14 April 2014 │ 11 pages

Developed Markets
Western Europe

Denmark

Quiet Stagnation

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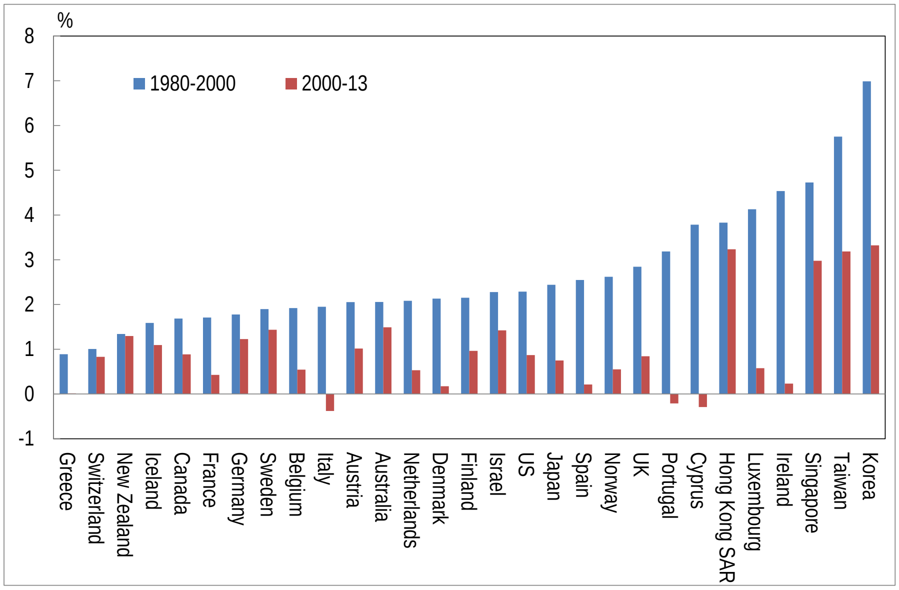
- At moderate levels, debt can improve welfare and enhance growth, but at high levels it often can be damaging. In the years leading up to the financial crisis, household debt rose sharply in Denmark – from 72% of GDP in 1995 to 146% in 2009, i.e. well above the level (roughly 85% of GDP) at which household debt seems to become a drag on growth. Although having fallen slightly in recent years, household debt in Denmark relative to GDP is still the highest among advanced countries, and the adverse consequences on economic activity have been clear: real GDP per head has barely expanded during the period 2000-13. Denmark has a relatively high level of real GDP per head, but in terms of the growth in real GDP per head over recent years, Denmark is among the worst-performing advanced economies (see Figure 1).

- Although conditions on the housing market are slowly improving, it rests on fragile grounds, and debt-laden consumers remain reluctant to spend. With the scope for fiscal stimulus largely exhausted, we find it difficult to see how this situation could change significantly in coming years. We conclude that although Denmark will not be in crisis, it will likely continue to face quiet stagnation.

Figure 1. Selected Countries – Average YoY Change in Real GDP Per Head (Pct.), 1980-2013



Sources: IMF and Citi Research

Denmark: Quiet Stagnation

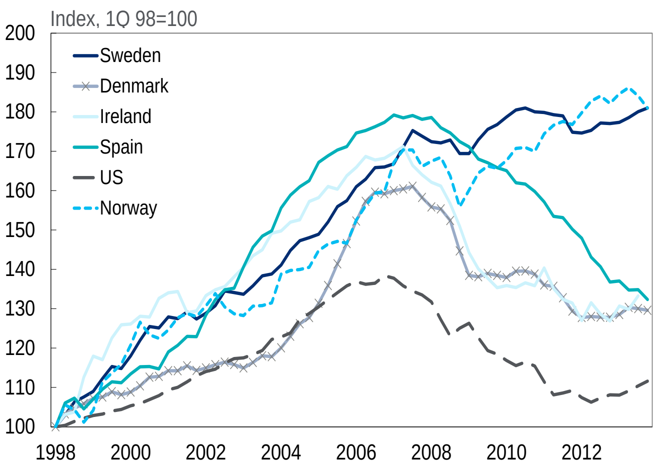
Denmark will probably not be in crisis, it will likely continue to face quiet stagnation

Debt is a two-edged sword; at moderate levels, it improves welfare and enhances growth, while at high levels it can be damaging. In the years leading up to the financial crisis, household debt rose sharply in Denmark – from 72% of GDP in 1995 to 146% in 2009/10, i.e. well above the 85% of GDP ratio at which household debt is estimated to become a drag on growth[1]. Although having fallen slightly in recent years, the household debt/GDP ratio in Denmark is still the highest among advanced countries[2], and the consequences on economic activity have been clear; GDP per head has barely expanded during the period 2000-13. Although conditions on the housing market are slowly improving, it rests on fragile grounds, and debt-laden consumers remain reluctant to spend. With the scope for fiscal stimulus largely exhausted, we find it difficult to see how this situation could change significantly in coming years. We conclude that although Denmark will probably not be in crisis, it will likely continue to face quiet stagnation.

The Danish housing market has been through ten turbulent years

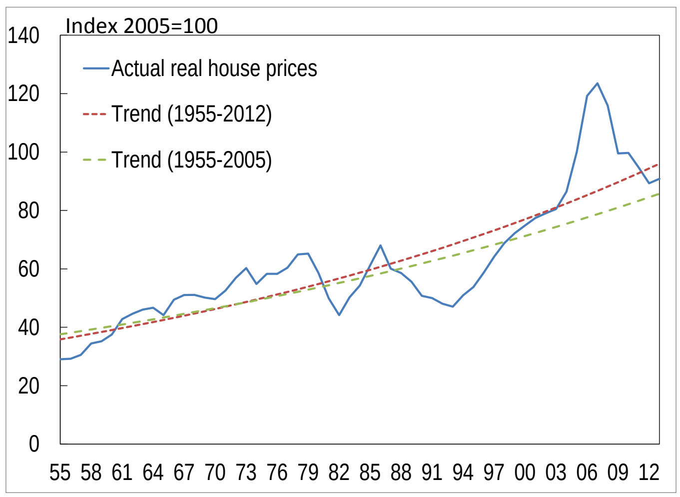
The Danish housing market has been through ten turbulent years in which unsustainable price gains up until 2007 were followed by a collapse in prices; from 2004 to the peak in 2007, house prices rose by 53%, driven by low interest rates, a cyclical upswing and widespread optimism regarding future developments in the housing market. Also the nominal freeze on property value taxes and the introduction of new housing finance such as interest-only loans and adjustable interest-rate mortgage loans – often in combination – boosted the housing bubble. From late 2007 to the summer of 2009, housing prices fell by nearly 20%, and this was accompanied by a deep recession, sluggish recovery and widespread worries over banking sector health. Since then, house prices have fallen further (by 10% by 4Q-12), and although the housing market has stabilized throughout 2013, with moderate price gains, house prices (in real terms) in late-2013 were about 25% below the 2007 peak, or approximately around late-2004/early-2005 levels (see Figure 2).

Figure 2. Selected Countries – Real House Prices (1Q 1998=100), 1998-2013



Sources: Haver and Citi Research

Figure 3. Denmark – Real House Prices and Trend (Index, 2005=100), 1955-2013



Sources: Danish Ministry of Economic Affairs and the Interior and Citi Research

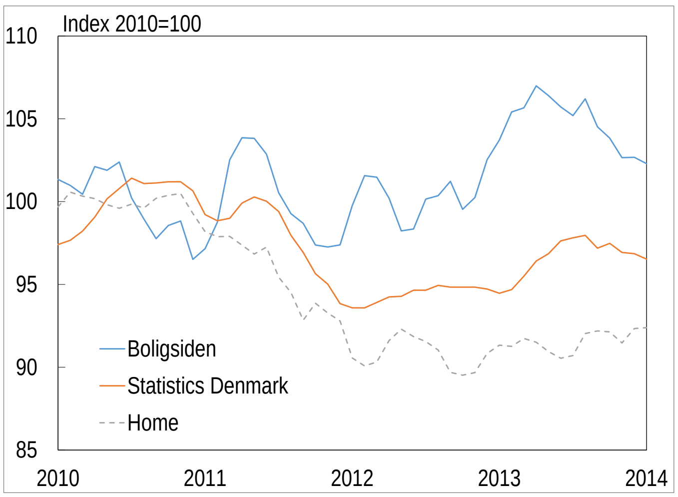
[1] See: *"The real effects of debt"* by Cecchetti, Mohanty and Zampolli, BIS, September 2011. We note, though, that the authors emphasises that *"the impact is very imprecisely estimated"*.

[2] The pattern is similar if we look at debt/gross disposable household income, but this measure cannot be constructed on a timely basis for some advanced economies.

House prices approaching long-term trend level

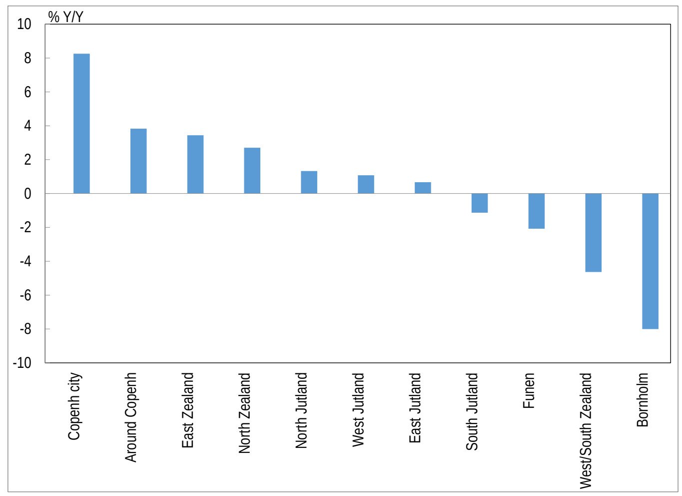
In a recent analysis, the Ministry of Economic Affairs and the Interior looks at how far the housing market has come in its adjustment process following the bubble by comparing the actual price level with 1) the trend over the period 1955-2012 and 2) the trend over the period 1955-2005, i.e. excluding the period of the housing boom/bust[3]. They find that annual real house price growth averaged 1.7% in the period 1955-2012, which is about 5% below the 2012 level, while average annual real house price growth was 1.4% in the period 1955-2005, about 5% above the current level of house prices. Based on this, the Ministry concludes that actual house prices seem to be approaching the level where house prices would have been had they followed the historical trend since the start of the 2000s (see Figure 3).

Figure 4. Denmark – Nominal House Prices (Index 2010=100), 2010-Jan 2014



Sources: Boligsiden, Home, Statistics Denmark and Citi Research

Figure 5. Denmark – Regional Nominal House Prices (Yr.-Yr.), 2013



Sources: Boligsiden and Citi Research

The current state of the housing market

Improving conditions on the housing market, but rest on fragile grounds

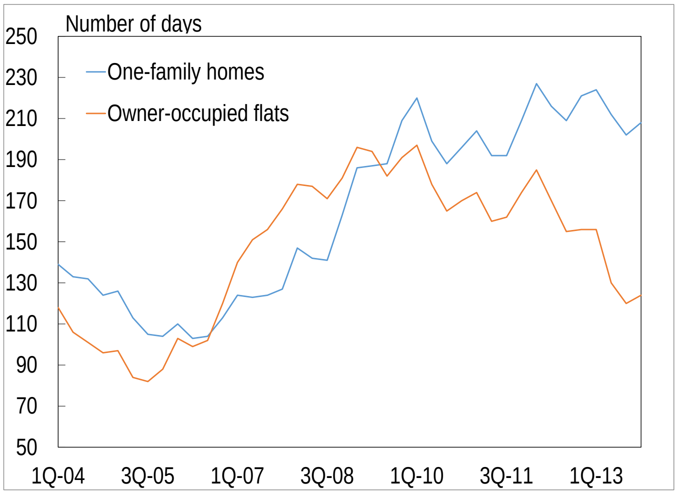
During the course of 2013, we have seen increasingly more evidence of stabilization on the housing market (driven by historically low interest rates); the three benchmark house price indices in Denmark show a similar stable to slightly upward trend in house prices since spring-2012 (see Figure 4).[4] Depending on which indicator one uses, house prices have gained somewhere between 1.7-2.7% Y/Y by late-2013 (in nominal terms). In real terms, nationwide house prices gained 1.8% between 2012 and 2013, according to data from Statistics Denmark. These positive tones are also supported by data for turnover and housing supply. However, the statistics also suggest that we are far from a normal situation on the housing market, with the improvement resting on fragile grounds; the price gains are primarily dominated in the capital, Copenhagen, with parts of Denmark still facing declining house prices (see Figure 5), turnover is well below the long-term average, at the same time as the supply of houses and turnover times are comparatively high (see Figure 6-7). In addition, an increasing number of households will face the expiration of interest-only mortgage payment period (more on this below). However, in global terms, housing in Copenhagen has become less expensive than many

[3] *See "Boligpriser og normaliseringen af renterne frem mod 2020"*, Oekonomisk Analyse nr. 14, December 2013, the Ministry of Economic Affairs and the Interior.

[4] The three indices can give somewhat different signals from one month to another given different measurement methods and limited data.

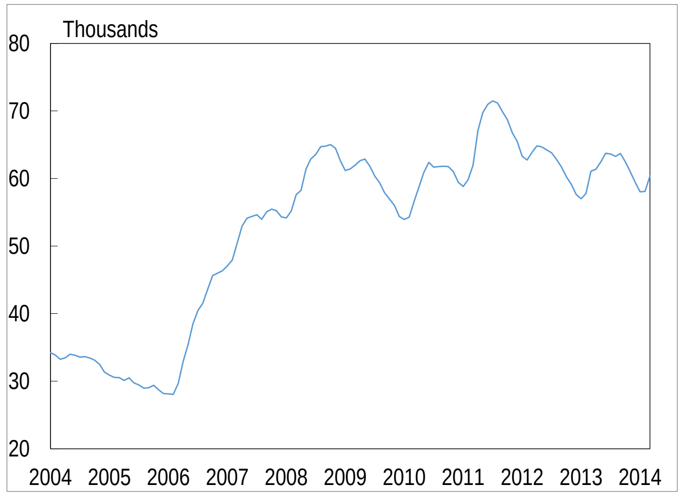
other major cities and this improvement in relative affordability may well continue to boost prices in the Copenhagen area, even if other regions remain lackluster[5]. The increase in migration to cities also may amplify regional differences.

Figure 6. Denmark – Average Turnover Time (Days), 1Q 2004-4Q 2013



Sources: Realkreditraadet and Citi Research

Figure 7. Denmark – Housing Stock for Sale ('1000s), 2004-Mar 2014



Sources: Realkreditraadet and Citi Research

Record-high household debt burden

Danish household debt-to-GDP is the highest among advanced economies

During the housing bubble, household debts soared to a record-high 146% of GDP in 2009 (308% of disposable income). This ratio has since fallen to 138% of GDP (302% of disposable income) in 3Q-13. Meanwhile, this does not change the fact that Danish household debt-to-GDP is the highest among advanced economies included in BIS data (see Figure 8). Although not an immediate threat in itself, the combination of high debt and falling house prices has proved very problematic for the Danish economy, and will likely continue to be so. Private consumption, which was severely hit during the 2008/09 financial crisis, has not managed to recover at all since then; the level of real private consumption in 2013 was 3.4% below the 2007 level (with the 4Q-13 level being the lowest since 4Q-05). Weakness in consumer spending largely explains the poor performance in real GDP during the same period (is 4% below the 2007-level). To put this in perspective, real disposable household income gained about 5% during the same period.

Sluggish housing and high household debt likely to act as drag on growth for a long time to come

The mix of sluggish housing and high debt levels is likely to act as drag on growth for a long time to come; calculations by the Ministry of Finance suggests that for the household debt burden to return to the 2005 ratio (of 252% of disposable income) by 2020, this would require growth in private consumption of just 1.3% Y/Y over the next six years. The Ministry, meanwhile, expect consolidation to take somewhat longer, forecasting consumption growth of on average 2.1% Y/Y until 2020.

High debt burden is a structural feature of the Danish economy

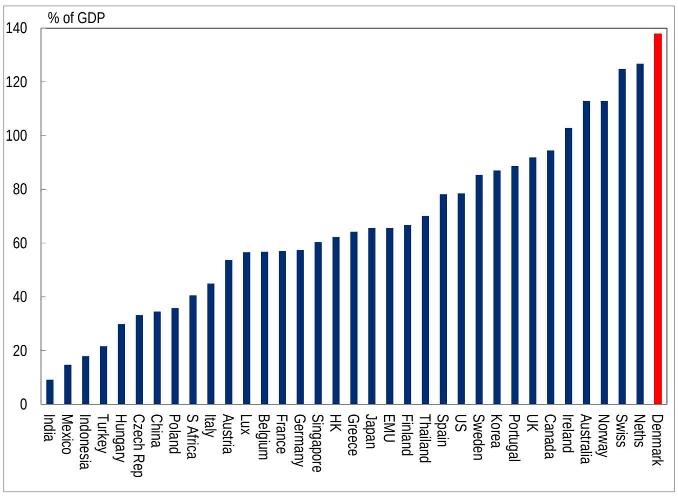
We realize that the high household debt burden to some extent is a structural feature of the Danish economy as household assets are considerably in excess of liabilities, and is related to the Danish mortgage system.[6] However, most household assets are illiquid (pensions, real estate) and can only be realized at a high cost, at

[5] In Mercer's *"Cost of Living in Cities"* report, Copenhagen has gone from being the world's sixth most expensive city to live in (2007) to rank as number 21 in 2012.

[6] The mortgage system is based on the 'balance principle', which ensures low risks for households and banks when financing mortgage loans, through a precise match between the mortgage loan raised by a homeowner and the bond issued by the mortgage bank for funding the particular loan. In other words, the financial risk borne by the mortgage is kept to a minimum.

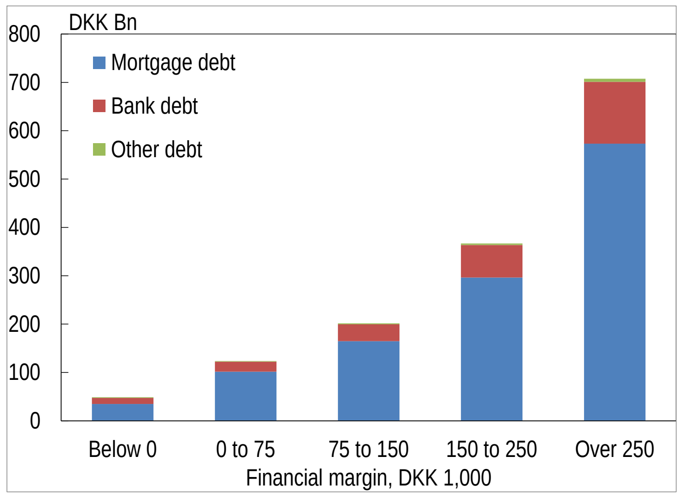
the same time as the composition of mortgage loans has changed since 2003 — with installment-free and adjustable-rate loans more widely used than fixed-rate loans with installments. Hence, Danish households are today more sensitive to interest rate increases and fluctuations in property prices than was the case a decade ago; DNB finds that a 1pp increase in short-rates today would lead to a decrease in household disposable income by close to 0.7%. IMF estimates suggest that a 10% house price correction would deduct about 3% of GDP from household balance sheets and would imply a reduction in annual consumption of 0.5-0.9% of GDP[7]. In other words, this suggests that the current vicious cycle, in which debt-laden consumers remain reluctant to spend, growth stays low and household debt fails to decline, very likely could stay intact. For sure, the 4Q-13 national accounts data, albeit distorted by technical factors (a mild winter, two storms and volatile ship investments), confirmed such risks; the economy returned to negative growth (slipped 0.5% Q/Q) and private spending contracted by 1.3% Q/Q.

Figure 8. Selected Countries – Household Debt (Pct. Of GDP), 3Q 2013



Sources: BIS and Citi Research

Figure 9. Denmark – Breakdown of Debt vs. Financial Margin, Families w/Mortgage Debt, Tight Budget, 2010



Note: The financial margin is defined as the amount at the family's disposal after paying housing occupancy expenses, other fixed expenses and general costs of living in line with standard budgets for different family types. If the disposable income does not exceed the sum of these expense items, the financial margin is negative, and the family's current income should be regarded as insufficient. Other debt includes all debt other than debt to mortgage banks and banks. Sources: Danish National Bank and Citi Research

Some evidence that the rise in debt has been concentrated among households with a relatively high debt-servicing ability

There is some evidence that the rise in debt has been concentrated among households with a relatively high debt-servicing ability rather than a US-style sub-prime boom. A study commissioned by the Ministry of Business and Growth finds that in an event of an interest rate shock of 5%, only 13% of the households would have to spend more than half of their disposable income to service debt. Furthermore, only 9% of households would be unable to amortize their debt over the loans term to maturity under the worst case scenario that households could not change the type of loan or simply sell their property[8]. The DNB has reached a similar conclusion in a 2012 study, namely that households with the highest debt also tend to have a broad financial margin, defined as the amount at the family's

[7] See *"Denmark: 2012 Article IV Consultation"*, the IMF, January 2013. The estimated effects on consumption are based on an assumption of a marginal propensity to consume from wealth of 0.03-0.06.

[8] See: *"Gældsudgifter i husholdninger med realkreditlån"*, Ministry of Business and Growth, January 2013.

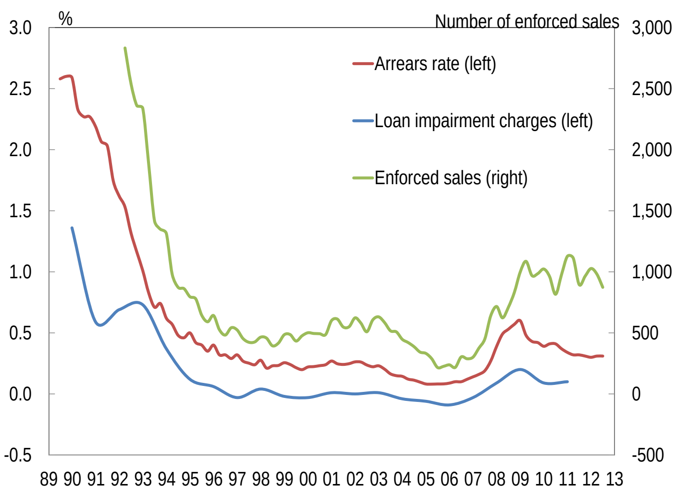
disposal after paying for accommodation expenses and other general costs of living (see Figure 9)[9]. In other words, the two studies suggest that the overhang of debts is more likely to lead to restrained consumption rather than a collapse. This is further confirmed by the fact that households tend to priorities paying off mortgage debt over other kinds of debt in order to avoid enforced sales (arrears rate stood at 0.3% in 2Q-13, see Figure 10)[10].

Mortgage debt and financial stability risks

The high household debt burden combined with the widespread use of deferred-amortization mortgages has increased the vulnerability of the financial system

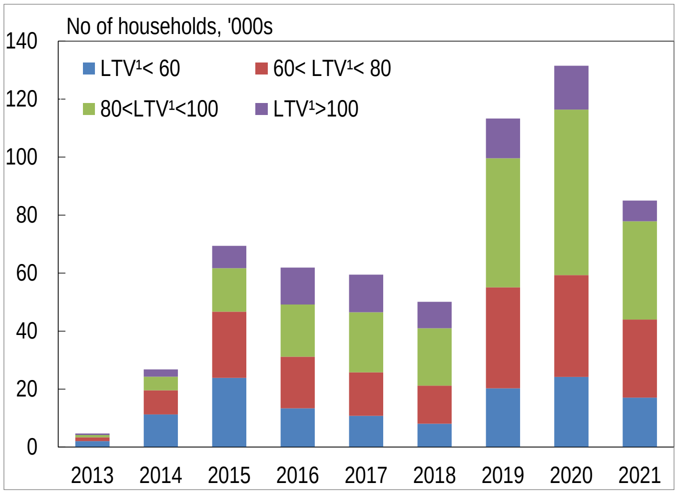
The high household debt burden combined with the widespread use of deferred-amortization mortgages has increased the vulnerability of the financial system, especially during periods of falling house prices. In such a scenario, a borrower may not be able to refinance with a new interest-only loan and will possibly have to amortise parts of the debt within a short period, which could lead to a steep rise in debt payments[11]. The combination of decreasing house prices and interest-only loans is also a challenge for mortgage banks, as their need for top-up collateral rises.

Figure 10. Denmark – Arrears, Enforced Sales and Mortgage Banks' Total Loan Impairment Charges, 1990-2013



Sources: Danish National Bank and Citi Research

Figure 11. Denmark – Number of Households with Expiring Deferred-Amortization Loans (Thousands), 2013-2021



Note 1: The loan-to-value (LTV) ratio covers the remaining part of the loan as a ratio to the property value of the property pledged as collateral for the loan. The property value is the mortgage bank's valuation at the end of 2011. If a household has several deferred-amortisation loans expiring in the same year, but with different properties as collateral, the loan with the highest LTV ratio is included. Sources: Danish National Bank and Citi Research

Adjustable-rate and deferred-amortization mortgages most popular loan types

Adjustable-rate loans were introduced as far back as in 1996, but only really gained ground in the early-2000s. In October 2003, deferred-amortization loans were introduced and quickly became very popular. In just a few years, these new loan types took over traditional fixed-rate loans with amortisation as the dominant type of

[9] See: *"Quarterly Monetary Review 4th quarter 2012"*, Danish National Bank, Part 2.

[10] Borrowers are personally liable for their mortgage debt, which gives them a large incentive to avoid arrears.

[11] Existing legislation offers three options to households with a deferred amortization loan entering its amortization period, and with a LTV ratio above 80%, who do not wish to repay their loans over the remaining term to maturity: 1) converting to a 30-year loan with amortization, 2) raising a new deferred-amortization mortgage loan up to the 80% LTV and supplement it with a bank loan with amortization, or 3) taking a new deferred-amortization loan offered by the bank if they face particular financial constraints and provided that the bank provisions for the potential losses

home financing. As the interest-only loans normally are granted for a 10-year period, a rising number of households are now due to reimburse the principal of these loans (see Figure 11), which could have negative implication for private consumption.

A rising number of households are now due to reimburse the principal of these loans, which could have negative implication for private consumption

In its 2013 Financial Stability Report, DNB, finds that approx. 240,000 households (9.2% of total) have deferred-amortisation loans with a LTV ratio in excess of 80%. If these households were to start amortizing from late-2011, the number of households with a negative financial margin would increase from 5,800 to 18,800 (0.7% of total). If instead the households decided to opt for a new deferred-amortization mortgage loan up to the 80% LTV, supplemented with a bank loan with amortization, the number will only increase to 8,300 households. As these households only will be liable for 1.5% and 1.0%, respectively of total household debt, the Bank concludes that expiry of the deferred amortization period for mortgages is manageable and sees no need for new legislation. Stress tests performed by the Ministry of Business and Growth also find that most households with deferred-amortization mortgage loans have sufficient financial scope to be able to meet its obligations.

Measures to mitigate financial stability risks

To mitigate the risks related to the high household debt burden combined with the widespread use of interest-only mortgages, the Danish government has announced that variable-rate loans and/or deferred-amortisation loans only may be granted to borrowers who would be able to service a fixed-rate loan with amortization. In addition, in late November the government presented a bill on compulsory, contingent maturity extension for mortgage bonds, if interest rates suddenly rise very sharply or refinancing is not possible. Finally, mortgage tax deductibility has gradually been reduced from 73% in 1986 to around 33% today, and is set to decline to 25.5% in 2019, according to current legislation. In combination, these measures suggest that appetite for debt will remain weak ahead.

The scope for fiscal stimulus largely exhausted

In sum, although a large debt overhang, we do not see a fast-moving crisis of default, but rather a slow-moving crisis of weak spending. Although Denmark likely will be released from the EU's macroeconomic imbalances procedure (to be announced in the Commission's spring forecasts due in May), government estimates indicate that its structural deficit (i.e. adjusted for the business cycle and one-off effects) this year will stand at 0.5% of GDP. As this is the maximum allowed under the Stability and Growth Pact, this suggests very limited, if any room at all, to loosen fiscal policy. Meanwhile, with gross public debt of around 44% of GDP, we reckon the government would have room to act should a severe crisis hit the household sector. We note, though, that with a fixed exchange rate, there is always a risk that higher government spending will eventually lead to higher interest rates.

Appendix A-1

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