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Macroeconomic Imbalances - Denmark 2014

Results of in-depth reviews under Regulation (EU) No 1176/2011 on the prevention and correction of macroeconomic imbalances

The macroeconomic challenges in **Denmark** *no longer constitute substantial macroeconomic risks and are no longer identified as imbalances in the sense of the MIP*. The adjustment on the housing market and the implications of a high private sector debt for the real economy and the stability of the financial sector seem contained. However, these developments, as well as drivers of external competitiveness deserve continued monitoring.

More specifically, macro-financial risks stemming from elevated private debt appear limited, even in the face of tail risks such as combined adverse interest rate shocks and unfavourable labour market developments. The high level of household debt is matched by high household assets, mirroring large savings in pension funds and real estate. Households have so far been financially capable of handling the house price adjustment since 2007, as the number of arrears has stayed at a very low level. Moreover, various stress test and studies have concluded that the households would be resilient in the event of adverse shocks. The financial sector appears stable with the remaining challenges tackled through strengthened regulatory and supervisory measures. Regarding competitiveness, Denmark has been losing export market shares; this is linked to high wage growth and weak productivity growth. However, the mismatch between productivity and wages seems to be a cyclical phenomenon. In view of the high current account surpluses, the trend decline in exports market shares does not point to short-term risks. As regards public finances, Denmark is expected to have sustainably corrected its excessive deficit in 2013.

Excerpt of country-specific findings on Denmark, COM(2014) 150 final, 5.3.2014

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EXECUTIVE SUMMARY AND CONCLUSIONS

In April 2013, the Commission concluded that Denmark was experiencing macroeconomic imbalances, in particular as regards developments related to household debt, the housing market and, to some extent, external competitiveness. In the Alert Mechanism Report (AMR) published on 13 November 2013, the Commission found it useful, also taking into account the identification of an imbalance in April, to examine further the persistence of imbalances or their unwinding. To this end this In-Depth Review (IDR) provides an economic analysis of the Danish economy in line with the scope of the surveillance under the Macroeconomic Imbalance Procedure (MIP). The main observations and findings from this analysis are:

- **In order to safeguard the high relative welfare level in Denmark, boosting productivity growth is a key economic challenge.** The analysis in section 3 indicates that the loss of export market shares can be linked to the deterioration of cost competitiveness in the decade leading up to the economic crisis, namely due to excessive wage growth during the overheating of the economy in 2006-2007. Wage growth has moderated considerably in recent years, gradually alleviating the competitiveness problem. However, the weak productivity growth over the last two decades remains a concern.

- **Risks stemming from high household indebtedness seem contained and the mortgage system seems solid.** Private sector debt, in particular that of households, is a structural feature of the Danish economy. It is related to the country's mortgage system, which ensures low risks for clients and banks when financing mortgage loans, through a precise match between the mortgage loan raised by a homeowner and the bonds issued by the mortgage bank for funding the particular loan. The Danish housing market seems to be recovering from the crisis and households have been financially capable of handling the house price adjustment from 2007 to 2012. When the housing bubble burst, households' net wealth dropped. However, their net asset position has been comfortable, mirroring large assets in pension funds and real estate, and the increase of mortgage arrears has been marginal. With assets largely exceeding liabilities, the net asset position of Danish households remains at levels comparable to those of other EU countries. In the tail risk event of simultaneous materialisation of low economic growth, rising unemployment, rising interest rates and falling house prices, the stability of Denmark's financial sector could be at stake. On the other hand, the condition of the Danish mortgage sector seems solid, and the introduction of stricter requirements for deferred-amortisation and variable-interest loans have reduced future risks. In addition, the deleveraging process in the Danish household sector is taking place in an orderly manner. Nevertheless, reducing the households' gross debt level is a slow process, which is expected to continue for a number of years.

- **The financial sector in Denmark remains stable. There are some challenges, but they are being tackled through strengthened regulatory and supervisory measures taken by the Danish authorities.** Notably, tools for enhanced monitoring of individual banks have been introduced, such as the 'Supervisory Diamond', the creation of a bank resolution regime (based on the Financial Stability Company), and the establishment of new institutions responsible for macro-prudential oversight.

The IDR also discusses the policy challenges stemming from these imbalances and what could be possible avenues for the way forward. A number of elements can be considered:

- **Concerning the challenge linked to improving external competitiveness, different aspects can be discussed.** The most important challenge remains the necessity to boost productivity growth. The Danish government has taken measures in this regard, including the establishment of a so-called 'Productivity Commission', who has a two-year assignment of analysing the productivity development in the Danish economy and giving recommendations on improving productivity growth. It has already released a number of studies since its establishment at the beginning of 2012 and is expected to deliver its final report, with recommendations, in the course of the first quarter of 2014. According to the commission's preliminary findings, weak productivity growth is to a large part due to slow productivity growth in the private services sector. This development is partly explained by inadequate competition due to excessive regulation and a lack of internationalisation. The work by the 'Productivity Commission' is expected to be followed-up by the Danish authorities this spring, with new measures aimed at enhancing productivity growth. This work is highly encouraged, as it is crucial in order to secure the relative high welfare level of Denmark in the future.

- **Concerning the challenge linked to high household debt and the implications for the real economy, a number of measures can be considered.** In order to ensure the stability of the housing sector it is crucial to focus on avoiding pro-cyclical taxation, securing the stability of the mortgage market, reducing debt bias in taxation and ensuring a sound sustainability-oriented fiscal policy. The key to improving the stability and robustness of the mortgage market is to reduce the incentives for households to take up debt, in particular to take loans that are linked to higher risk. This is already taking place, and measures adopted by the Danish authorities and the mortgage credit institutions (MCIs) go in the right direction. A next step could be to introduce regulatory rules for the MCIs on stricter and more sector-specific supervision (a new 'Supervisory Diamond'), and on the maturity extension of short-term covered bonds used to finance the mortgage loans.

- **Concerning the challenge related to the stability of the financial system in the medium term, the Danish financial sector has been strengthened and rules have been tightened.** This is a direct consequence of the measures taken by the Danish authorities to identify, monitor and limit the risks to financial stability. More attention is now paid to systemic financial risk, and the authorities have defined stricter requirements for SIFIs. The liquidity of the banks has been further fortified through Bank Rescue Packages 4 and 5. However, a few non-systemic banks still need to adjust their balance sheets and reduce their customer funding gaps in order to comply with the upcoming liquidity regulations. Continuous monitoring of the internal-rating-based (IRB) models used by the systemically important banks, leverage ratio and maintenance of effective financial supervision ('Supervisory Diamond'), may further reduce the vulnerabilities of the financial sector.

1. INTRODUCTION

On 13 November 2013, the European Commission presented its second 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 emerging. According to Article 5 of Regulation No. 1176/2011, these country-specific 'in-depth reviews' (IDR) 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 in the sense of the legislation and what type of follow-up it will recommend to the Council.

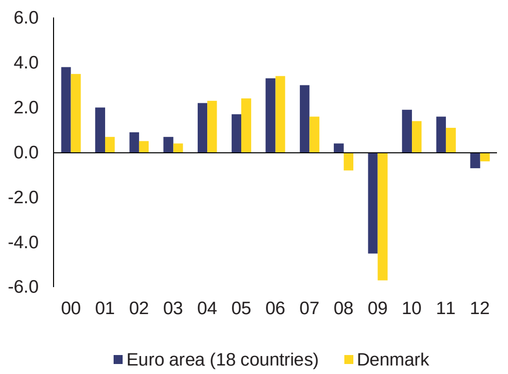
This is the third IDR for Denmark. The previous IDR was published on 10 April 2013 on the basis of which the Commission concluded that Denmark was experiencing macroeconomic imbalances involving the high level of household debt and the continuing adjustment in the housing market. Overall, in the AMR the Commission found it useful, also taking into account the identification of imbalances in April 2013, to examine further the persistence of imbalances or their unwinding. To this end this IDR takes a broad view of the Danish economy in line with the scope of the surveillance under the Macroeconomic Imbalance Procedure (MIP).

Against this background, this IDR is organised as follows: Section 2 presents an overview of the general macroeconomic developments that have contributed to the build-up of imbalances in Denmark. Section 3 looks more in detail into these imbalances and risks. Section 4 discusses policy options to overcome them.

2. MACROECONOMIC DEVELOPMENTS

The financial and economic crisis in 2008-2009 put to an end a period of almost continuous growth between 1995 and 2007. In 2006-2007 the Danish economy showed clear signs of overheating, caused by accelerating construction, investment and private consumption on the back of a high credit growth and a steep increase in house prices. A correction of the housing market started in 2007 and triggered a slow-down of the economy already before the outbreak of the financial and economic crisis. In general, the Danish business cycle has been parallel with the euro area cycle, however, GDP-growth has been lower than in the euro area most years since 2000 (Graph 2.1).

Graph 2.1: **GDP growth, Denmark vs. Euro Area**



Source: Eurostat

The recovery of the Danish economy after the economic downturn has been anaemic. In the third quarter of 2013, GDP was broadly at the same level as in the third quarter of 2010 and still 5% below the pre-crisis peak from the second quarter of 2008. In 2013, GDP is estimated to have grown by a meagre 0.3%, but GDP growth has picked up in the course of the year. Economic growth is expected to gain traction in 2014 and 2015, with real GDP growing by 1.7% and 1.8%, respectively. ([1])

The Danish economy has benefitted from 'safe-haven' capital inflows. During the sovereign debt crisis in Europe international investors have sought refuge in highly-rated mortgage bonds and government securities from Denmark. This has resulted in very low interest rates and supported private demand and the Danish housing market. However, the ongoing deleveraging process in the household and corporate sectors following the significant asset losses in the beginning of the crisis and relatively weak export performance have held back the recovery of the Danish economy.

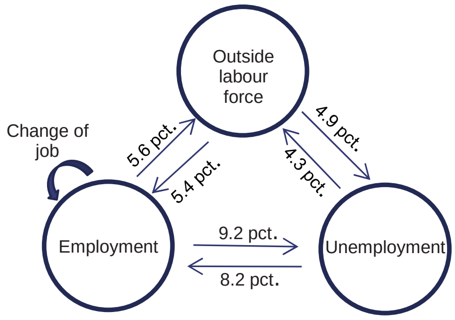
The labour market has been relatively resilient despite the weak economic recovery since 2009. Part of the explanation for this might be that the slow recovery to some extent reflects a weak performance in sectors with high value added but with relatively low employment intensity, such as North Sea oil extraction and the financial sector. Looking beyond these two sectors, the recovery in the remaining part of the private sector – which stands for 95% of private employment – has been much more pronounced.([2])

The Danish labour market is flexible, also with respect to wage formation. Wages, which in Denmark are negotiated between the social partners, responded quickly to the outbreak of the economic crisis. The reduction in wage growth contributed to a relatively limited increase in unemployment and has supported competitiveness. The Danish labour market has been dynamic, even during the height of the crisis. Job churning is very high with close to 20% of employed changing job every year.([3]) There are correspondingly high in- and outflows of unemployment (Graph 2.2) and thus a relative low level of long-term unemployment (1.7% of the active population in the third quarter of 2013), which limits the social consequences of the crisis and the risk of hysteresis. In the third quarter of 2013, the employment rate stood at 73%, which is the fifth highest level in the EU.([4])

([1]) European Commission, (2014)

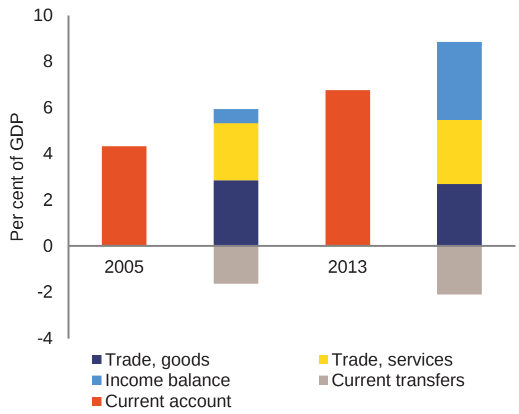
([2]) European Commission, (2013).
([3]) Danish Ministry of Finance, (2014)
([4]) The employment rate was higher in Sweden, the Netherlands, Germany and Austria.

Graph 2.2: **Flows in the Danish labour market, per cent of labour force, 2012**



Source: Ministry of Finance

Graph 2.3: **Composition of the current account**



Source: Statistics Denmark

The current account balance has been positive for more than two decades. The Danish economy is currently characterised by a peculiar combination of high export market losses, weak competitiveness and high current account surpluses. Compared to the situation in 2005, the current account surplus has increased from 4.3% to close to 7% of GDP in 2013.([5]) While the trade balance is broadly at the same level in the two years, the increased current account surplus reflects a higher surplus on the income balance (Graph 2.3).

The high current account surplus is thus not a sign of competitive strength, but rather sluggish domestic demand, high savings in the corporate sector and higher yields on investments abroad than in Denmark. At the same time, the net international investment position (NIIP) has been positive since 2009 and reached 38% of GDP in 2012.

Business investment has been weak since the outbreak of the financial crisis and savings in the corporate sector are historically high. Despite government initiatives, namely the ‘investment window’ tax incentives, which ended at the turn of the year, investment activity has been low and the savings rate in non-financial companies has been above 10% since 2010 (the average savings rate in 1990 to 2009 was 2.6%). The corporate savings rate is expected to stay at a high level in coming years. On the one hand investments are supported by the general improvement of the outlook as the recovery gains traction, as well as the effects of bulk-up demand from a long period of low investments. On the other hand, the capacity utilisation is still below the historical average (at 80.5% in the industry sector in the first quarter of 2014) reducing the need for new investments.

House prices in Denmark seem to have bottomed out, after the correction from 2007 to 2012. The developments in the housing market do not point to instabilities. The current house price level seems to be in line with long-term trends and the risk of further adjustments of house prices appears to be limited. While the household debt level is high, the net asset position of the sector remains comfortable, with assets largely exceeding liabilities.

Credit standards have been tight, but stable in 2013. According to the latest bank lending survey from Danish National Bank([6]), the credit policy in

([5]) At the time of writing, national accounts data were only available up to the third quarter of 2013.

([6]) Danish National Bank (2014).

banks and mortgage institutions was broadly stable in 2013 both towards business and private customers. The stabilisation follows a tightening of credit standards during the height of the financial crisis in 2008-2009 and again during the sovereign debt crisis in 2011-2012.

Table 2.1:
Key economic, financial and social indicators - Denmark

							Forecast		
	2007	2008	2009	2010	2011	2012	2013	2014	2015
Real GDP (yoy)	1.6	-0.8	-5.7	1.4	1.1	-0.4	0.3	1.7	1.8
Private consumption (yoy)	3.0	-0.3	-3.6	1.3	-0.7	-0.1	0.4	1.4	1.7
Public consumption (yoy)	1.3	1.9	2.1	0.2	-1.4	0.4	0.3	1.5	0.6
Gross fixed capital formation (yoy)	0.4	-4.2	-15.9	-2.1	3.3	0.8	1.7	2.7	3.1
Exports of goods and services (yoy)	2.8	3.3	-9.5	3.0	7.0	0.4	0.9	3.1	4.0
Imports of goods and services (yoy)	4.3	3.3	-12.3	3.5	5.9	0.9	2.5	3.0	3.8
Output gap	3.8	1.6	-4.7	-4.0	-3.6	-4.6	-4.9	-4.2	-3.6
Contribution to GDP growth:									
Domestic demand (yoy)	1.9	-0.6	-4.5	0.4	-0.2	0.2	0.6	1.6	1.5
Inventories (yoy)	0.3	-0.3	-2.3	1.1	0.4	-0.3	0.4	-0.2	0.0
Net exports (yoy)	-0.7	0.1	1.1	-0.1	0.9	-0.2	-0.7	0.3	0.3
Current account balance BoP (% of GDP)	1.4	2.9	3.4	5.8	5.9	6.0	.	.	.
Trade balance (% of GDP), BoP	2.5	3.2	4.1	5.8	5.4	5.2	.	.	.
Terms of trade of goods and services (yoy)	-0.4	1.5	-0.5	3.7	-2.4	0.0	3.4	-0.2	-0.3
Net international investment position (% of GDP)	-5.8	-5.1	4.4	14.0	28.7	37.8	.	.	.
Net external debt (% of GDP)	34.8	30.8	28.2	22.7	14.8	11.9	.	.	.
Gross external debt (% of GDP)	170.4	176.3	188.9	190.6	183.3	181.8	.	.	.
Export performance vs. advanced countries (5 years % change)	.	.	.	.	.	.	.	.	.
Export market share, goods and services (%)	.	.	.	.	.	.	.	.	.
Savings rate of households (Net saving as percentage of net disposable income)	-4.0	-3.7	0.1	0.0	0.7	-0.7	.	.	.
Private credit flow (consolidated, % of GDP)	18.8	18.1	-2.1	6.7	-2.3	5.9	.	.	.
Private sector debt, consolidated (% of GDP)	224.1	237.3	250.9	242.9	237.1	238.6	.	.	.
Deflated house price index (yoy)	1.3	-7.7	-13.3	0.1	-4.3	-5.4	.	.	.
Residential investment (% of GDP)	6.3	5.3	4.2	3.8	4.6	4.2	.	.	.
Total Financial Sector Liabilities, non-consolidated (yoy)	10.5	6.4	0.8	9.1	4.8	5.0	.	.	.
Tier 1 ratio (1)	.	10.4	14.4	15.1	15.5	17.3	.	.	.
Overall solvency ratio (2)	.	13.1	16.1	16.2	16.9	18.7	.	.	.
Gross total doubtful and non-performing loans (% of total debt instruments and total loans and advances) (2)	.	1.6	2.8	3.1	3.0	3.9	.	.	.
Employment, persons (yoy)	1.9	1.5	-3.1	-2.2	-0.3	-0.3	0.1	0.5	0.5
Unemployment rate	3.8	3.5	6.0	7.5	7.6	7.5	7.0	6.9	6.7
Long-term unemployment rate (% of active population)	0.6	0.5	0.6	1.5	1.8	2.1	.	.	.
Youth unemployment rate (% of active population in the same age group)	7.3	8.1	11.8	13.9	14.3	14.0	12.9	.	.
Activity rate (15-64 years)	80.1	80.7	80.2	79.4	79.3	78.6	.	.	.
Young people not in employment, education or training (% of total population)	4.3	4.3	5.4	6.0	6.3	6.6	.	.	.
People at-risk poverty or social exclusion (% total population)	16.8	16.3	17.6	18.3	18.9	19.0	.	.	.
At-risk poverty rate (% of total population)	11.7	11.8	13.1	13.3	13.0	13.1	.	.	.
Severe material deprivation rate (% of total population)	3.3	2.0	2.3	2.7	2.6	2.8	.	.	.
Persons living in households with very low work intensity (% of total population)	10.1	8.5	8.8	10.6	11.7	11.3	.	.	.
GDP deflator (yoy)	2.3	4.2	0.7	4.3	0.7	2.3	2.4	1.3	1.5
Harmonised index of consumer prices (yoy)	1.7	3.6	1.1	2.2	2.7	2.4	0.5	1.5	1.7
Nominal compensation per employee (yoy)	3.6	3.5	3.3	3.5	1.3	1.4	1.2	1.8	2.0
Labour Productivity (real, person employed, yoy)	-1.1	-2.4	-2.4	3.9	1.3	0.0	.	.	.
Unit labour costs (whole economy, yoy)	4.8	6.1	5.8	-0.5	0.0	1.5	1.0	0.7	0.6
Real unit labour costs (yoy)	2.4	1.8	5.1	-4.5	-0.7	-0.8	-1.4	-0.6	-0.9
REER (ULC, yoy)	4.0	4.4	4.0	-4.0	-1.6	-3.3	2.0	1.2	-0.7
REER (HICP, yoy)	0.7	2.0	2.6	-4.4	-0.7	-2.8	0.9	1.7	-0.1
General government balance (% of GDP)	4.8	3.2	-2.7	-2.5	-1.9	-3.8	-0.3	-1.3	-2.7
Structural budget balance (% of GDP)	2.5	2.2	0.2	-0.1	0.2	0.6	1.1	-0.3	-0.5
General government gross debt (% of GDP)	27.1	33.4	40.7	42.8	46.4	45.4	42.4	41.6	43.1

(1) domestic banking groups and stand-alone banks.
(2) domestic banking groups and stand alone banks, foreign (EU and non-EU) controlled subsidiaries and foreign (EU and non-EU) controlled branches.
Source: Eurostat, ECB, AMECO.

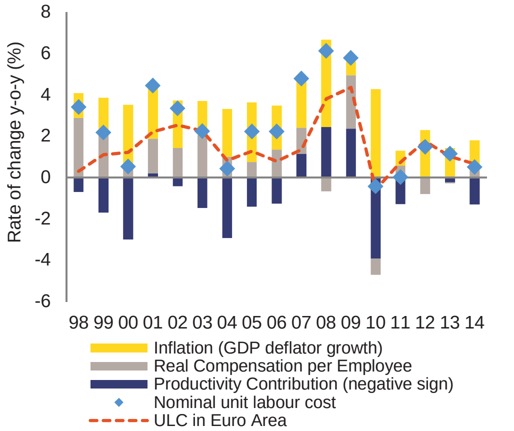
3. IMBALANCES AND RISKS

In April 2013, the European Commission concluded that Denmark was experiencing macroeconomic imbalances, especially regarding external competitiveness and the household debt coupled with vulnerabilities in the housing market. In the Alert Mechanism Report (AMR) published in November 2013, the Commission assessed that those imbalances are implying potential risks for macroeconomic stability. For this reason, this chapter focuses on monitoring and assessing the persistence of imbalances.

3.1. COMPETITIVENESS AND EXPORTS PERFORMANCE

Since the mid-1990s, growth in unit labour cost (ULC) has almost continuously exceeded that of the euro area (Graph 3.1). This reflects both slow productivity growth and relatively high wage growth. The development was compounded by the overheating of the economy in the years preceding the financial crisis. In this period, tight labour market conditions led to high wage growth while productivity growth was weak and even negative in some years, leading to very high increase in ULC.

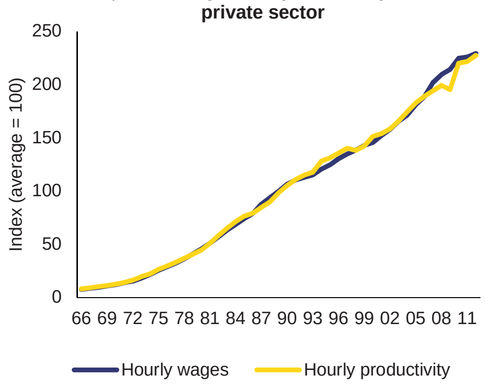
Graph 3.1: **Decomposition of Rate of Change of ULC vs. Euro Area**



Source: Commission services

In the aftermath of the crisis, productivity growth has improved and wage growth has moderated. This has enabled Denmark to recover some of the loss of competitiveness since the mid-1990s, reducing the mismatch between wage and productivity developments that arose during the overheating of the economy (Graph 3.2). The annual growth in nominal unit labour costs (ULC) has slowed from close to 6% both in 2008 and 2009, to 1.6% in 2012.

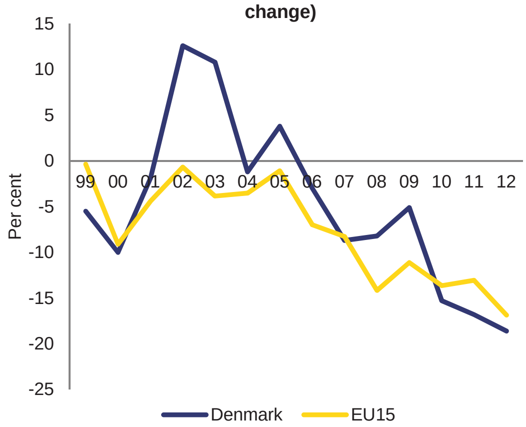
Graph 3.2: **Wages and productivity in the private sector**



Source: Statistics Denmark

As most other industrialised economies, Denmark has been losing export market shares (EMS). This synchronised pattern across industrialised countries seems to be related to the integration of emerging markets into the global economy.(7) Since the turn of the century, Denmark's loss of export market shares has broadly followed the average development of other EU15 countries(8), (Graph 3.3) Since 2010, the five year cumulated losses have been slightly bigger in Denmark, than the EU15-average.

Graph 3.3: **Loss of EMS (5 year cumulative change)**



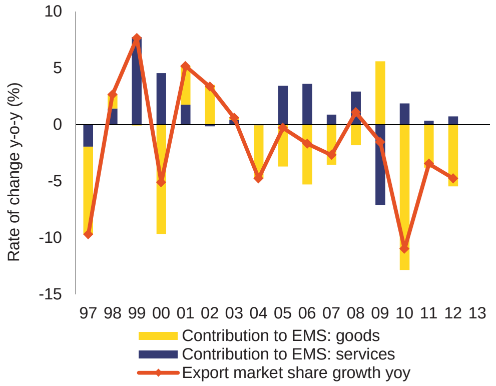
Source: Eurostat

(7) OECD (2014)

(8) The member states that has joined since 2004 has been filtered out here, as these countries have been in a process of catching up.

Denmark's loss in export market shares seems to be linked to unfavourable cost competitiveness trends. As pointed out in the previous two IDRs, Denmark's weak performance in exports of goods during the last decade appears to be linked to the rise in ULC. The loss of EMS is larger in volumes than in values, reflecting the continuous terms-of-trade improvement over the last years. The loss of EMS appears to be related to the development within goods exports, while service exports, which to a large extent consist of shipping, have performed better (Graph 3.4).

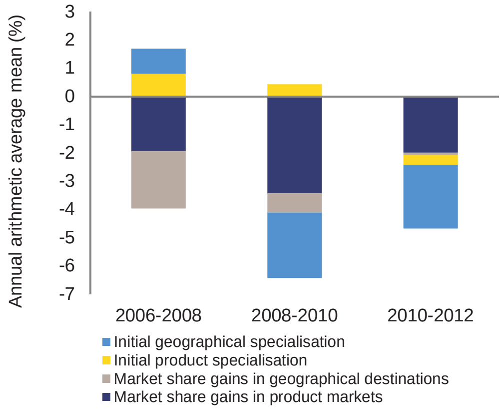
Graph 3.4: **Export market share decomposition**



Source: Commission services

Exclusively focusing on relative ULC trends would overstate Denmark's competitiveness problem. Denmark has experienced a continuously positive terms-of-trade development since the start of this century. According to a recent survey from the Danish Ministry of Finance, this development reflects the specific specialisation pattern of Danish companies which seem to have specialised in areas with below average global productivity growth, and where unit labour costs and prices therefore are growing faster than the average of other countries' exports.([9]) The study seeks to identify whether the profitability in the Danish manufacturing sector is squeezed by higher unit labour costs compared with competitors abroad or if higher unit labour costs reflect a specialisation in branches with low productivity growth and high cost growth. By correcting for the beneficial terms-of-trade developments experienced by Danish manufactures and measuring the relative wage share, the study confirms that competitiveness has deteriorated, but to a smaller extent than if measured by relative ULC.

Graph 3.5: **Geographical and sectoral composition of change of export shares**



Source: Commission services

Export market share losses have increased in 2010-13 despite more favourable ULC developments. This might indicate that other factors are at play. However, a shift-share analysis([10]) confirms that the loss of market shares since 2006 is predominantly due to weak export performance rather than initial specialisation (Graph 3.5). However, since 2008, losses due to unfavourable initial geographical orientation have also played a role, while product composition has had a broadly neutral effect.([11]) The loss of market shares due to initial geographical specialisation may reflect the Danish orientation towards the European market (Graph 3.6). In value terms, close to 60% of Danish goods export, and 45% of service exports are directed towards other EU countries. Therefore, Denmark could benefit from a greater representation in high-growth emerging markets.

In 1995-2012, Denmark lost export market shares in manufacturing exports in four out of its five top export markets (Germany, Sweden, Norway and in the UK), while it managed to

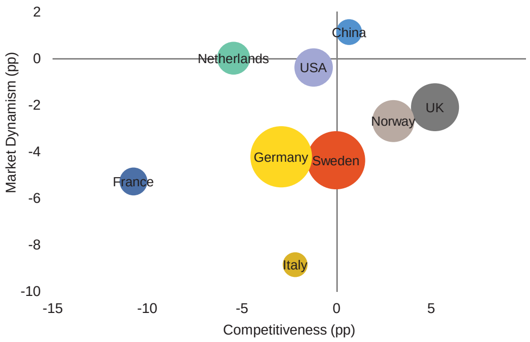
([9]) Danish Ministry of Finance (2014).

([10]) The decomposition enables a differentiation between market share developments linked to the country's initial geographical or product specialisation, as opposed to real losses in market shares, i.e. losses due to inferior performance on the specific markets where the country is already represented.

([11]) See also Beltramello et al. (2012) who find that the Denmark's losses of export market shares in 1995-2007 are mainly due to export performance rather than geographical or sectoral specialisation.

increase its market shares in USA (Graph 3.7). The improved performance in the USA is mainly due to strong growth in exports of chemicals (including pharmaceuticals) and machines and transportation. Generally, Denmark has increased its manufacturing market shares the most in markets that traditionally have been less important destinations for Danish exports, like Canada and Mexico ([12]).

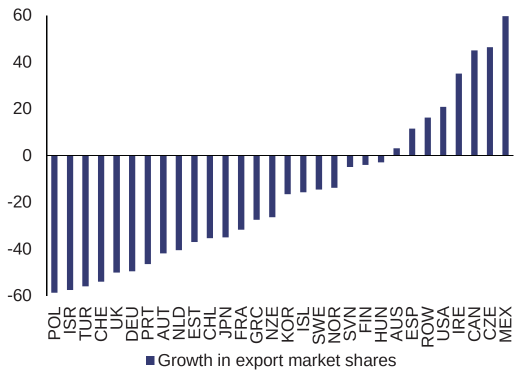
Graph 3.6: **Dynamism and competitiveness of top-10 country exports destinations (2010-2012)**



Source: Commission services

Note: The bubbles' size indicates the weight of the export destination in total export.Market dynamism stands for the difference between the growth rates of imports in the selected country and growth of global imports. Competitiveness stands for the difference between the growth rates of the selected country's exports to Denmark and total imports in Denmark.

Graph 3.7: **Growth in Danish EMS from 1995-2012 (manufacturing, volumes)**



Source: Danish Ministry of Economic Affairs and the Interior

Denmark's deteriorating performance in its export markets warrants a further adjustment in unit labour costs. While wages are set in negotiations between social partners, there seems to be scope to introduce new measures to increase productivity growth**.** As in many other European countries, productivity growth in Denmark slowed down in the mid-1990s. And the slowdown in Denmark has been even more pronounced than in countries such as the Netherlands, Sweden and Germany. According to the OECD([13]), labour productivity grew by an average of 0.94% in Denmark over the period 1995-2011, while the corresponding number was 1.98% in Sweden and 1.23% in the Netherlands. While especially Sweden has had a large contribution to labour productivity growth from total factor productivity growth, this component has had a negative impact in Denmark.

Productivity growth has been especially weak in those parts of the private services sector that are oriented towards the domestic market and hence not exposed to foreign competition. According to the Productivity Commission([14]), this weak development in the domestically oriented private services sector may be due to factors such as relatively weak business dynamics([15]) and lack of competition, for example due to excessive red tape and inadequate internationalisation. Weak competition in the domestically oriented private services sector may have negative effects on the competitiveness of the export oriented sectors, as weak competition will lead to higher prices on domestic services used as input in the production.

3.2. HOUSEHOLD SECTOR INDEBTEDNESS

3.2.1. Household debt developments

Private sector debt – in particular that of households – remains a structural feature of the Danish economy. The 2013 IDR has identified

([12]) Ministry of Economic Affairs and the Interior (2013) . The study is based on OECD data and does therefore not include data for BRIC countries. These are, however, included in a "rest of the world" category, in which Denmark also has been able to increase its market shares.

([13]) OECD (2013)

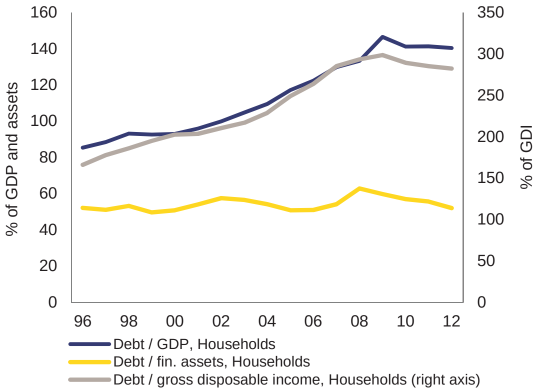
([14]) The Productivity Commission, which was appointed by the government, is expected to finish its work in the first quarter of 2014 after spending 2 years analysing the Danish productivity development and giving recommendations on how to strengthen productivity growth.

([15]) The term 'business dynamics' describes to which degree highly productive companies are able to take over sales and employment at the expense of companies with lower productivity. Well-functioning business dynamics ensures that employment is moved towards more productive parts of the economy.

some vulnerability associated with this feature; however the conclusion was that the risks are contained. Private sector gross debt as a share of GDP peaked in 2009 and has declined somewhat thereafter. In particular, household sector gross debt remains high at above 140% of GDP in consolidated terms or around 320% of disposable income([16]). However, since 2009 a gradual consolidation has taken place, with household debt decreasing from 146.5% of GDP in 2009 to 140.4% in 2012 (Graph 3.8).

The high household gross debt level in Denmark should be viewed in light of country-specific circumstances. A special feature of the Danish economy is the country's mortgage credit system (Box 3.1), which has proven resilient in the past. The mortgage system is based on the balance principle, which ensures a match between the mortgage loan raised by a homeowner and the bonds issued by the mortgage bank for funding the particular loan. Therefore, the financial risk borne by mortgage banks is kept at a minimum. During the recent financial crisis, interest rates on covered bonds have been decreasing, as the covered bond market has benefitted from 'safe haven' capital inflows. In the latest refinancing auctions in November 2013, the interest rates reached a historically low level.

Graph 3.8: **Household debt**



Source: Commission services

The success of the Danish covered mortgage bonds has led to cheap financing and high demand for this type of mortgages. This has increased the possibility for Danish consumers to smoothen consumption over their lifespan. The portfolio of mortgage loan types was widened in 1996 with the introduction of adjustable-interest rate mortgage loans and again in 2003 with the introduction of deferred-amortisation loans. Cheap financing, as the interest expenditures of Danish households have continuously decreased in the period 1995-2013, is likely to have contributed to an increase in the gross household debt level as households have been capable of taking on more debt. Deferred amortisation loans may also have led to a structural increase in the debt-to-value ratio of housing assets, as it has made it easier for households to choose not to save in housing assets.([17])

The introduction of new mortgage loan types seems to have contributed to the overheating of the housing market. According to the 'Committee on the causes of the financial crisis in Denmark',([18]) the house price bubble in Denmark was driven by a combination of a cyclical upswing, low interest rates, low unemployment, too optimistic expectations regarding future developments in the housing market, the introduction of new loan types (deferred amortisation and adjustable-interest rate mortgage loans) and the nominal freeze on property value taxes. The availability of cheap financing thus seems to have been one of several factors contributing to the unsustainable high growth in house prices up to 2006.

High household debt has to be set against the sector's favourable asset position. Apart from high assets in housing, Denmark has a well-developed pension system with both public and private savings-based pensions. The private savings-based pensions are rooted in labour market agreements. They have been built up since the 1990s and now include a large majority of employees in Denmark. The system secures high income compensation after retirement and reduces thus the households' need to pay down their

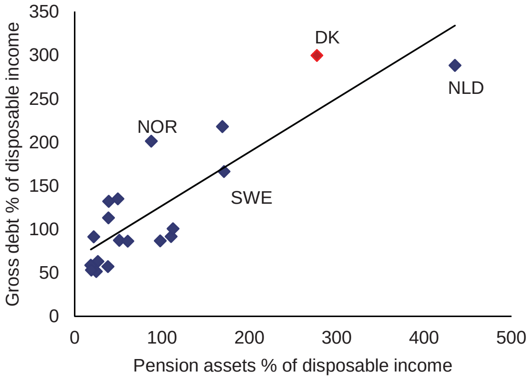
([16]) The debt level measured as a percentage of disposable income does not take into account that in Denmark expenditures – such as education and the health care system – is to a larger extent financed via taxes compared to many other countries. The difference with other countries in the gross debt level is therefore smaller when measured against GDP rather than disposable income.

([17]) Danish Ministry of Finance (2014).

([18]) An independent committee appointed by the Danish government to analyse causes and consequences of the financial crisis. See Rangvid et al. (2013).

mortgage as a way of saving. A cross-country comparison suggests a correlation between household debt and pension assets, where especially the Netherlands and Denmark stand out as countries with highly developed pension systems coupled with high household gross debt (Graph 3.9).

Graph 3.9: **Correlation between households' pension assets and gross debt across countries, 2012**



Source: Ministry of Finance

With assets largely exceeding liabilities, the net asset position of Danish households remains positive at levels comparable to other EU countries. However, low liquidity of the private pension savings, which represent a large part of the assets, makes Danish households' balance sheets more vulnerable to shocks affecting households' debt servicing capacity. Against this background, and as already mentioned in the 2013 IDR, avoiding pro-cyclical taxation, securing the stability of the mortgage market, reducing the debt bias in taxation and, more generally, a sound sustainability-oriented fiscal policy is of particular importance.

3.2.2. Tax incentives

The high level of household debt is partly connected to the structure of the tax system. Pension schemes seem to have become an important savings vehicle in Denmark due to the low taxes on pension returns. For young people, or for people with positive net capital income, there might therefore be a tax-incentive to increase mortgage debt and to offset this debt with pension savings.([19])

The property value tax freeze applied in combination with mortgage interest tax deductibility has arguably contributed to the housing bubble. The steep increase in housing prices up to 2007 was not corresponded by increased taxes and according to a model estimation by the Danish National Bank this contributed to the inflation of house prices during the boom years.([20]) Land value taxes are, on the other hand, allowed to increase in line with new valuations, but with a maximum increase of 7% per year. As a consequence, land value taxes did not fully reflect price increases during the years of overheating, while they have continued increasing (in order to catch up with previous price increases) after the bust of the housing bubble. This is clearly disadvantageous from a cyclical point of view, as property taxes should ideally contribute to reduce fluctuations in the housing market. Both nominal tax freeze and capping of assessed property values reduces the counter cyclical properties of housing taxation both during upswings and downturns. From a distributional([21]) and a tax-efficiency point of view, it would be preferable to give priority to a reduction of more distortionary taxes, while maintaining the relative level of harder-to-escape indirect or property taxes.

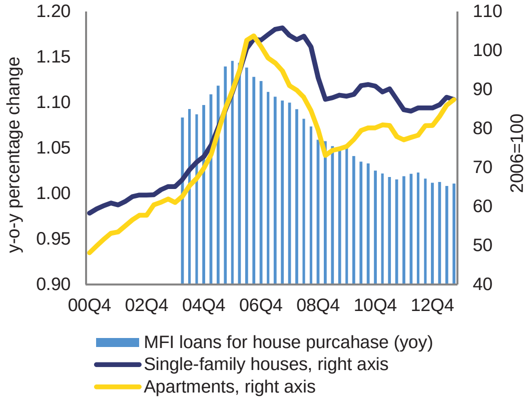
3.2.3. House price dynamics in Denmark

The Danish housing market seems to have recovered from the crisis. House prices increased continuously between 1997 and 2006, with a rapid acceleration between 2003 and 2006. A prolonged correction of prices started in 2007, interrupted in 2009-10. Real house prices fell by 4.3% in 2011 and by 5.4% in 2012. Prices for both houses and apartments now seem to have stabilised and prices have started increasing in certain segments of the market. This is especially the case for prices of apartments – three quarters of which are sold in the Copenhagen area – while price developments have

([19]) Danish Ministry of Finance (2014).
([20]) The National Bank estimates suggest that the increase in real house prices of 71% from 1999 to 2007 would have been 5 pps. smaller without the property value tax freeze. Excluding also the introduction of new loan types, the increase in real house prices would only have amounted to around 15%. See Danish National Bank (2011).
([21]) See for example McCluskey et al. (2012).

been more sluggish for single-family homes, (Graph 3.10).

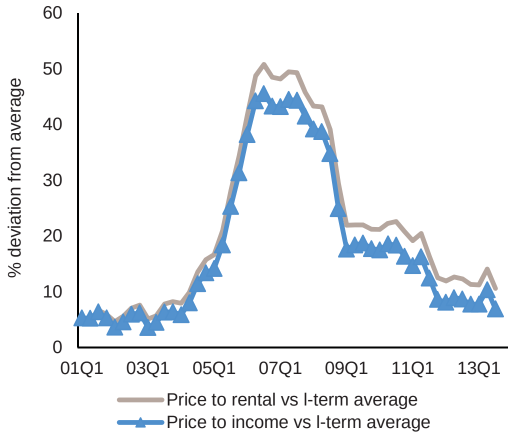
Graph 3.10: **Evolution of house price index and MFI loans for house purchase**



Source: Statistics Denmark, Commission services

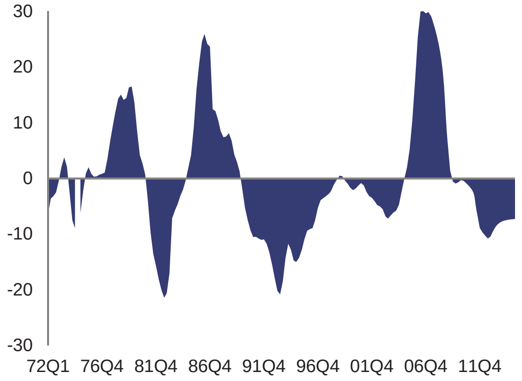
House prices appear to be in line with long-term trends. Comparing current house prices to longer-term trends indicates that the adjustment of Danish house prices has come to an end and that the risk for further adjustments is limited. In the third quarter of 2013, Danish house prices were only slightly overvalued, both with regards to price-to-rent ratio and price-to-income ratio (Graph 3.11). An analysis of house price cycles, which compares house prices to their filtered trend, lends support to this assessment, suggesting that the house price bust ended in 2012 (Graph 3.12).

Graph 3.11: **Price to rent and price to income**



Source: Commission services

Graph 3.12: **Relative house price gap**



Source: Commission services

Note: The overvaluation or relative price gap is calculated as the difference between actual prices and their filtered trend.

3.2.4. Mortgage debt and risks to financial stability

Elevated household debt levels pose some macroeconomic risks. A high gross debt, combined with widespread use of variable interest rate loans, is counter-cyclical in normal times, but implies a risk in case of negative interest rate shocks. In addition, households' balance sheets are vulnerable to house price decreases and the ability to service debt could suffer if the labour market deteriorates. Due to Denmark's fixed exchange rate regime there is an additional risk of simultaneous interest rate and unemployment increases.

Denmark's mortgage system is characterised by a high share of variable-rate and deferred amortisation loans. The share of variable-rate (or "adjustable rate") loans by mortgage banks remains high at 72% of total lending in November 2013.([22]) The variable rate loans are particularly widespread among families in the top 10% and the bottom 10% of the income distribution. The share of deferred-amortisation loans, i.e. loans with interest-only payments in the initial phase of the contract, is also high, amounting to 53% of total mortgage lending in November 2013.([23])

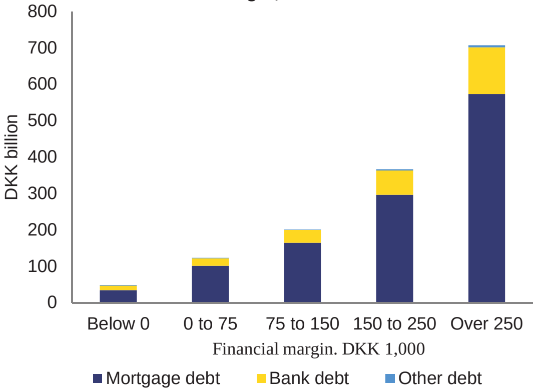
The high level of household debt and the extensive use of adjustable rate mortgages have increased the vulnerability of the financial

([22]) Danish National Bank
([23]) Danish National Bank

system. However, the mortgage debt in Denmark is primarily concentrated amongst higher-income households, with one third of the total mortgage debt in the hands of the 10% of households with the highest incomes. Only around 1% of total mortgage debt is owed by the 10% of households with the lowest incomes. A study commissioned by the Ministry of Business and Growth concludes that in the event of an interest rate shock of around 500 basis points only 13% of households would have to spend more than half of their disposable income to service their debt.([24]) Furthermore, only 9% of households would be unable to amortise their debt over the loan's term to maturity (20 years) under the worst case scenario that households could not change the type of loan or simply sell their property.([25]) A study by the Danish National Bank comes to similar conclusions, in particular that households with the highest debt usually hold the largest amounts of assets (Graph 3.13). Such households tend to have a broad 'financial margin', defined as the amount of money at a household's disposal after paying accommodation expenses and other general costs of living.([26]) Hence, according to these two studies([27]), a majority of the households in Denmark is financially robust to withstand a significant interest rate shock or a prolonged period of unemployment, by reducing consumption or increasing savings.

([24]) Ministry of Business and Growth (2013)
([25]) OECD (2013)
([26]) Danish National Bank (2012b)
([27]) Both studies are based on very detailed micro-data containing information regarding income, taxes, debt and assets on (anonymous) individual level for the period 2002-2010 for close to 100% of the Danish population.

Graph 3.13: **Breakdown of debt vs. financial margin, families with mortgage debt, tight budget, 2010**



Source: Danish National Banks
Note: Other debt includes all debt other than debt to mortgage banks and banks

In general, deferred-amortisation loans add to financial sector vulnerability especially in periods with decreasing house prices. In such a situation a borrower may not have the option of refinancing with a new deferred-amortisation loan and will possibly have to amortise parts of the debt within a short period. This may lead to a steep increase in debt payments. The combination of decreasing house prices and deferred-amortisation loans is also a challenge for mortgage banks, as their need to pledge for top-up collateral increases. In an attempt to mitigate this risk, since May 2013 variable-rate loans and/or deferred-amortisation loans may only be granted to borrowers who would be able to service a fixed-rate loan with amortisation.([28])

Deferred-amortisation loans were introduced in Denmark in 2003 and are usually granted with a 10 year interest-only period. Hence, the number of households required to repay the principal amount of these types of loans will start increasing in 2014, and in the coming years the interest-only period will expire for a significant number of households every year (Graph 3.14). The estimation of the distribution on loan-to-value (LTV) ratios is based on the assumption that house prices are unchanged at end-2011 level up to 2021. A large amount of the households have a loan-to-value (LTV) ratio below 80% – even in the event of unchanged house prices in the coming years – and could choose to refinance to a new deferred-

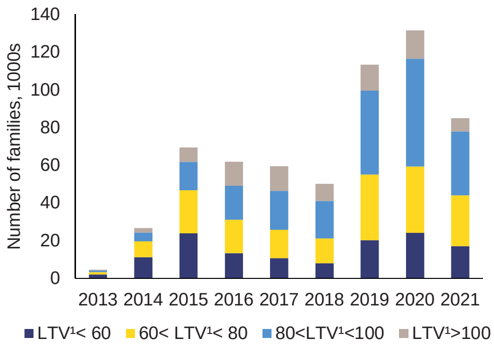
([28]) See Executive Order on good practice for financial enterprises, investment associations, etc. of 20 December 2012, which came into force on 1 May 2013.

amortisation loan, extending the interest only period by another 10 years.

Borrowers who enter the amortisation period with a LTV ratio of over 80% will generally have three options. They can convert their loan into a standard 30-year loan with amortisation, a solution which probably will be promoted given that the conditions for granting new deferred-amortisation loans have been tightened. Another option is raising a new deferred-amortisation loan up to the 80% LTV limit and then finance the remainder with a bank loan. Finally, the mortgage banks can offer households under particular stress a new deferred amortisation loan as a loss-preventing measure. With the last option, the mortgage bank must book a loan impairment charge.

The expiration of the deferred-amortisation period for mortgage loans is expected to be manageable. According to a study by the Danish National Bank([29]), approximately 240,000 families had in 2011 a combination of deferred-amortisation loans and a LTV ratio over 80%. Were all these households to begin amortising their loans, the number of families with a negative financial margin would increase from 5,800 to 18,800. If the households converted their loans to new deferred-amortisation mortgage loans within the 80% LTV limit and finance their remaining debt with bank loans, the number would only increase to 8,300 families, liable for 1.5% of households' total mortgage debt and 1% of households' total bank debt.

Graph 3.14: **Number of families with expiring deferred amortisation loans**

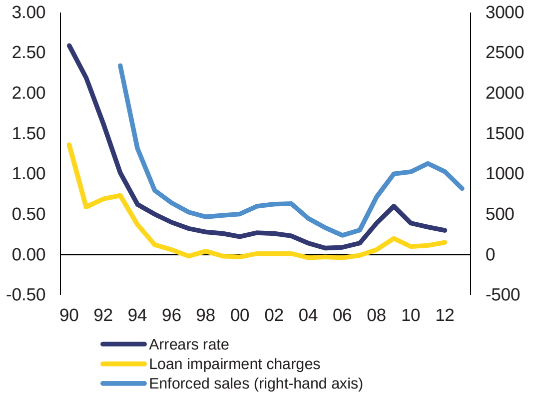


Source: OECD, Economic Survey of Denmark 2013

([29]) Danish National Bank, (2012a)

Mortgage arrears are very low in Denmark. The number of Danish households falling behind on their mortgage payments has remained at a low level since the mid-1990s (in March 2013 the arrears rate stood at 0.3%).([30]) This has been partly due to favourable macroeconomic developments, such as relatively low unemployment, low interest rates and to the introduction of deferred-amortisation loans in 2003. Even during the financial crisis in 2007-8 mortgage arrears increased only marginally (Graph 3.15), and according to a study by the Danish National Bank, a severe interest-rate shock to the Danish economy would cause only a slight increase in the number of families in mortgage arrears, because households tend to give priority to mortgage debt over other kinds of debt in order to avoid enforced sales.([31])

Graph 3.15: **Arrears, enforced sales and mortgage banks' total loan impairment charges**



Source: Danish National Bank

Risks stemming from high household indebtedness seem contained and the system is generally stable. In the unlikely event of a simultaneous materialisation of risks, such as low economic growth, rising unemployment, rising interest rates and falling house prices, the stability of Denmark's financial sector could be at risk. However, the condition of the Danish mortgage sector seems solid, and stricter requirements for deferred-amortisation and variable-interest loans reduce future risks. Meanwhile, the authorities

([30]) Danish National Bank
([31]) Danish National Bank (2013b)

have implemented measures to improve micro- and macro-prudential supervision that go into the right direction, but their completeness and effectiveness have yet to be proven.

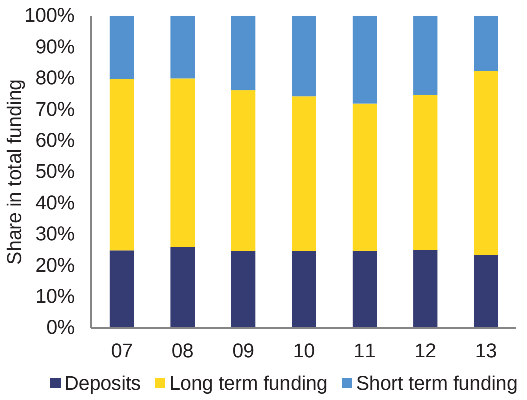
3.3. FINANCIAL SECTOR

Denmark's banking sector is large and sophisticated, with seven systematically important financial institutions (SIFIs) and a large number of small banks. The total assets of Danish banks amount to over four times of the nominal GDP and the two largest banks (*Danske Bank* and *Nordea*) account for some two thirds of total assets in the sector. The banking system is still recovering from the economic crisis, which negatively affected its profitability. However, this was mainly due to losses in activities related to the commercial property sector, rather than arrears in the household sector. The authorities have taken a set of measures addressing the various problems that contributed to the crisis, including the implementation of five support packages for the financial and corporate sector (Box 3.2).

In 2013, the loan-to-deposit ratio has marginally decreased, while the capital adequacy of the Danish banks improved. Both the Tier 1 capital ratio (17%) and the leverage ratio (5.6%) are above the Basel III minimum requirements. In the group of the seven largest banks, the Core Equity Tier 1 ratio (CET1) ranged from 8.5% for *DLR Kredit* to 16.6% for *Nykredit and BRFkredit*.([32]) However, the high adequacy ratios might in some cases result from the denominator effect, as the CET1 capital is divided by low risk weighted assets (RWA) resulting from low risk weights used by banks in their internal-rating-based models.

The Danish banking sector is mainly relying on long term market funding. The banks' market funding consists mostly of deposits from credit institutions and long-term debt issuance, overall accounting for approximately 60% of the total funding([33]) (Graph 3.16). The short-term debt issuance accounts for a small part of the market funding, around 23%. The small share of deposits in banks' funding is a structural feature of the country's banking sector. Households hold very large savings in pension funds, which again invest part of their portfolio in debt instruments issued by the banks, including mortgage covered bonds. In January 2013 the pension funds together with life insurance and mutual funds accounted for around 37% of the investors in the mortgage covered bonds.([34])

Graph 3.16: **Funding structure**



Source: Fitch Ratings
Note: Total funding excludes equity and derivatives. The aggregate of the banks and mortgage banks included in the figure represents approximately 70% of total industry assets.

Smaller banks still need to build more robust capital and liquidity buffers. In some smaller banks capital buffers were even decreasing due to high loan impairment charges. Yet any problems arising among the small banks could be solved via business adjustments or within the current framework for mergers and resolution without significantly influencing financial stability in Denmark.([35]) Indeed, in the aftermath of the crisis, the number of small and medium-sized banks went down from 137 in January 2007 to 78 in mid-2013([36]). The activities in a large number of the banks that went down were concentrated in commercial property.

Return on equity has recovered somewhat for large systemic banks but it is still negative on average for small banks. In 2012, the systemic banks registered impairment charges of 0.7% of total household loans and 1.1% of corporate loans,

([32]) Danish National Bank
([33]) These numbers refer to an aggregate of lager banks which represents approximately 70% of total industry assets.
([34]) Danske Bank (2013)
([35]) Danish National Bank (2013a)
([36]) OECD (2013)

while smaller banks registered 1.1% and 3.7% impairment charges for households and corporate loans, respectively. The level of non-performing loans (NPLs) stood at 3.7% in 2011 and increased in 2012 to a level of 6.0%. In the third quarter of 2013 the NPLSs decreased to 4.8%. ([37]) NPLs are mainly concentrated in agricultural and small business loans, and in small banks. Combined with low interest income due to low interest rate environment, the high impairment charges contributed to low profitability of Danish banks. In 2012, the average return on equity stood at 3.6% (2.9% in 2011) for the six largest banks while it was -10.1% (-8.8% in 2011) for the group of middle-sized banks and slightly below zero for the smallest institutions. On average, in the third quarter of 2013 the return on equity stood at 1.3%. ([38])

The Danish framework for financial supervision has been strengthened over the last years. Notably, tools for enhanced monitoring of individual banks have been introduced, such as the 'Supervisory Diamond' ([39]), the creation of a bank resolution regime (based on the Financial Stability Company)([40]) and the establishment of new institutions responsible for macro-prudential oversight([41]) of the financial sector and the economy.

The new regulatory requirements stipulated in CRD IV may pose a challenge to the Danish banking sector. Two areas can be mentioned in this respect: risk weighting of mortgage bonds, and possible limits for mortgage bonds([42]) in the portfolio of liquid assets. Discussions on a uniform definition of high quality liquid assets will continue at the EU level until June 2014.

Danish authorities have established specific bodies to deal with the systemic risk. The Committee on Systemically Important Financial Institutions (SIFIs) was established in January 2012 with focus on SIFIs: criteria for defining such institutions, specific requirements and resolution tools. In this respect a sixth Bank Rescue Package was designed in October 2013, including stricter requirements for SIFIs([43]) in particular, such as extra capital requirements, ranging from 1% to 3%.

A Systemic Risk Council was established in February 2013 by the Ministry of Business and Growth. The Council will monitor and identify systemic risk in the financial sector and it will issue warnings and recommendations on macro-prudential policies to the FSA and the government (in case of legislation issues).

The Danish authorities have taken various measures to identify, monitor and limit the risks to financial stability. More attention is being paid to the systemic financial risk and the authorities have defined stricter requirements for SIFIs. The liquidity of the banks has been further strengthened through the Bank Rescue Packages 4 and 5. However, few non-systemic banks still need to adjust their balance sheets and reduce their customer funding gap in order to comply with the upcoming liquidity regulations. In conclusion, the financial sector in Denmark remains stable. There are challenges, as discussed above, but they are tackled through strengthened regulatory and supervisory measures taken by the Danish authorities over the last years.

3.4. RISKS TO ECONOMIC STABILITY

The macroeconomic environment in Denmark is stable and risks to the economic outlook are broadly balanced. Continued improvements in indicators suggest that the recovery will continue

([37]) IMF

([38]) IMF

([39]) The FSA, which is responsible for the supervision of credit institutions, introduced the 'Supervisory Diamond' in June 2010. The supervisory tool came into effect in 2013 and is monitoring closely banks' performance against five benchmarks regarding large exposures, lending growth, exposure towards commercial property, funding ratio and liquidity.

([40]) During the crisis, the Danish authorities resolved one third of banks out of the total pre-crisis number of institutions, but their aggregated assets corresponded to only 6% of the sector.

([41]) The Systemic Risk Council and the interagency committee to develop prudential arrangements for systemically-important financial institutions (SIFIs)

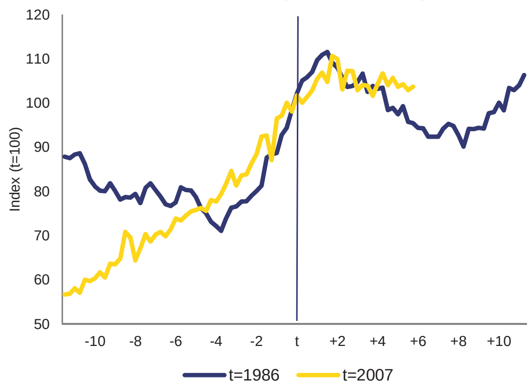
([42]) In particular, under Basel, covered bonds are not accepted as level 1 liquid assets.

([43]) At the moment seven credit institutions are classified as SIFIs: Danske Bank, Nykredit, Nordea Bank Danmark, Jyske Bank, BRFkredit, Sydbank and DLR Kredit. However, the final identification is going to be made by the end of June 2014.

in the coming years. The European Economic Forecast, Winter 2014 foresees an annual GDP growth of 1¾% in 2014 and 2015.

The deleveraging process is proceeding in an orderly way. As already discussed in previous IDRs, the deleveraging process is happening in an orderly way and the households' balance sheets remain stable, both in terms of size and composition. Past experience from the late 1980s to the early 1990s show that deleveraging of household balance sheets is a lengthy process and is expected to continue in the years to come (Graph 3.17). In addition, Denmark belongs to the EU Member States with relatively low demand and credit supply delivering pressures([44]), (Graph 3.18). In addition, the bulk of deleveraging is being achieved through real growth and inflation, rather than negative net credit flows which would have been more harmful for economic activity.

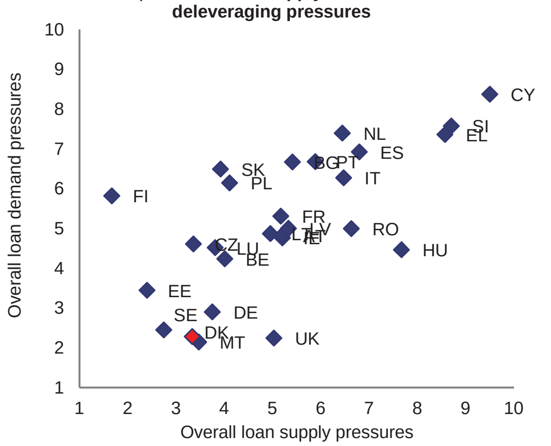
Graph 3.17: **Development of household debt over a business cycle, (t=1986 and 2007)**



Source: Danish National Bank and Statistics Denmark

([44]) For a detailed presentation of the indicators included in the credit supply and demand leveraging pressures, see the 2013 IDR.

Graph 3.18: **Credit supply and demand deleveraging pressures**



Source: Commission services

In conclusion, the main risks to the economic stability are related to the situation on the housing market and they seem contained. The high level of household debt is matched by high household assets. Households have been so far financially capable of handling the house price adjustment since 2007. Their net asset position has been comfortable, mirroring large savings in pension funds and real estate and the increase of mortgage arrears has been marginal. Macro-financial risks stemming from high household debt seem contained, even in case of negative 'tail events' such as combined adverse interest rate shocks and labour market developments.

Box 3.1: **The Danish mortgage system**

The mortgage-credit system in Denmark has a 200 year history and plays a key role in the country's credit intermediation. The principle governing the model is that the mortgage loans are being funded by the issuance of covered bonds (mortgage bonds). The Committee on Systemically Important Financial Institutions (SIFIs)[1] in Denmark has identified the market for Danish covered bonds as systemically important. The Danish mortgage market is the largest in the world as share of GDP.

The mortgage credit system

Until 1 July 2007, two main features described the mortgage market: only specialist mortgage banks, ie. the mortgage credit institutions (MCIs) were allowed to issue covered bonds (mortgage bonds – ROs) and the balance principle was strictly followed by all MCIs. The balance principle implies that the contracted mortgage loan is matched exactly by the bond bought by the investor. This "pass-through system" exempts MCIs from interest rate volatility, and currency exchange rate or liquidity risk.

Since 1 July 2007, the Danish covered bond system has been compliant with the covered bond criteria in the EU Capital Requirement Directive (CRD) and also the Danish universal banks can have access to covered bond funding of eligible assets. In effect, different bond types were introduced on the market besides the ROs, namely 'Special covered bonds' (SDOs) and 'Special covered mortgage bonds' (SDROs). The issuance of covered bonds increased from 16% to 70% of outstanding mortgage bonds following the new legislation. Furthermore, the legislation requires that loan-to-value ratio (LTV) limits be observed throughout the term of the loan, unless the MCI pledges other collateral. Additionally, two balance principles serve as guidelines for covered bonds issuers: the 'specific balance principle', which is very close to the old balance principle, and the 'general balance principle', which is mostly aligned with what is seen in euro area and offers flexibility with regards to joint funding and the inclusion of a broader range of collateral in the covered pool.

The Danish covered bond legislative framework is one of the strongest in the world, with high systemic support where the market-risk is limited due to the balance principles implemented by banks. Key elements of the legislation are the balance principles, the existence of capital centres within MCIs (which deal with bonds issued and collateral), eligibility criteria for mortgage loans and collateral (LTV cap of 80% and property valuation requirements), and close supervision by the Danish Financial Stability Authority (FSA). A specific element is the compulsory sale procedure of property in case of a borrower's default, which takes at maximum 6 months. Also MCIs are subject to overcollateralization to ensure a privileged position of the covered bond investors in case of MCIs' insolvency.

Figures and challenges

In November 2013, the volume of outstanding covered bonds was DKK 2,973 billion (EUR 398 billion), which amounts to approximately 161% of GDP. From this amount, 29% is represented by covered bonds with up to 1 year remaining maturity and 41% with between 1 and 5 year remaining maturity. Out of the total amount of covered bonds around 89% were denominated in DKK, and the remaining of 11% were denominated in EUR. The latter were issued on the Luxembourg-based central securities depositary and some are ECB eligible.

Currently, there are 7 MCIs allowed to issue covered bonds and only one universal bank, Danske Bank, is allowed to issue SDOs. The market concentration is very high – the first two banks account for 68% of all Danish DKK covered bonds issued and 50% of all Danish EUR covered bonds issued.

The refinancing auctions take place two to four times per year, as a measure to reduce the refinancing concentration and therefore refinancing risk. The majority of covered bonds investors is represented by financial institutions (34%), followed by life insurance and pension funds (20%), foreign investors (19%), mutual funds and asset managers (17%).

The Danish covered bond market is profiting from a very deep secondary market liquidity, with a high average daily turnover. In the recent years, the turnover of some of the most liquid covered bonds has exceeded the turnover of Danish government bonds, especially for the one-year non-callable covered bonds, due to high issuance activity and refinancing auctions. Standard & Poor's (S&P) is rating these bonds in the best category (number 1) and so far the asset and liability mismatch risk has been rated in the best category. Nonetheless, S&P has recently warned of downgrades if the MCIs will not limit the use of one-year covered bonds used to fund 30-year loans, resulting in maturity mismatches.

In order to tackle this challenge, the Danish government proposed in November that a failed bond refinancing auction or an interest rate shock may trigger an extension of the covered bond by 12 months (with the possibility of one further extension). This extension will be triggered if a bond refinancing auction fails, or if the interest rate that investors demand to refinance the bonds is more than 5 percentage points higher than the coupon on similar bonds issued 11-13 months earlier. Yields would be set at the coupon plus 5 percentage points.

[1] The Committee on Systemically Important Financial Institutions was established by the Danish Minister for Business and Growth on 12 January 2012. The role of the Committee is to clarify criteria on which banks and credit institutions should be designated as Danish SIFIs, the requirements they should satisfy and how the SIFIs in distress should be handled. In March 2014 the Committee published a report in which it recommended additional requirements for the Danish SIFIs.

Box 3.2: The Bank Rescue Packages

The first Bank Rescue Package adopted in October 2008 was a 2-year general government guarantee. It covered all depositors and non-subordinated creditors in Danish banks and depositors in foreign banks' branches in Denmark. ([1]) According to this consolidation package, if a credit institution had not met the solvency requirements, then the deposits and non-subordinated liabilities would have been transferred to the state-owned winding-up company, the Financial Stability Company (FSC), while the equity and subordinated capital would have remained in the distressed bank. The financial sector had to contribute up to DKK 35 billion (2% of GDP) for the guarantee.

In February 2009, a second Bank Rescue Package was adopted, under which credit institutions could obtain government capital injections in the form of Additional Tier 1 capital. As a result, 43 credit institutions received capital injections totalling around DKK 46 billion (3% of GDP). At the same time, the credit institutions could apply for individual government guarantees up to the end 2010 for specific issuance with maturities of up to three years. Hence, credit institutions (CIs) had the opportunity to issue senior debt with government guarantee. This facilitated the transition to market funding and ensured liquidity for CIs in need after the expiry of the general guarantee. 50 CIs issued debt in a total amount of DKK 193 billion with individual government guarantees.

The expiry of the first Bank Rescue Package in September 2010 and an agreement on non-extension/discontinuation of the general guarantee, led to a new consolidation package, the Bank Rescue Package 3 in October 2010. This package provided solutions for winding up distressed banks under the bail-in resolution scheme. It could either be used for the recapitalisation of a bank in case of default and to restore its long-term viability or to convert to equity or reduce the liabilities of a failing bank, which are then transferred to a bridge institution, thus increasing the latter's capital ratio above the minimum required. Denmark was the first country to pass such bail-in legislation. In 2011, *Amagerbanken* and *Fjordbank Mors* were two banks to test this resolution tool. Shareholders and subordinated creditors lost their entire investments. Unguaranteed bondholders and depositors (deposits over EUR 100,000) suffered haircuts of 16% and 14%, respectively.

In August 2011, under the Bank Rescue Package 4, the Danish parliament launched initiatives to foster market-based solutions for distressed banks. This consolidation package was intended to create incentives for sound banks to take over (in part or in full) activities of distressed banks before the latter would fall under the bail-in scheme. One option was for a sound bank to take all parts of a distressed bank, in which case FSC would pay compensation, along with compensation from the Guarantee Fund for Depositors and Investors to cover deposits, and from the government if the distressed bank had previously received an individual government guarantee. Also, FSC could take over all parts of a distressed bank, excluding equity and subordinated debt, and transfer these parts to another sound bank. At the same time banks could opt, before end-2013, for an individual government guarantee related to mergers, with maturity up to three years.

Finally, the fifth Bank Rescue Package was introduced in March 2012, exclusively designed for the agriculture sector. The consolidation package aimed at establishing a financing bank for the agriculture sector which will provide funding for farms and acquire viable agricultural exposures from the FSC. FSC took over FIH Erhvervsbank's property exposure of DKK 17 billion.

([1]) Until September 30, 2010, the guarantee scheme provided an unlimited guarantee, for the amounts that were not covered by the Danish Deposit Guarantee Scheme, for all deposits in the 133 banks joining the scheme that comprise by far the majority of the Danish banking industry. For the small minority of banks which have chosen not to join the scheme, the statutory depositor guarantee of DKK 375,000 (EUR 50,000) per depositor was applied.

4. POLICY CHALLENGES

The imbalances that Denmark is experiencing with respect to competitiveness and household indebtedness are gradually unwinding. The imbalances do not constitute new challenges, and the authorities have already undertaken the relevant policy responses. As a consequence, the country-specific recommendations issued for Denmark in June 2013 did not contain a specific recommendation on the housing market and financial stability. The monitoring and assessment of progress in the implementation of measures to strengthen the stability of the housing market and financial system in the medium term is taking place in the context of the assessment of the National Reform Programme and Convergence Programme under the European Semester.

Competitiveness

In order to safeguard the high relative welfare level in Denmark, boosting the productivity growth is a key economic challenge. The analysis in section 3.1 indicates that the loss of export market shares can be linked to the deterioration of competitiveness in the decade leading up to the economic crisis, namely due to excessive wage growth during the overheating of the economy in 2006-2007. Wage growth has moderated considerably in recent years, gradually alleviating the competitiveness problem. However, the weak productivity growth over the last two decades remains a concern. It should be recalled that relevant policy responses in this area were put forward in the country-specific recommendations (CSRs) issued for Denmark in June 2013, focusing on the removal of obstacles to competition and enhancing the effectiveness in the provision of public services.

As wages are set by the social partners with little political interference, Danish authorities have rightly focused their efforts on strengthening business conditions, improving sectoral regulation and identifying ways to enhance productivity growth. The Danish authorities have set up a number of so-called 'Growth Teams' with the task of identifying growth-enhancing measures in key economic sectors. Those teams, which were mixed business-government task forces, were established in eight different business areas where the Danish authorities had identified special strengths or growth potential, such as the food industry, health- and welfare solutions, energy and climate, and creative industries and design.([45]) The last growth-team delivered their recommendations in late January 2014, with ideas on how to improve the growth conditions within the ICT (Information and Communication Technology) and digital growth sector. The recommendations are followed up by the government with concrete actions. The implementation of these measures is still at an early stage and the effects are therefore yet to be seen.

In December 2012, the Competition act was amended. The reform included a significant increase in the level of fines and made it possible to impose custodial penalties on individuals participating in cartels. The new legislation seems to be in line with the best EU practice in most of the areas. However, there are still some gaps where the Danish legislation is weaker than in comparable countries.([46])

The Danish government has taken steps to increase productivity growth. A 'Productivity Commission', with the two-year assignment of analysing the productivity developments in the Danish economy and giving recommendations on improving productivity growth, will soon finalise its work. The Commission has already released a number of studies since its establishment at the beginning of 2012 and is expected to deliver its final report, with recommendations, in the course of the first quarter of 2014. According to the Commission's preliminary findings, weak productivity growth is to a large part due to slow productivity growth in the private services sector.([47]) This development is partly explained by inadequate competition due to excessive regulation and a lack of internationalisation. The work by the Commission is expected to be followed-up by the Danish authorities this spring, with new measures aimed at enhancing productivity growth. This work is highly encouraged, as it is crucial to secure the relative welfare level of Denmark in future.

([45]) Ministry of Business and Growth (2012)
([46]) Productivity Commission (2013b).
([47]) Productivity Commission (2013a).

Household debt

The deleveraging process in the Danish household sector is taking place in an orderly manner. However – as experienced during previous periods of consolidation – reducing the household gross debt level is a slow process, which is expected to continue for a number of years. Meanwhile, the households' balance sheets have remained stable, both in terms of size and composition, and the gross debt has been matched by sizable assets, bringing the net asset position of Danish households in line with the average in the EU. However, as described in section 3, the large liabilities and the illiquidity of pension assets make the households more vulnerable in the event of adverse tail risks. Steps have already been taken in order to reduce the vulnerability towards adverse risks, but there is a scope for further measures by looking at tax incentives, as well as by taking measures to increase the solidity of the mortgage sector and the financial system in general.

Tax incentives

There seem to be important linkages between the tax system and the build-up of household debt. While the Danish government and the main opposition parties have agreed in 2012 not to review the nominal freeze of the property value tax before 2020, the mortgage tax deductibility has been reduced from 73% in 1986 to 33½% today and will, according to current legislation, be further reduced for households with high interest expenditures to 25½% in 2019. While the land value tax is adjusted to price developments, there is a cap of 7% limiting the annual adjustment of land valuations. The cap on the land value tax and the nominal freeze of the property value tax has effectively decoupled housing taxes from house price developments, thereby removing counter-cyclical properties of housing taxes. Re-establishing the link between house price developments and housing taxes would reduce the future volatility of the housing market and reduce the risks in the financial system. However, timing is key for any policy action in this area, in order to avoid adverse effects on the stability of the housing market.

Mortgage sector

The Danish authorities and the mortgage credit institutes (MCIs) have taken measures to strengthen the stability of the mortgage credit system and to limit the incentives to take up debt. The previous 2013 IDR assessed measures taken by the authorities to limit the use of variable-rate and/or deferred-instalment loans, reduction of tax deductibility for high mortgage interest rate expenditures, as well as prudential measures taken by the mortgage industry on its own initiative. Currently, variable-rate and deferred-instalment loans are only available to customers who are eligible for a 'traditional' loan with a fixed interest rate and instalments. These measures are considered well targeted in the context of authorities' efforts to limit the share of deferred-instalment and adjustable-rate loans in total mortgage lending.

Danish authorities seek stable funding solutions for MCIs. In November 2013, the Danish government proposed a new law under which short-term mortgage covered bonds would be subject to an extension by 12 months if a bond refinancing auction fails or the interest rate that investors demand to refinance the bonds is more than five percentage points higher than the coupon on similar bonds issued 11-13 months earlier. Yields would then be set to the coupon plus five percentage points. The proposed new law has been criticised for exposing the mortgage system to new risks. Notably, if interest rates start increasing, a self-reinforcing mechanism could be triggered. The increased probability that the next refinancing auction will result in an interest rate cap, could make investors start selling bonds in fear of losing money. This may increase the interest rate up to the value where the cap is actually triggered.

MCIs are likely to be subject to new and more sector-specific requirements. In the course of 2014, the Financial Stability Authority (FSA) is expected to design a new 'Supervisory Diamond' for MCIs, similar the one already existing for banks, which will include relevant indicators with thresholds on areas such as the amount of interest-only loans and the amount of loans with frequent refinancing. It is crucial that the FSA strikes the right balance when setting the indicators limits, both for the supervisory tool for the banking sector and for the future tool for the MCIs. It is also important that the supervisory tools are monitored with the flexibility of introducing new indicators if future risks are found in other areas than covered by the original indicators.

Key to improve the stability and robustness of the mortgage system is to reduce the policy incentives for households to take up higher debt. This is currently taking place, and measures introduced by the Danish authorities and the mortgage credit institutes go in the right direction. Next step is to introduce regulatory rules for MCIs on stricter and more sector-specific supervision and on the maturity extension of short-term covered bonds'. In the longer term, and with a view to the improvement of stability in the housing market, a review of housing taxes would be important, in order to strengthen their countercyclical properties and thereby reduce the future volatility of the housing market and the corresponding risks for the financial system.

Banking sector

Since 2008, the Danish authorities have been acting to secure the stability of the banking sector through a series of financial policy initiatives. The government has implemented five support packages for the financial and corporate sector.([48]) Since October 2011, the Danish National Bank has offered 6-months loans to credit institutions in need as additional liquidity assistance.

Regarding the new requirements for SIFIs, there might be further scope for improvement linked to the method of calculating the risk weights. When calculating the regulatory capital requirements, the large banks are using internal rating-based (IRB) models in defining assets risk weights. When using these models there is a risk that the weights will be set too low. The use of IRB models can be made more transparent if banks are also required to disclose what the capital requirement would have been by using the standard method approach. This is in line with the recommendations from the 'Rangvid Committee'.[(49)] This Committee has also recommended setting up an expert committee to assess whether the leverage ratio stipulated in Basel III (3%) should be higher for Danish credit institutions.([50])

In March 2012, the Danish Parliament passed a new amendment regarding an ex ante funding of the Guarantee Fund for Depositors and Investors. According to the legislation, banks have to contribute to the Fund by a fixed annual rate of 2.5‰ of net covered deposits. The payments, however, do not reflect the banks' individual risk (the risk-based payments).

Better regulation and supervision of the banking sector is crucial for financial stability after the crisis. Therefore, the Danish financial sector has been strengthened and the rules have been tightened as a result of measures taken by the Danish authorities. Continuous monitoring of the IRB models used, leverage ratio and maintenance of the 'Supervisory Diamond', including the forthcoming tool for MCIs, may further reduce the vulnerabilities of the financial sector.

([48]) Danish National Bank (2013b)
([49]) Rangvid et al. (2013)
([50]) Ministry of Business and Growth (2013)

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