the build-up of Denmark's net foreign asset position, and leading to a rise in interest revenues and other returns from abroad. The consolidation efforts in the private sector are thus positive for the economy in the sense that they raise the future potential for consumption and investment. However, at the current juncture, the mirror image of these consolidation efforts is that investment and private consumption are contained, thereby muting the recovery of the economy.

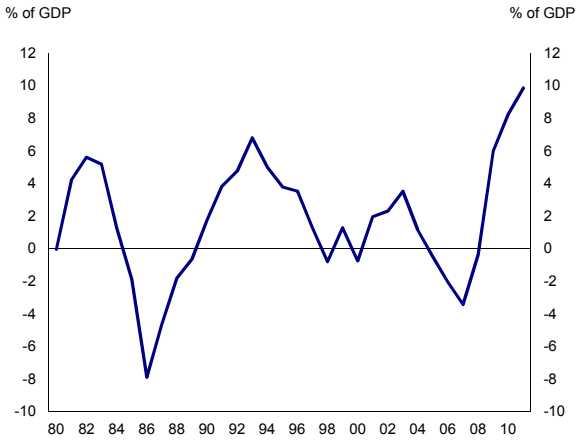
Due to the poor performance of private consumption after the outbreak of the crisis, Denmark is thus still considerably behind in terms of catching up to pre-crisis GDP levels, for instance compared to another Nordic country like Finland (Graph 38). At the same time, Denmark experienced a much higher growth in household debt prior to the crisis than Finland. The slow catching-up of the Danish economy should of course be seen in the light of the already-overheated state of the economy prior to the onset of the economic and financial crises which warranted a certain adjustment. Nevertheless, such large swings in private consumption can lead to lower utility among consumers to the extent they prefer a more smooth path of private consumption.

Graph 34: Consumer confidence and house prices



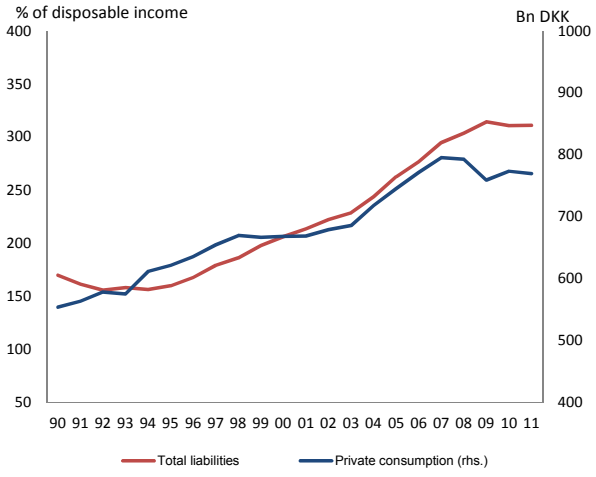
Source: Statistics Denmark

Graph 35: Private financial saving rate (difference between income and expenditures on consumption and investment)



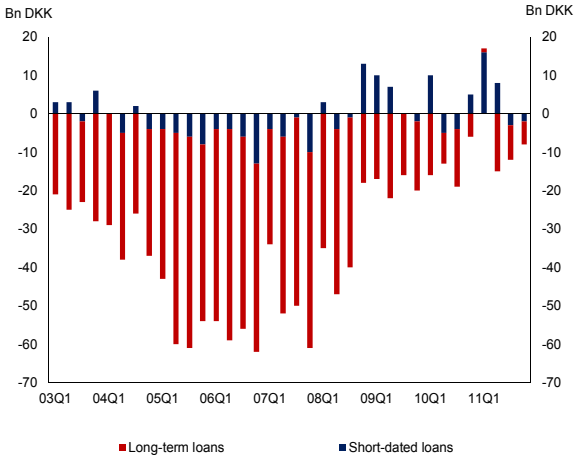
Source: Statistics Denmark

Graph 36: Household liabilities and private consumption



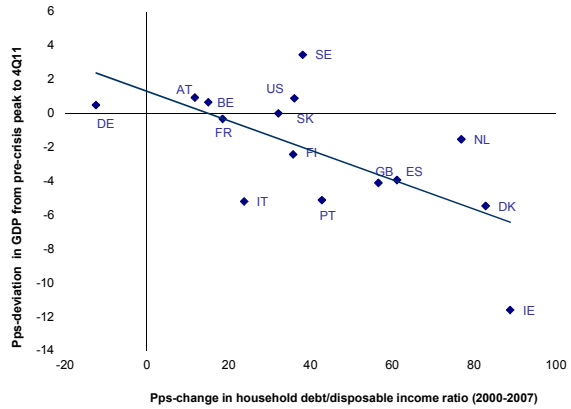
Source: Statistics Denmark

Graph 37: Household net lending



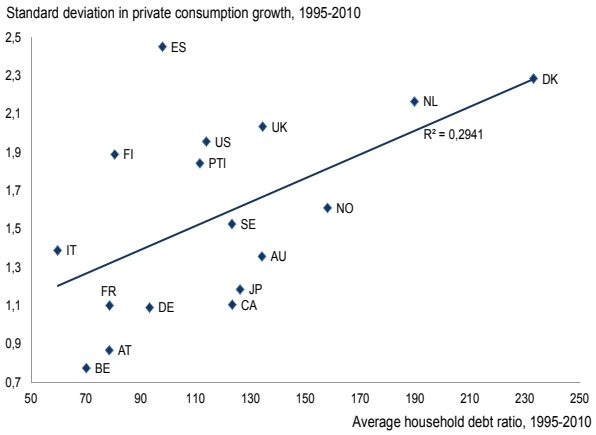
Source: Danmarks Nationalbank

Graph 38: Economic recovery and change in household debt level prior to the crisis



Source: Commission services

Graph 39: Household debt ratio and volatility in private consumption



Source: Danmarks Nationalbank

Over the period 1995-2010, Denmark recorded some of the largest swings in private consumption among a range of countries. According to Isaksen et al. (2011), this is linked to the high gross debt level of households (Graph 39). They find that even when structural differences, general economic fluctuations and fluctuations in net assets are controlled for, higher household gross debt contributes to greater volatility in private consumption. This is probably because the effect of different shocks to the economy is larger the higher the debt level of the individual household and the larger the number of households with high debt. For instance, interest hikes reduce disposable income, especially for households with short-term debt, and cause the values of bonds and houses to drop thereby reducing wealth for households holding assets leading to lower private consumption.

Good opportunities to take up debt, however, also pave the way for profitable investment contributing to growth. Finding a threshold for the household debt level of an individual country, which balances the positive effects of debt uptake and the negative effects in terms of higher private consumption volatility, while also taking the composition of net assets into account, is a difficult task. Nevertheless, the development of the gross debt of Danish households, together with house price movements prior to the crisis, led to a gross debt level which does not seem to be sustainable following the correction in house prices, since households are deleveraging.

Because of the close inter-linkage between house prices and debt, the increased debt level reflects an increase in house prices above the structural level (which has now been corrected), rather than a more permanent increase in consumption or investment possibilities. The result has been larger fluctuations in private consumption in Denmark, compared to countries in similar situations, which have been harmful to the economy and its ability to get back on track following the crisis. In order to avoid such harmful fluctuations in the future, it seems necessary to prevent pro-cyclicalities in the housing market.

4. POLICY CHALLENGES

The preceding analysis has shown that Denmark is experiencing macroeconomic imbalances, which are not excessive but need to be addressed. In particular, certain macroeconomic developments, notably underlying the external competitiveness and the potential risks related to household indebtedness, deserve attention so as to reduce the risk of adverse effects on the functioning of the economy.

The problem of competitiveness and weak performance in exports of goods seem to be linked to a rise in relative unit labour costs as a result of relatively high nominal wage growth and a poor productivity growth performance. The weak performance of productivity growth since the mid-1990s has been under investigation by various institutions in Denmark and was a central focus for the previous government's Globalisation Council and Growth Forum appointed in 2005 and 2009, respectively. The present government has appointed a Productivity Commission to get to the heart of the problem and come up with proposals for productivity-promoting measures.

So far, studies suggest that the productivity problem may be linked to the educational system as well as a weak degree of competition in some sectors. In 2011, a competition package was adopted, targeting mainly the construction sector, the retail sector, and health and public sector services but measures in some sectors have still not been implemented and the issue of increasing public procurement in municipalities and regions, as recommended to Denmark last year by the Council, will be negotiated with regional and local governments in June. In this context, a recent committee report concluded that Danish competition law is in need of reinforcement and that sanctions for infringements are currently too low to serve as a deterrent. While the 2012 national reform programme mentions that the government will put forward a proposal to increase competition, no firm commitment are made to, for instance, increase the level of deterrence in line with the abovementioned recommendations. **In conclusion, further steps could be taken to improve the degree of competition in Denmark.**

Despite a high level of spending on education, the quality of Danish school education is only average in some areas, the drop-out rates from vocational institutions are relatively high and students finish their studies late. To respond to the challenges in this field, the government has announced a number of new measures for both compulsory and secondary education and has taken initiatives with the aim of increasing the number of apprenticeships and thereby hopefully reducing the number of drop-outs. However, until specific measures are implemented, the challenge of improving the educational system remains.

Addressing the challenges in the educational system would also contribute to preventing excessive wage growth in the context of future skills needs and possible labour shortages. Although a comprehensive reform of the voluntary early retirement pension scheme was adopted in parliament last year, further steps to increase long-term labour supply are needed. Indeed, enhancing educational quality could have a positive effect in this respect. Furthermore, reforming the disability pension and subsidised employment ('flex-job') schemes would be relevant means to address this challenge.

Financial risks related to the build-up of household debt and the housing bubble have to some extent been addressed by the government and financial institutions. The Ministry of Business and Growth is currently undertaking a study on the distribution of the type of assets and liabilities across households, which will shed light on the potential vulnerability of

households in the event of different shocks to the economy. Danmarks Nationalbank is carrying out a similar study with regard to financial stability. The results of these studies should clarify if any vulnerabilities exist and pinpoint the precise action needed to address them. To counter risks related to the large amount of adjustable-rate loans that used to be refinanced in December, mortgage institutions have taken measures to spread auctions refinancing adjustable-rate loans over the year so as to reduce the refinancing risk and a working group has also been set up to address the issue.

Furthermore, in order to meet the EU's new capital requirement directive, the mortgage credit institutes are currently undertaking measures to ensure the provision of additional collateral which will effectively limit the share of instalment-free and adjustable-rate loans. For instance, in 2012, Nykredit (Denmark's largest mortgage institute) is introducing a so-called two-layer system where the loan-to-value ratio of instalment-free and/or adjustable-rate loans is limited to 60%. The remaining 20% has to be covered by fixed-rate loans with instalments. Furthermore, a working group, consisting of relevant trade associations, Danmarks Nationalbank, the Danish Financial Supervisory Authority and the Ministry of Business and Growth, has been set up to examine the consequences of the requirements for additional collateral.

Economic risks related to the build-up of debt levels in conjunction with the housing boom have been addressed to some extent since changes to interest deductibility rules over the coming years are expected to attenuate the incentives to hold debt thereby gradually bringing down the household debt level, at least compared to what it would be otherwise. Indeed, as pension saving schemes are expected to continue to be expanded over the coming years, this should create an upward pressure on the gross debt level without necessarily affecting the net financial assets of households. Such a build-up of gross household debt should be sustainable and not harmful to the economy.

However, to reduce the risk of an unsustainable build-up of household debt by preventing future house price bubbles in the medium-term, further measures in the areas of taxation could be useful. First, the pro-cyclical effects of and the debt bias in housing taxation could be corrected by realigning the property value tax to actual market values or, as a second best, by phasing-out further the tax deductibility of interest payments. This would not only restore neutrality among investment alternatives, but would also free up fiscal space to reduce taxes that are more harmful to growth, such as labour income taxes and corporate taxes. In addition, removing the ceiling on the annual increase of the municipal land value tax could prevent future procyclical effects of lagged tax increases.

The timing and composition of any measures in the housing sector have to be considered so as to avoid unnecessary pro-cyclical effects by depressing house prices and household consumption in a context of slow growth and a fragile housing market. Given the current decline in house prices, a gradual approach could be warranted.

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