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Research Denmark

Myths and realities about large household debt

- **The Economist has renewed the focus on Danish households' debt in a recent article entitled 'Something rotten, Denmark's property market is built on rickety foundations'. We have looked into the arguments in the article and we conclude that it is based more on myths than realities with regard to the financial stability in Denmark.**
- **Danish households have one of the largest gross debts in the world, but assets are even higher and as savings are currently positive, debt is declining whereas assets are increasing.**
- **There is no immediate danger of households causing large losses in the financial sector, barring very large interest rate increases.**
- **However, the combination of large debt and declines in house prices have caused households to reduce consumption, triggering large problems in other sectors, in particular retail and construction.**
- **Denmark as a whole has significant net foreign assets, a very large current account surplus and strong public finances.**

Last week's edition of The Economist has renewed focus on Danish household debt in an article entitled 'Something rotten, Denmark's property market is built on rickety foundations'. The article compares the Danish economy with the PIIGS economies and it is more than implied that Danish households are living beyond their means and thus economically are living on borrowed time.

The article is partly focused on Danish households' high debt level compared with other countries and partly on the prevalence of interest-only loans having led to Danes paying down their mortgages at a rate of only 2% a year on average. It is also questioned whether the Central Bank in Denmark will be able to defend the peg against the euro and succour the mortgage market at the same time in the instance of a housing market slump.

It is something of a surprise that The Economist focused on Danish households now, following six years of economic crisis in Denmark which have reduced, not increased the challenges with regard to Danish household debt. That the challenges have been reduced has been recognised by the EU, where Denmark no longer is under surveillance for macro economic imbalances due to large household debt.

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During the past six years, we have also seen that it is actually possible for the Central Bank to defend the peg against the euro and aid the mortgage market at the same time during a housing market slump. The was exactly what happened in 2008 and 2009, a period when Danish house prices dropped significantly and the interest rate spread against the euro zone widened to 175bp; however, confidence in the euro peg was quickly re-established and the interest rate spread could quickly be lowered, house price drops came to a halt and despite a period of quite high interest rates, we saw no significant problems with regard to the financial stability in the household sector. Thus, households were able to cope. The challenges hit the business sector through lower private consumption; thus, it did not leave the Danish economy unscratched but the Danish mortgage system was one of the few mortgage markets globally that were up and running all through the financial crisis. The Central Bank has since then more than doubled the currency reserves and the likelihood of significant pressure on the Danish peg is very limited. The official interest rate is currently below the ECB's.

There is no doubt that household gross debt in Denmark is high but this is not a new phenomenon. As households have increased savings significantly during the crisis, the challenge has already been reduced. Debt as a percent of GDP has declined 10 percentage-points since 2009. As wages are still increasing and will continue to do so, according to the just renewed collective wage agreements (approximately 2% a year), debt can be expected to decline further as a percentage of disposable incomes and GDP.

At the same time, as gross debt is declining, financial assets are increasing and financial assets are approximately twice the size of liabilities. As mentioned in the article, assets are to some extent illiquid but even so, the significant assets reduce the need for paying down debt. Danish households can still service their debt when they retire from the labour market because of the very significant pension savings covering all employees. If households were paying down debt and building up pension savings at the same time, they would simply save too much – you should save for your retirement not for your death. The savings rate for households has already increased and the level is sufficient and when it is combined with the high savings in Danish companies, the consequence is a current account surplus over 7% of GDP. The significant current account surplus is not a new phenomenon. Denmark has had surpluses on the current account since 1990 and has net foreign assets of 40% of GDP. This is very different from the situation in the PIIGs, making the comparison irrelevant.

Having significant but illiquid assets and significant liabilities increases the vulnerability of increasing interest rates but as the outlook for the rates in Europe and Denmark points to very low interest rates for a very long period of time, this challenge is not imminent.

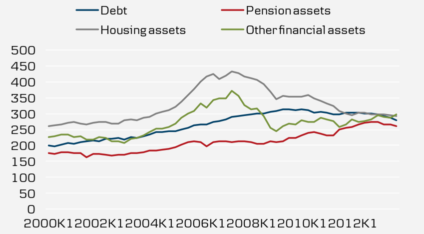
The Danish model of having high assets and liabilities is not perfect but it is very far from the system in the PIIGs. The challenges have been reduced as a consequence of the crisis and are thus more manageable. A further adjustment is called for but a collapse seems highly unlikely. Bear in mind that the housing market has bottomed out and that house prices are slowly increasing on average, reducing the challenges further.

We have looked in more detail at the consequences of high Danish household debt in the following research.

A drag, not a disaster

Danish households' gross debt is one of the highest in the world in proportion to the size of the economy. This is a continued source of concern among institutions such as the EU, the OECD and other economic watchdogs, as well as in the financial community. We see little reason to fear that the large gross debt will cause any immediate financial problems, although a high level of leverage is clearly a source of vulnerability especially towards interest rate movements. The biggest problem at present is that the housing market 'boom and bust' has left the household sector with more debt in relation to its assets than it would like, which is a significant dampener on consumption and is likely to remain so for some time.

Chart 1: More leverage



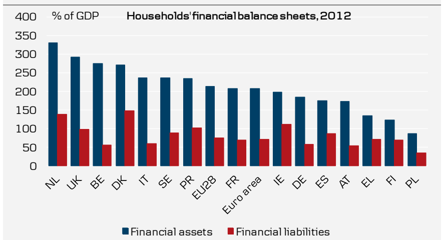
Sources: Danmarks Nationalbank, Statistics Denmark, Realkredit Danmark. There was an incentive to pre-pay tax on a type of pension savings in 2013. Those payments reduced gross pension savings by 3% of disposable income.

A high level of household debt is not a new phenomenon in Denmark. A unique system of mortgage financing has for more than 200 years allowed Danes to buy homes with relatively little equity. The system has worked well, keeping borrowing rates low and access to loans open even during the height of the crisis in 2008. A very comprehensive and economically sustainable welfare state means there is less need for private savings. Low private savings were a major concern in the 1970s and 1980s, when Denmark had large current account deficits. The level of debt increased strongly until 2009, driven by higher house prices and fuelling consumption and housing investment. Since then, household savings have increased enough to stop the debt level from rising but it has been reduced only slightly. The savings surplus is absorbed by pension savings.

Assets are also high

Starting in the late 1980s, a new system of labour market pensions has been built up and widened, so that it now covers nearly all parts of the labour market except the self-employed. This has led to a sharp increase in household savings, which means that the net position of households is much better than the gross debt suggests. As of the end of 2012, net household assets amounted to 121.2% of GDP, which is actually slightly above the EU average.

Chart 2: Large net household assets



Source: Eurostat

Of course, pensions are not liquid savings. Only 46% of Danish households' financial savings are bank deposits and other assets that can be realised in an emergency, against 65% in the euro area. Some pensions can be paid out before retirement with a tax penalty but many labour market pensions cannot. Furthermore, pensions savings consist partly of deferred taxes. Between 34.4% and 52.6% of most individual pensions will be paid in tax – the average is likely to be around 40%, so the position is not as good as the net household debt level indicates, although pension savings also include deferred taxes in many other countries.

Little effect as interest-only loans expire

The rules on the repayment of mortgage loans were liberalised in 2003 so that it became possible to have a period of up to ten years with interest-only payments. By default, the borrower will then begin to repay the loan within its original 30-year maturity. A loan taken in 2004 with interest-only selected for the first ten years will thus have to be repaid just over 20 years from now. That has caused concern that a sharp increase in the payment burden will cause financial problems for households over the next few years.

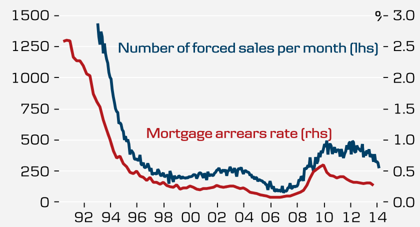
However, the number of severely affected households is likely to be small. As long as the loan-to-value is less than 80%, the borrower can legally change into a new loan with a new ten year interest-only period.

Other borrowers can legally extend the loan so that there is a 30-year payment period. The Ministry of Business and Growth completed a survey a year ago of all mortgage loans as of end-2011. According to the data, 174,800 households with a loan-to-value above 80% will reach the end of their interest-only period in 2013-19, if house prices remain unchanged. Of these, however, only 25,700 will need to use more than 50% of their disposable income to service the debt. These households have a total mortgage debt of DKK48bn, or about 3.5% of total household mortgage debt.

Furthermore, only 1,500 households will break the 50% of disposable income threshold as a consequence of expiring interest-only payments this year and only 3,600 in 2015. The bulk of affected households appear in 2019 at 6,900. If we assume that house prices increase by 1.5% a year, the total number affected over the period until 2020 will be about a third lower as fewer will be above the 80% loan-to-value.

The effect of expiring interest-only loans on things such as losses at mortgage banks is thus likely to be very limited in any given year. However, it is likely that increased loan repayment will further dampen household consumption and thus overall economic growth.

Chart 3: Limited crisis impact



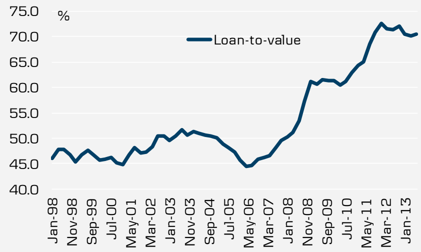
Note: Mortgage arrears is the share of dues not paid after 3.5 months
Source: Macrobond

Relatively little damage during crisis

It is worth noting that although the decline in house prices left many homeowners with a home worth less than their mortgage, it did not cause a large increase in foreclosures and forced sales of homes, or in mortgage payment arrears – even though it was accompanied by a relatively sharp fall in employment. Loan losses in the three major mortgage lenders were below 0.25%. The equity increase caused by earlier price rises had only to a limited extent been withdrawn by households. Very low interest rates also helped, so we might see more households in trouble as interest rates go up. We hope increasing employment will pull in the other direction.

On average, homeowners are still clearly solvent. The average loan-to-value was 70.5% at the end of Q3 13, according to our estimates.

Chart 4: LTV has peaked

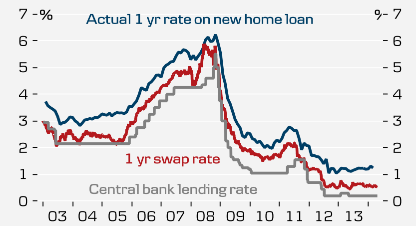


Source: Realkredit Danmark

Interest sensitivity has increased

Households, homeowners and the economy as a whole have become much more interest-rate sensitive since the introduction of variable rate mortgages in 1996. Prior to that, the standard loan had a fixed rate for 30 years and this is still the standard by which the credit worthiness of home buyers is judged. According to a study published by the Danish central bank, a one percentage point increase in short-term rates today decreases household disposable income by close to 0.7%. Before 2000, higher short-term rates actually increased household net income, as they affected few mortgages and households were (and are) net depositors in banks. Recently, interest sensitivity has declined a bit again, as the share of mortgages with annual readjustment of rates has declined from 31.4% of household mortgages in Q2 12 to 27.2% as of Q3 13, mostly replaced by loans where the rate is fixed for three or five years.

Chart 5: Stable risk premium for households

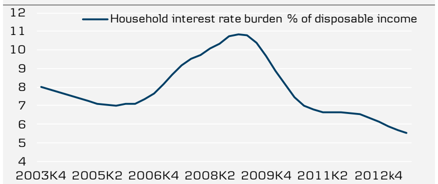


Note: there is a break in the series in October 2013
Sources: Danmarks Nationalbank, Macrobond

Falling interest rates since the onset of the crisis have served to reduce the interest burden on households significantly despite the high level of debt to a level lower than in 2003, the starting point of the time series. As of Q3 13, it was an estimated 5.5% of disposable income after tax. Almost all interest expenditure is tax deductible at a value that effectively reduces the cost by a third. The value of the deduction is lower (falling to 25.5% by 2019) for interest expenditure beyond DKK50,000, or DKK100,000 for a married couple. The DKK50,000/100,000 limit is not indexed, so eventually inflation will slowly cause the tax deductibility to be lowered.

Danish interest rates closely follow euro rates because of the fixed exchange rate policy and so the outlook is for an eventual slow and modest increase in short-term rates, which should not matter too much for household disposable income. The risk for both this and house prices is that pressure against the krone forces the central bank to raise rates sharply. However, it is hard to see where this pressure should come from in the near future.

Chart 6: Lower interest bill



Sources: Danmarks Nationalbank, Statistics Denmark, Danske Bank

Households are mostly financially robust

Danmarks Nationalbank conducted an analysis of households' financial robustness based on micro data from 2010 published in its *Monetary Review 2012, 4th Quarter*. The analysis concludes that most households are still able to meet their debt obligations on mortgage loans even following different shocks if they are willing to tighten their belts and have the same costs of living as low-income households. The analysis revolves around a so-called 'financial margin', which is the difference between the disposable income and living expenses (including redemptions on mortgage loans) (see the table to the right for the exact definition). The financial margin can be interpreted as a measure of households' financial scope. A negative financial margin means that household income does not cover its costs of living including redemptions and vice versa. The vast majority of households have a positive financial margin if they reduce their expenses to maintain a certain standard of living similar to low-income households. Taking the possibility to sell liquid assets into account, only 1% of households have negative financial margins.

Table 1: Definition of financial margin

Disposable income
- redemptions on mortgage loans
- housing occupancy expenses
- other fixed expenses
- a sufficient disposable amount
= financial margin

Source: Danmarks Nationalbank

Table 2: Breakdown of debt by financial margin

Financial margin (1000 DKK)	Mortgage debt	Bank debt (DKK bn)	Other debt
< 0	35	29	31
0-75	102	75	78
75-150	165	93	96
150-250	296	118	122
> 250	573	195	202
SUM	1171	510	529

Source: Danmarks Nationalbank

Table 3: Breakdown of debt by financial margin after 5 percentage-point interest rate shock

Financial margin (1000 DKK)	Mortgage debt	Bank debt (DKK bn)	Other debt
< 0	75	63	69
0-75	130	87	89
75-150	195	99	102
150-250	318	117	121
> 250	453	144	148
SUM	1171	510	529

Source: Danmarks Nationalbank

Interestingly, the vast majority of households can withstand higher interest rates as only 2% more households will have a negative financial margin following an interest rate shock of 5 percentage points lasting one year if they reduce expenses. Not surprisingly this shock would mostly affect households with variable-rate mortgage loans. It is important to note that the shock will hit households with variable-rate mortgage loans differently depending on the time between the interest rate adjustments so interest rate shocks will not affect the Danish economy at full power on impact. Households with a longer time to the next interest rate adjustment can make the necessary changes to meet higher interest rates on their mortgage debt in advance. Note that the study is based on 2010 data and that interest rates are lower today than in 2010. Therefore, it is likely that households are more robust to a 5 percentage points interest rate shock today than in 2010.

The analysis also finds that households are quite robust with respect to temporary unemployment for the household's principal earner of three- and six-months duration, respectively. The reason is that most households are able to sell liquid assets in order to offset temporary unemployment.

In a follow-up study, the Nationalbank concludes that households have shown a strong determination to avoid arrears on mortgage loans. Borrowers are personally liable for their mortgage debt, which gives them a large incentive to avoid arrears. The analysis finds that the number of households with mortgage arrears remains low even following two different stress scenarios.

Overall, the analysis concludes that Danish households are robust with respect to the different shocks that can affect households' ability to meet their obligations as long as they are willing to make some sacrifices by living on a tighter budget and selling some of their liquid assets. The incentive structure in the credit market is such that mortgage arrears are rare.

Modest rise in bad credit

As explained earlier, households have an incentive to meet their mortgage debt obligations before other loans and bills. The risk of default is higher on ordinary bank loans, including the loans that home buyers typically get to supplement the mortgage loan, which can only cover up to 80% of the value. There is no published default rate for household bank loans. However, when looking at the so-called RKI register in which firms can register persons who have not paid their bills, it does not seem as though households have had a harder time paying off other debt than mortgage debt following the crisis.

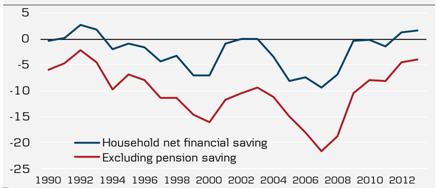
This can be seen by looking at the relative increase in the number of persons registered in RKI, which has been lower than the relative increase in the number of mortgage arrears. That said, the level of registered persons in RKI is much higher than the level of mortgage arrears but it is difficult to interpret the level in RKI as the publication of the data is a relatively new phenomenon. It could either be that the level was low relative to normal times in 2008 or that the level is high relative to normal times here in 2014 (or both). Although the RKI statistics cover missing payments on bills wider than mortgage arrears, the statistics have the disadvantage that persons registered in the RKI are included for five years (you are also removed if you pay all your bills), i.e. that persons included in 2009 still appear in the statistics. The RKI statistics, therefore, lag the cyclical changes of the business cycle. According to Experian, there were 232,804 persons registered in RKI, which corresponds to 5.24% of the population as of January 2014. These persons owe DKK72,702 on average. The number of registered persons was 185,084 in January 2008, so the total number of registered persons has increased by nearly 26% over the past five years. Also, the average person registered owes more money in 2014 than in 2008. Looking at the statistics in greater detail reveals that the largest share of poor payers relative to the total population is found for persons aged 21-30 years, 31-40 years and 41-50 years, all of which have shares at or above 7.5%, while persons aged 41-50 years, 51-60 years and 61-70 years owe the greatest amount of money. It is also evident from the statistics that there are large regional differences.

Table 4: RKI statistics

	Persons registered	Average amount per person (DKK)
Jan-08	185,084	39,451
Jan-14	232,804	72,702

Source: Experian

Chart 7. Savings are up, but not high



Source: Statistics Denmark. % of disposable income. 2013 data is adjusted so that early payment of tax on pension does not count as expenditure.

A drag on the economy

While large household debt does not pose an immediate threat in itself, the combination of high debt and falling house prices has certainly caused trouble for the Danish economy during the crisis and is likely continue to do so. Private consumption was more severely hit in 2008/09 than in most comparable countries and has failed to recover at all since then. Thus, in 2013, private consumption in fixed prices was 3.4% lower than in 2007, which explains most of the poor performance of Danish GDP over that time and the large number of bankruptcies in the retail and construction sectors. This is despite an estimated 4.9% increase in real disposable household income over the same period. Basically, households have stopped financing consumption through increased borrowing, so that spending today is actually slightly lower than income. Falling house prices is the obvious explanation. The price index for single-family houses is down by 17% since its 2007 peak. There is a strong geographical correlation between the house price and consumption declines. According to Danmarks Statistik's consumer survey, virtually all of the fall in consumption has happened in Zealand, which is also where the house price boom and bust happened.

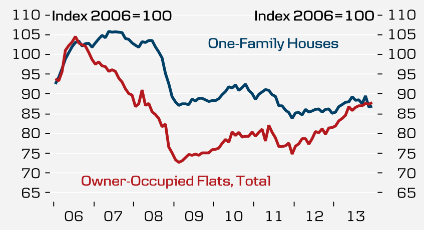
Private consumption growth is likely to pick up again as house prices have now stopped falling – in 2013 they were up by 2.4% on average. However, the fall that has already happened is likely to act as a drag on the growth rate for several years yet. Ministry of Finance calculations show that a return to the debt-to-disposable-income ratio of 2005 by 2020 implies a growth rate in private consumption of just 1.3% a year for the next six years. This is entirely plausible in our view, as house prices as a percent of disposable income are still lower than they were in 2005. However, the ministry's main scenario is that households will take longer to adjust their debt to the lower level of house prices and that consumption growth will be 2.1% a year on average until 2020.

Strong balances leave room for manoeuvre

As noted, the net financial position of Danish households is fairly strong but the net position of the country as a whole is much stronger. Almost constant current account surpluses since 1990 have turned a large foreign debt into net foreign assets equivalent to 39.5% of annual GDP. Returns from these foreign investments have helped to boost the current account surplus, which reached a record 7.3% of GDP in 2013. These strong external factors clearly go a long way towards explaining the high degree of confidence that financial markets have in the Danish economy and hence the low interest rates, as do sound and AAA-rated government finances.

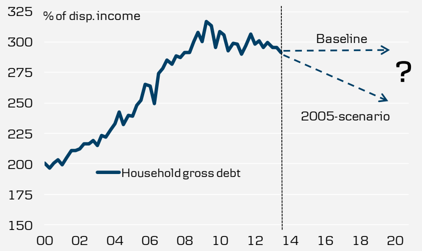
Government finances swung into deficit during the crisis but only in 2012 did they exceed the EU limit of 3% of GDP. Denmark is now officially released from the EU's macroeconomic imbalances procedure, under which it was placed to keep a watch on the government deficit. Large household debt is also something the EU is watching but it is not considered enough of a problem to be classified as a macroeconomic imbalance. However, the government itself estimates that its structural deficit (i.e. adjusted for the business cycle and one-off effects) this year will be 0.5% of GDP, which is the maximum allowed under the stability and growth pact. So, in principle, there is no room for further fiscal easing. In reality, the government has room to act if a severe crisis hits households. Only a minority of EU countries actually abide by the deficit targets and, with a gross debt of around 44% of GDP, the Danish government is not in immediate danger of being cut off from borrowing. However, with a fixed exchange rate, there is always a risk that higher government spending will eventually lead to higher interest rates.

Chart 8: Severe price fall



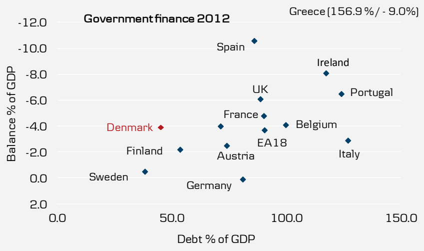
Source: Macrobond

Chart 9: The development in household debt will be important



Sources: Danmarks Nationalbank, Danske Bank Markets

Chart 10: Relatively sound government finances



Source: Eurostat

Disclosures

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