

# BALANCE OF PAYMENTS, NET FOREIGN ASSETS AND FOREIGN EXCHANGE RESERVE

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## INTRODUCTION AND SUMMARY

Since 1990, the current account of Denmark's balance of payments<sup>1</sup> has shown a surplus. This follows a long period of deficits. Consequently, the foreign debt, which peaked at approximately 45 per cent of the gross domestic product, GDP, in the second half of the 1980s, has made way for net foreign assets of the same magnitude, cf. Chart 1. The shift from a debtor to a creditor nation reflects a considerable increase in gross savings in the economy over the last 30-35 years.

At present the current account surplus is almost 8 per cent of GDP. This is the highest level in the post-war era, to some extent reflecting the cyclical position with low investment and consumption ratios. But even in the event of normalisation of these ratios and a return to a neutral cyclical position, Denmark's current account is estimated to show a surplus of around 4-5 per cent of GDP.

This underlying current account surplus is attributable to a private sector savings surplus, primarily as a result of contributions to labour market pensions, combined with healthy public finances designed to be sustainable in the long term.<sup>2</sup>

A well-developed financial system, among other factors, has enabled households and firms to plan their consumption and investment as they wish. Households save for spending later, and pension savings, for example, contribute to

households being able to maintain more or less the same level of consumption after retirement from the labour market. Especially the building up of labour market pensions has boosted gross savings in the private sector and entailed strong growth in private pension wealth. However, the number of Danes receiving pension benefits is rising, and the difference between pension contributions and pension pay-outs is diminishing. The accumulation of pension wealth will therefore gradually subside, and households will start to draw on their wealth. Consequently, the current account surplus is expected to decline. But the adjustment is expected to be gradual, inter alia because investment income from net foreign assets, which accounted for 4 per cent of GDP last year, increases domestic demand only slowly.

The primary drivers of the large current account surplus are thus the current cyclical position, sustainable public finances and savings for a future with a considerably larger share of elderly people in the population. Hence, the surplus per se does not give rise to adjustment of economic policy, neither at present as a result of the current large surplus, nor in future when the surplus begins to decline. For example, it is not advisable to try to reduce the current account surplus by seeking to offset the private sector savings surplus by large government deficits.

1 "Current account" and "balance of payments" are used synonymously here.

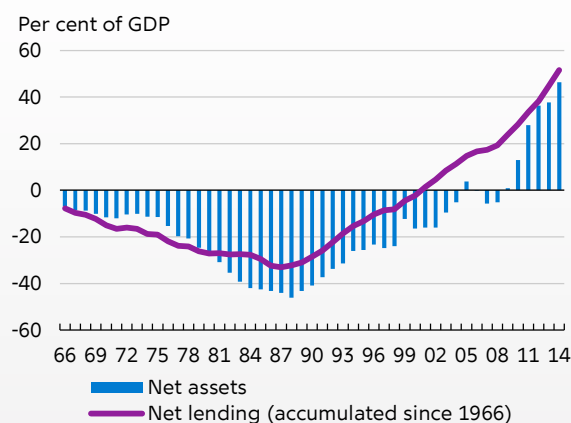
2 Savings surplus is used synonymously with net lending.

Moreover, the accumulation of net foreign assets has consequences for monetary policy. Substantial net foreign assets may contribute to ensuring a low interest rate spread to the euro area, but

may also periodically entail capital inflows and upward pressure on the krone, resulting in a large foreign exchange reserve. Purchases of foreign exchange for the reserve do not entail a need to change its risk profile.

**Denmark's net foreign assets**

Chart 1



Note: Denmark's net foreign assets. Net lending is the difference between gross domestic savings and investments in real capital. Accumulated net lending corresponds to net assets adjusted for capital gains and losses. These are generally evened out over time. Denmark's net lending corresponds to the balance of the current account plus the capital account, net, e.g. payment of insurance premiums.

Source: Danmarks Nationalbank.

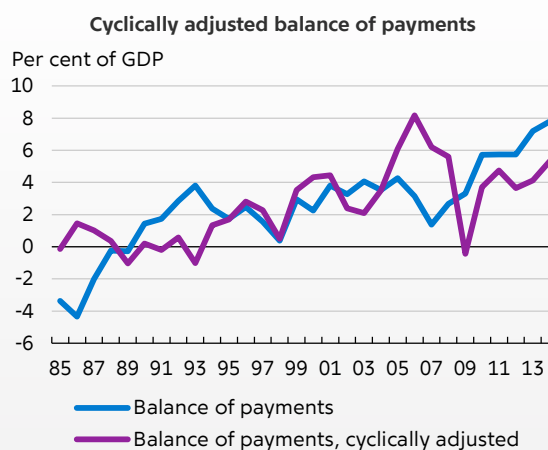
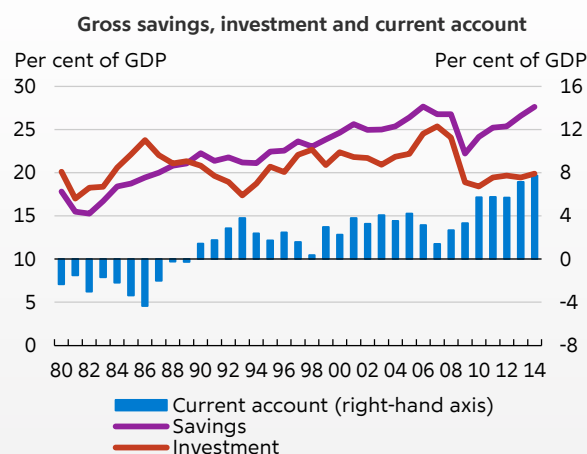
## WHY IS THERE A CURRENT ACCOUNT SURPLUS?

In the national accounts, the balance of payments is the difference between domestic savings and domestic investment in real capital. The improvement of the current account since the early 1980s has been driven mainly by higher gross domestic savings, which rose by around 10 per cent of GDP until the beginning of this millennium and has since been more or less constant, cf. Chart 2 (left). Investment in Denmark, on the other hand, has fluctuated around a level of 20 per cent of GDP throughout the period. It has been on the low side of this level since 2009.

The current account surplus tends to grow during a downturn, chiefly because firms and households reduce their volume of new investment in Denmark. Gross domestic savings, on the other hand, are less cyclical, one reason being that sav-

**Savings, investment and current account and cyclically adjusted balance of payments**

Chart 2



Note: Left-hand chart: Investment includes inventory investment and gross fixed investment in Denmark. The difference between gross savings and investment is not in full accordance with the current account, since capital transfers are not included. The current account is based on the national accounts. Right-hand chart: The calculation of the cyclically adjusted balance of payments assumes that investment income and other transfers do not fluctuate in step with the output gap (actual correlation in the period 1990-2014: -0.02 per cent). The elasticity between the balance of goods and services and the output gap is assumed to be around -1 in the period 1990-2014. This elasticity is used to calculate a cyclically neutral balance of goods and services. The substantial fluctuations in the cyclically adjusted balance of payments in 2005-12 are due to strong fluctuations in the output gap in the wake of the financial crisis.

Source: Statistics Denmark and own calculations.

ings in the private and public sectors typically develop in opposite directions. This is because the private sector increases savings during a downturn, while the public sector has higher expenditure, lower revenue and hence lower savings.

The substantial current account surplus is partially due to the fact that the Danish economy is still below its cyclically neutral level, cf. Chart 2 (right). Calculations using Denmark's Nationalbank's macroeconomic model show that normalisation of the currently low levels of investment and consumption would reduce the current account surplus as a percentage of GDP by around 3-4 percentage points from the current level, cf. Box 1. Even if the output gap closes and the relatively low investment and consumption ratios in the private sector rise, the current account surplus is estimated to be around 4-5 per cent of GDP, which is slightly higher than the average surplus in the period 1995-2014.

The current account balance can also be calculated as the difference between the value of exports and imports plus net investment income from abroad. This approach shows that recent years' rising trend in the actual surplus is primarily due to an increase in the net return on foreign assets, cf. Chart 3. The return has risen in step with the increase in net foreign assets, but it also depends on the composition of assets and liabilities and on interest rates and equity prices. Whereas it used to be negative, the net return on foreign assets has been positive since 2005, by 4 per cent of GDP last year. The balance of goods and services, on the other hand, has declined slightly since the early 1990s.

The current account surplus is influenced by competitiveness. During a boom, with high domestic investment and a low current account surplus, domestic wage growth tends to be higher than wage growth abroad, and competitiveness

### Current account on normalisation of consumption and investment ratios

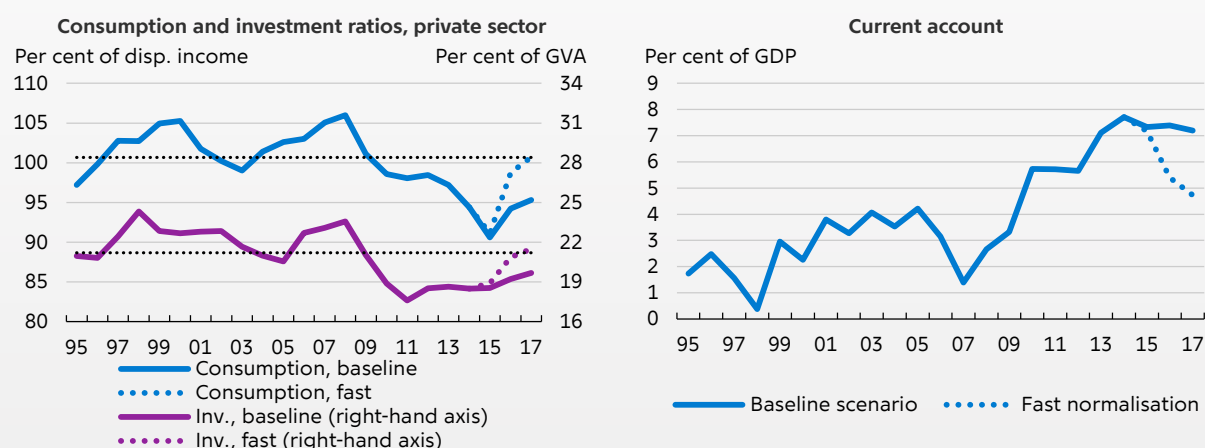
Box 1

The Danish economy is in an upswing. Growth is expected to increase only gradually. This implies a slow normalisation of consumption and investment ratios, which will remain low in the coming years compared with recent decades, cf. the chart below (left). The current account surplus will remain more or less at the current high level, cf. the chart below (right).

In an alternative scenario with faster normalisation of consumption and investment, on the other hand, the current

account surplus will fall from the current level by approximately 3-4 percentage points until 2017. But this scenario too shows a considerable current account surplus in the region of 4-5 per cent of GDP. The calculation is based on average consumption and investment ratios since 1995, so the underlying current account surplus will be close to the average surplus in this period.

### Normalisation of investment and consumption ratios

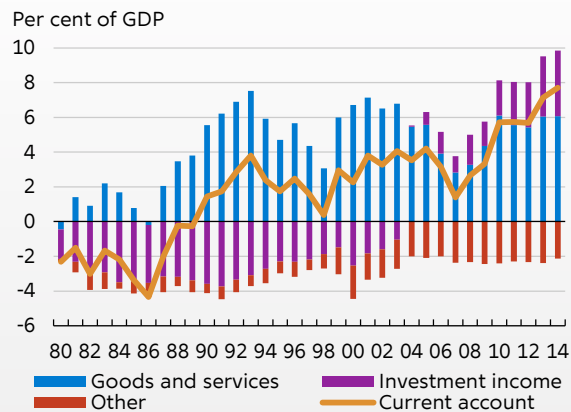


Note: Left-hand chart: The black broken lines are averages for the period 1995-2015, 2nd quarter. The baseline scenario is Denmark's Nationalbank's central forecast. The stronger upswing (fast normalisation) begins in the 2nd quarter of 2015 in both scenarios. The consumption ratio shows private consumption relative to household disposable income adjusted for extraordinary tax from the restructuring of capital pensions. The investment ratio shows business investments as a ratio of GVA in the private sector excluding housing.

Source: Own calculations using Denmark's Nationalbank's macroeconomic model, MONA.

**Current account broken down by balance of goods and services, investment income and other items**

Chart 3



Note: Net figures. "Other" covers EU payments and development aid, among other payments.

Source: Statistics Denmark and own calculations.

weakens. Over time, weak competitiveness will reduce exports and exert downward pressure on output and employment. This will reduce domestic wages, thereby strengthening competitiveness, while at the same time weak domestic demand dampens domestic investment, resulting in improvement of the current account. At present, Denmark's competitiveness is good, and there is

scope for slightly higher wage increases in the coming years, as labour market pressures intensify. Competitiveness problems cannot be structural in nature, since the economy will adapt over time, although it may take time.

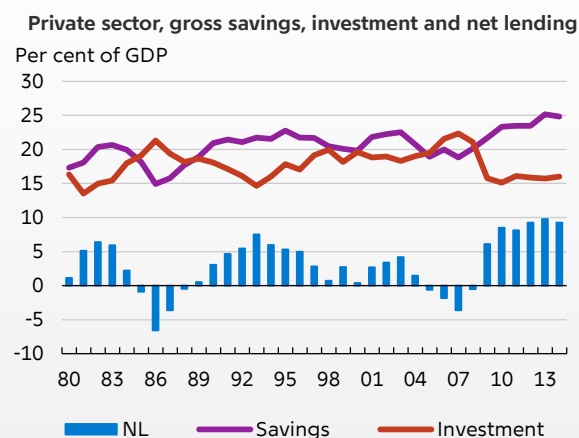
**THE TAX SYSTEM, DEMOGRAPHICS AND LABOUR MARKET PENSIONS HAVE INCREASED PRIVATE SECTOR SAVINGS**

The current account surplus is attributable to a large private sector savings surplus, i.e. it is the result of many decentralised decisions. In 2014, the private sector savings surplus was around 9 per cent of GDP, adjusted for early taxation of capital pensions. It has shown a slightly increasing trend since the 1980s, cf. Chart 4 (left). This development has been driven by firms in particular, while the savings surplus of households has fluctuated around a consistently low level. However, since it is difficult to break down the private sector savings surplus by households and firms, cf. Box 2, the focus is on the private sector as a whole.

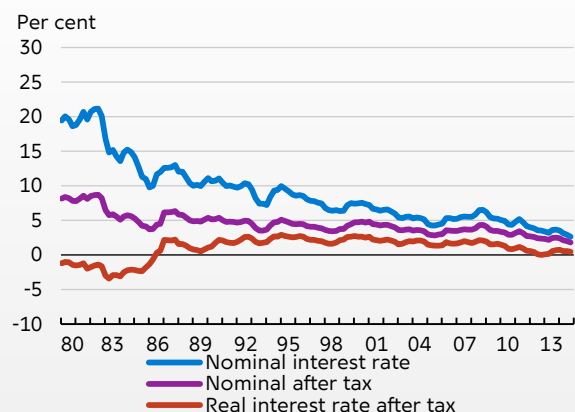
The strengthening of the private sector's propensity to save reflects, inter alia, a substantial reduction of the originally very high tax value of interest deductibility that began with the tax reform in the mid-1980s, followed by further reductions, cf. Chart 4 (right). The lower value of

**Private sector net lending and interest rate development**

Chart 4



**Interest rate development, nominal and real, before and after tax**



Note: Left-hand chart: NL is net lending. Investment includes inventory investment. Differences between NL and savings less investment are capital transfers and net acquisition of non-financial, non-manufactured assets. Savings and NL have been adjusted for early taxation of capital pensions in 2013 and 2014.

Source: Statistics Denmark, Danmarks Nationalbank, Macrobond and own calculations.

interest deductibility has made it more attractive to save and contributed to boosting the structural level of private sector savings during the 1980s. At present, given the very low inflation and level of nominal interest rates, the reduced interest deductibility plays a smaller role than previously. Another driver of increasing savings has been the demographic development with large cohorts who have saved while in employment – especially in the latter part of their working life, experience shows. But large cohorts are retiring these years

and are being replaced by smaller, younger cohorts.

Since the early 1990s, the social partners have concluded agreements on contributions to labour market pensions in order to ensure higher income for pensioners than state old age pension alone. In the build-up phase, contributions exceed pay-outs, cf. Chart 5 (left). However, larger contributions to labour market pensions prompt some households to reduce other savings or raise debt. Consequently, a contribution of one krone to a

### Breakdown of net lending in the private non-financial sector by households and firms

Box 2

Since households own a substantial part of Danish firms, they can save up in these firms. This makes it difficult to distinguish between net lending by households and firms. Instead, it makes sense to consider the two sectors as one.

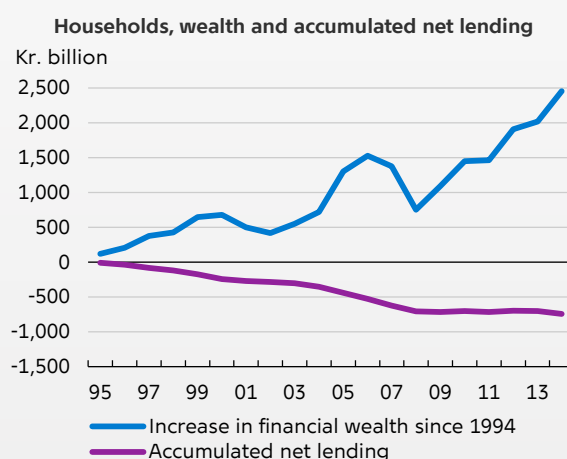
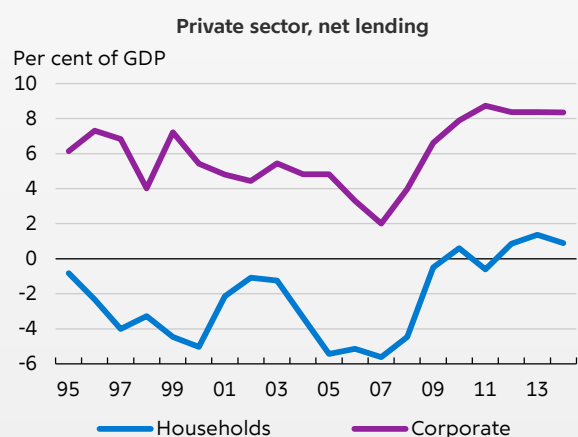
According to the national accounts, household net lending has averaged -2.3 per cent of GDP annually since the mid-1990s, while corporate net lending has been 5.9 per cent of GDP, cf. the chart below (left). Household net lending is the difference between income after tax and expenses for consumption and investment. Part of the income is investment income. But how to determine this is not so simple.

A firm's profit is not necessarily distributed as dividend. Instead, the owners may choose to retain the firm's profit or pay out the profit as buy-back of own equities. The owners' choice of profit disbursement method depends on tax-related factors, inter alia. If the owner – e.g. a household – opts for saving up in the firm, no disbursement is made from the

firm to the household, which obtains a capital gain instead, since the profit after dividend increases the value of the firm. If the profit is disbursed as buy-back of own equities, this is registered in the national accounts as sale of part of the owner's wealth and not as a disbursement from the firm to the owner. All in all, the calculation of household investment income in the national accounts may entail underestimation of actual household gross savings and overestimation of corporate gross savings.<sup>1</sup>

Considering only household net lending in the national accounts, households have accumulated net debt since 1995 amounting to kr. 740 billion, cf. the chart below (right). But over the same period, their financial wealth has grown by more than kr. 2,450 billion, implying capital gains of approximately kr. 3,190 billion. Some of these capital gains reflect that the owners of the firms, including households, have chosen to retain the profit in the firms.

### Net lending, wealth development and accumulated net lending by households

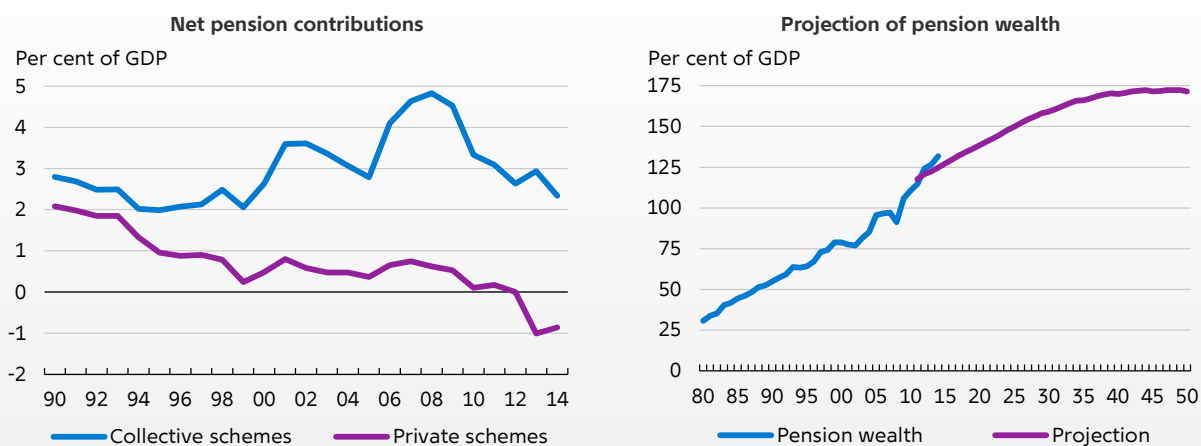


Anm.: Left-hand chart: Household net lending has been adjusted for early taxation of capital pensions in 2013 and 2014. Right-hand chart: Accumulated net lending and change in net financial wealth  
 Kilde: Statistics Denmark and own calculations.

1. The calculation of savings in the national accounts is different for Danish firms owned by non-residents. Non-disbursed profit is registered as investment income to non-residents via the reinvested earnings item. As a result of this and other factors, changes in foreign assets over time tend to follow the accumulated balance of payments, cf. Chart 1.

## Net pension contributions and development in household pension wealth

Chart 5



Note: Left-hand chart: Net contributions are the difference between contributions including pension yield less taxes and pay-outs. Adjusted for early taxation of capital pensions. Right-hand chart: Pension wealth is the private sector's total pension wealth, i.e. both private and collective schemes. The projection of pension wealth as a share of GDP is DREAM's structural pension wealth relative to structural GDP. The structural and actual ratios diverge in 2011-14, since the actual ratio is influenced by cyclical factors.

Source: ADAM, Danmarks Nationalbank and own calculations. DREAM – Long-term economic projection, 16 November 2015.

labour market pension scheme does not increase total household savings by one krone. Studies based on individual data show that an extra labour market contribution of one krone increases total household savings by around kr. 0.70-0.85, cf. Danish Economic Councils (2008). Contributions to private pension schemes have a smaller effect on household savings.<sup>3</sup> Pension contributions are tax deductible at pay-in, which reduces tax revenue, thereby reducing public sector savings. Hence, the increase will be lower for public and private sector savings taken as one than that for household savings viewed in isolation.

Labour market pensions are still in the build-up phase and will remain so for the next 25-30 years. Pension wealth is expected to peak at around 170 per cent of GDP in 2040-50, cf. Chart 5 (right). However, the pace of pension wealth accumulation is declining, and in future this will slowly lead to lower structural savings and hence a smaller current account surplus.

The tax system may influence savings incentives. Taxation depends on the type of savings, i.e. pen-

sion savings, other financial savings or home equity savings. Furthermore, the size of both wealth and investment income may entail reduction of public benefits. This leads to substantial differences in composite taxation of returns across individuals and types of savings, cf. Danish Economic Councils (2008).<sup>4</sup> Thus, it is not clear whether the tax system overall provides a savings incentive.

Nor is it clear whether oil and gas extraction in the North Sea has contributed to increasing private sector savings, since this revenue influences and is driven by both consumption and investment. In addition, foreign firms account for a large part of the extraction. Hence, some of the profit from oil and gas production goes to these firms, which repatriate part of it in the form of dividend payments; viewed in isolation this reduces the current account surplus. For a number of years, dividend payments were kr. 8-10 billion p.a., but they have declined to a somewhat lower level in recent years.

The large private sector savings surplus is the result of many decentralised decisions. Labour

3 The effect of pension savings on total household savings varies with age and status as homeowner or tenant. Andersen (2015) estimates that a contribution of one krone to a private pension scheme increases total household savings by around kr. 0.20. The smaller effect from private pension schemes compared with labour market pensions is due mainly to the fact that contributions are voluntary.

4 The composite yield taxation is defined as the total effect of taxation of yields and reduction of public benefits.

market pensions are voluntary agreements concluded by the social partners, and it is difficult to point out distorting factors in e.g. the tax system which overall entail higher private sector savings. Moreover, households and firms in Denmark have ample opportunity to optimise their consumption and investment decisions. For example, Denmark has a very well-developed financial system which offers households and firms savings or borrowing opportunities. This enables them to plan their savings, consumption and investment over time more or less as they wish. So it is not advisable to try to reduce the current account surplus by seeking to offset the private sector savings surplus by large government deficits.

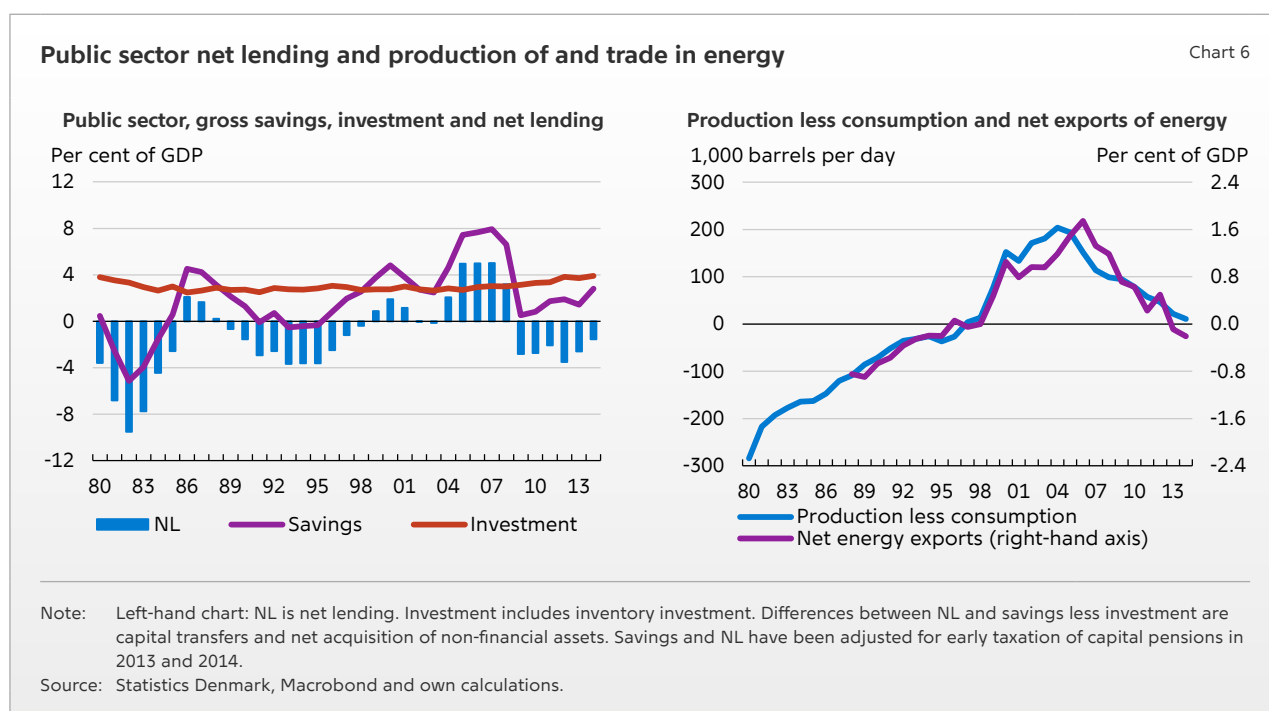
### HEALTHY AND SUSTAINABLE PUBLIC FINANCES

The public sector had substantial deficits in the early 1980s, cf. Chart 6 (left). However, since the late 1990s, the focus has been on fiscal policy planning to ensure sustainability, which has contributed to increasing public sector savings by around 5 per cent of GDP from the early 1980s to the late 1990s. Fiscal sustainability considerations and the wish to smooth out public expenditure mean that large, but temporary, revenue will only to a minor degree entail higher public consumption or tax relief. Instead it will to a higher degree be used for savings. A case in point is government revenue from oil and gas extraction.

Denmark has extracted oil and gas for many years, and the energy account of the balance of payments has shown a surplus since 1997, cf. Chart 6 (right). Extraction has fallen over the last decade, and Denmark's energy trade almost balanced in 2014. But the production reduces the need for energy imports.

Oil and gas production is taxable, and according to the Danish Energy Agency the government's share of the proceeds is estimated at around 60 per cent in 2014. In the period 1963-2014 the tax revenue amounted to kr. 404 billion in 2014 prices, corresponding to 21 per cent of GDP in 2014, concentrated in the latter part of the period. Given the objective of fiscal sustainability, a share of government revenue from oil has probably been saved, thereby contributing to the reduction of central government debt from more than 50 per cent of GDP in the mid-1990s to just 11 per cent of GDP in 2008. Since then, the downturn in the wake of the financial crisis and the resultant government deficit have increased government debt, which was approximately 24 per cent of GDP at the end of 2014.

Combined with the low level of interest rates, the lower government debt has in itself contributed to improving public finances, resulting in a rise in public net investment income from -5 per cent of GDP in the mid-1980s to a positive figure today, including public funds.



## IS THE CURRENT ACCOUNT SURPLUS A PROBLEM?

### IT MAY MAKE SENSE TO HAVE A SURPLUS

A current account surplus does not necessarily reflect imbalances in the economy. A surplus is a way of postponing consumption until later. This makes sense in a situation like Denmark's with an ageing population over the coming decades. Most advanced economies are facing population ageing over the coming decades, although to varying degrees.

Not all countries can have current account surpluses at the same time. One country's surplus is offset by other countries' deficits. A distinguishing feature of Denmark compared with other countries is that we have chosen to fund part of the future pension expenditure via savings – while also adjusting the retirement age to match life expectancy. This is done via private pensions, labour market pensions and public savings. Many other countries have to fund future pensions primarily out of future current public revenue, i.e. future taxation of people in the labour market. Denmark focuses on ensuring fiscal sustainability so that there will be no need to raise taxes in future to cover current expenditure for e.g. public pensions and healthcare. As a result of this and other factors, Denmark's public finances are, on average, healthier than those of other countries.

Moreover, it is natural for relatively prosperous countries like Denmark and several other Northern European countries to have current account surpluses, while countries in e.g. Southern and Eastern Europe, with a smaller capital stock and greater growth potential ("catching-up effect"), have deficits. These countries need foreign capital in order to develop their economies and realise their growth potential. But it is also important that countries with current account deficits do not accumulate too much foreign debt. Debt must be sustainable, or non-resident investors may lose confidence in the country, which may then find it more difficult to finance the deficit.

However, countries which are growing may have a permanent current account surplus or

deficit. So a surplus or deficit for a long period does not necessarily reflect an unsustainable development. But this requires adjustment of the balance of payments composition, i.e. investment income and other accounts. For example, if Denmark's current account surplus is assumed to be permanent at 5 per cent of GDP, net foreign assets will converge towards 130 per cent of GDP, given nominal growth of 4 per cent.<sup>5</sup> If the nominal return on net foreign assets is then assumed to be 5 per cent, investment income alone will be 6.5 per cent of GDP ( $130 \times 5 / 100$ ). This requires a permanent level of the balance of goods and services and transfers of -1.5 per cent of GDP to maintain a current account surplus of 5 per cent. A sustainable development with large net foreign assets thus tends to require a smaller surplus on the balance of goods and services.

Net foreign assets may act as a buffer reducing the risk of sudden large capital outflows. Moreover, they can contribute to ensuring a low interest rate spread to the euro area, cf. below. However, building up large foreign assets also entails a credit risk. A debt servicing problem for a country with a permanent current account deficit and large foreign debt will, of course, also be a problem for creditor countries like Denmark, which risk losing part of their foreign assets.

Furthermore, large foreign assets imply exposure to interest rate developments and to equity prices and exchange rates, and the ability to make the right choices when investing the funds becomes important. In Denmark's case, such placement decisions are made on a decentralised basis by the individual firms and pension funds, as opposed to countries like Norway, where most foreign assets are concentrated in the Government Pension Fund. As regards Denmark, non-resident investors hold a large part of Danish mortgage and government bonds, currently with low returns, while Danish investors have placed funds in foreign assets subject to higher risk and hence a larger expected return. In 2014, net assets of around kr. 860 billion thus yielded net investment income of just under kr. 75 billion, resulting in an implicit return of approximately 8.5 per cent. The high

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<sup>5</sup> If the surplus is  $x$  per cent of BNP and nominal growth is  $y$  per cent, foreign assets will converge at  $x \times (1+y)/y$ , e.g.  $(0.05 \times (1+0.04)/0.04) \times 100 = 130$  per cent of GDP.



return partially reflects that Danes have built up very large gross balance sheets, i.e. substantial assets abroad and large foreign debt at the same time. Special focus has been on the large gross debt of households, which could increase their interest rate sensitivity and hence lead to more pronounced macroeconomic fluctuations. It may therefore be economically desirable to reduce gross debt, especially for households, but this may lead to an even larger current account surplus, cf. Box 3.

## THE RETURN ON FOREIGN ASSETS HAS A LAGGED EFFECT ON THE DANISH ECONOMY

Direct household ownership of foreign assets is limited, so households' share of the return on net foreign assets is small in the first instance. This entails limited immediate effects on private consumption.

The return on net foreign assets goes mainly to large firms, pension funds and investment funds. This could perhaps boost investment in real capital to some extent, but in general investment is

### Reduction of Danish households' large gross debt may lead to an even larger current account surplus

Box 3

Over a number of years, Danish firms and households have accumulated both considerable gross debt and substantial gross wealth. This is also reflected in debt and wealth vis-à-vis non-residents. In gross terms Danish residents' assets abroad and non-residents' assets in Denmark have both increased strongly, cf. the chart below (left). At the end of the 2nd quarter of 2015, Danish residents held assets abroad for kr. 6,070 billion, while non-residents held Danish assets amounting to kr. 5,210 billion. Consequently, Danish residents held net foreign assets of kr. 860 billion, or around 43 per cent of GDP.

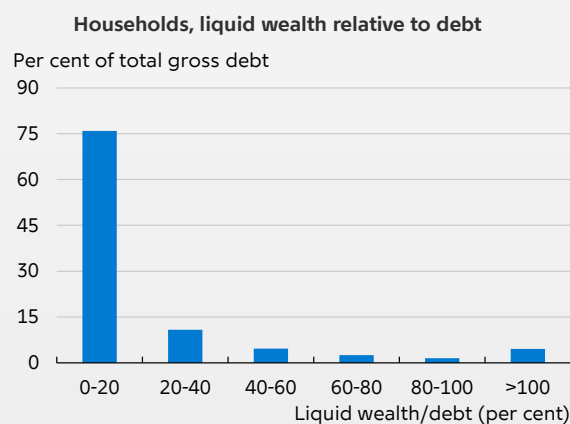
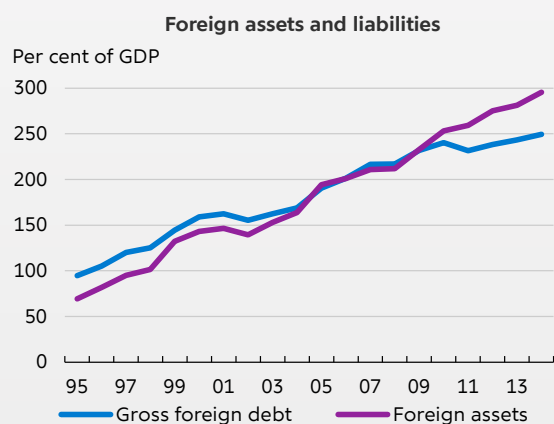
Observers of the Danish economy have focused extensively on the high gross debt of households in particular. However, it is difficult to envisage a reduction of gross debt – domestic or international – without a derived effect on the balance of payments, resulting in an even larger surplus.

Given the considerable net wealth of households, they could, in principle reduce their debt by divesting some of their assets, but this possibility is very limited in practice. A large share of household wealth is placed in pension schemes and housing, which cannot be sold immediately. Households have bank deposits for approximately kr.

600 billion and securities amounting to around kr. 1,700 billion. However, half of these are equity securities issued by firms fully owned by households, such as small craftsman's businesses, shops, dentists, etc. These assets are not easy to liquidate either. The remainder of the securities portfolio is held by a relatively small number of households. Most households thus have modest liquid wealth relative to their gross debt. The predominant share of total gross debt, around 75 per cent, is held by households with liquid wealth (bank deposits and securities in safe custody accounts) constituting less than 20 per cent of their gross debt, cf. the chart below (right). Overall, households thus have only limited opportunities to reduce their debt by divesting assets.

The large household gross debt reflects factors such as leveraged accumulation of wealth, especially in housing, but to a certain extent also in pensions and free financial wealth, cf. Isaksen et al. (2011). More symmetrical taxation of debt and wealth would give households less incentive to inflate their balance sheets. Alternatively, they may reduce debt through current savings, but higher savings easily lead to an even larger current account surplus.

### Danes' assets and liabilities vis-à-vis non-residents and liquid wealth relative to debt



Source: Danmarks Nationalbank, Statistics Denmark and own calculations.

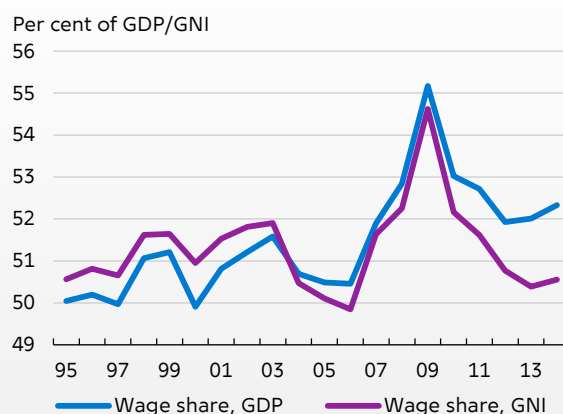
driven predominantly by demand in the economy. Part of this income is channelled on as dividend payments, but it is still only a limited share that goes to households, since many of the largest Danish firms are owned by foundations or families, cf. box 4. In addition, only very few wealthy households are shareholders on a large scale.

A share of the rising net investment income from foreign assets goes to the public sector via government debt reduction and resultant lower interest expenses. This improves fiscal sustainability.

Investment income from abroad is channelled on to household finances partly via pension wealth and hence higher pension pay-outs in the longer run, partly via higher wage increases. Experience shows that in the long run, wages account for a relatively constant share of the gross national product, GNP, in the economy, cf. Chart 7. A rise in GNP via the return on foreign assets leaves scope for higher wages.

Wage shares

Chart 7



Note: GDP stands for gross domestic product and GNI for gross national income.

Source: Statistics Denmark and Danmarks Nationalbank.

### The largest Danish firms

Box 4

The largest Danish firms are predominantly owned by families or foundations, cf. the table. Consequently, the profit after tax is initially only to a limited extent channelled on to households in a broad sense. Conversely, corporate tax paid

contributes to financing public expenditure more broadly, as is the case for income taxation of the firms' employees in Denmark, and other direct and indirect taxes paid.

### Largest Danish firms by operating profit in 2014

	Name	Type	Operating profit (kr. billion)	Equity capital, book value (kr. billion)	Equity capital, market value, end-2014 (kr. billion)	Total no. of employees (thousands)
1	A.P. Møller - Mærsk	Foundation	29	259	273	89
2	Novo Nordisk	Foundation	26	40	677	40
3	LEGO	Foundation	7	13	--	13
4	Nordea Bank Danmark	Public	6	45	--	6
5	Carlsberg	Foundation	5	56	73	47
6	Danske Bank	Public	4	153	167	18
7	TDC	Public	3	19	38	9
8	Pandora	Public	3	7	61	10
9	Jyske Bank	Public	3	28	30	3
10	Vestas Wind Systems	Public	3	18	50	18

Note: Foundation-dominated and family-owned firms are called "Foundation". Limited liability companies with more broad-based ownership are called "Public". Own breakdown.

Source: Børsen Analyse 2014 and Bloomberg.

From the mid-1990s to the mid-2000s, wage growth in industry was higher in Denmark than abroad. In the years leading up to the financial crisis in 2008, the capacity situation tightened as a result of overheating of the economy, driven by a leveraged housing bubble. Although the loss of wage competitiveness in those years has been regained, this pattern emphasises the importance of a steady process that is not forced.

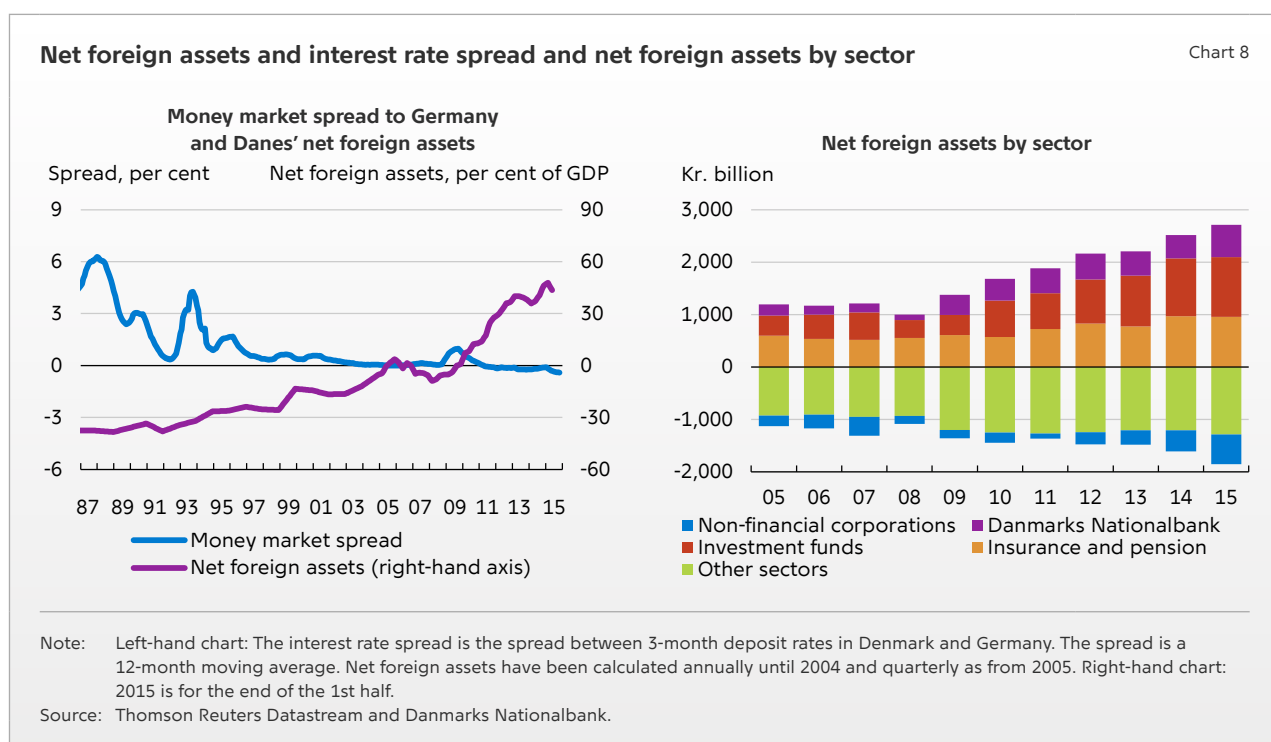
Moreover, since the mid-1990s Denmark's terms of trade have improved continuously, as Danish firms have been able to sell their goods and services at constantly rising prices, while also benefiting from the downward pressure on import prices. Not all surplus countries have seen an improvement in their terms of trade. The terms of trade have deteriorated in Sweden, which has substantial production of products subject to strong downward price pressures, e.g. electronics.

Investment income from abroad increases the national product, but not domestic output, GDP. Consequently, the share of wages in domestic output has been rising. The increasing share of wages in GDP corresponds to current internal revaluation and thus deterioration of competitiveness. This has taken place at a steady, measured pace, except in the period of overheating. In a fixed exchange regime like Denmark's, this is the way to adjust (excessively) good competitiveness.

## THE IMPORTANCE OF NET FOREIGN ASSETS TO INTEREST RATES AND FOREIGN EXCHANGE RESERVE

Denmark's current account surplus entails continuous capital exports, which has resulted in considerable net foreign assets, cf. Chart 8 (left). They are expected to rise further in the coming years. The assets are distributed on various sectors, and Denmark's total net foreign assets constitute the sum of net portfolios of foreign assets in all domestic sectors. Hence, net foreign assets are not a portfolio to be managed by an authority or an institution, which is the case for e.g. the central government debt or Danmarks Nationalbank's foreign exchange reserve. The individual households, investors, financial institutions and firms make their own investment choices.

In Denmark, three sectors in particular hold more foreign assets than liabilities, cf. Chart 8 (right). The insurance and pension sector holds net placements in foreign assets for approximately kr. 950 billion. This corresponds to slightly more than Denmark's entire net foreign assets. Investment funds also hold considerable foreign assets, since the holders of investment fund shares typically have a claim in kroner on the investment fund, while the fund may have invested the money in, say, foreign equities and



bonds. Finally, Danmarks Nationalbank holds considerable net foreign assets, reflecting that the foreign exchange reserve is placed in foreign currency, while the liabilities are in Danish kroner. Conversely, mortgage banks in particular hold net foreign liabilities. The reason is that many non-resident investors purchase Danish mortgage bonds.

### **NET FOREIGN ASSETS MAY HAVE REDUCED INTEREST RATES**

The increased net foreign assets have presumably contributed to reducing monetary policy interest rates in Denmark. This is because investors' investment choices are based on various factors, including expected return and the associated uncertainty, which potentially depends on the net foreign assets.

Until the mid-1990s, the interest rate spread between Denmark and Germany, expressed by the short-term money market interest rates, fluctuated strongly and was often several percentage points, cf. Chart 8 (left). In the subsequent period, until the outbreak of the financial crisis in 2008, the spread was very stable at a moderate positive level. After a temporary widening in connection with the financial crisis, the spread has been in negative territory for most of the time since 2012. This means that investors are currently willing to hold financial investments in Danish kroner, even though the return is a little lower than for investments in euro. The long-term interest rate spread between Denmark and Germany is positive, however.

### **INVESTORS OFTEN PREFER DOMESTIC ASSETS**

The interest rate spread is influenced by "preferred habitat" premiums. They reflect that some investors wish to invest in specific assets. For example, they often prefer assets in their own currency. One possible reason could be the lower costs of data collection and current monitoring. Excess demand for certain assets will reduce the rate of interest on these assets via a preferred habitat premium.

The increase in net foreign assets has led to a larger need to place funds among Danish investors. In so far as they prefer domestic assets, the demand for krone assets has thus risen. This generates payment flows that reduce the equilibrium spread.

In terms of willingness to restructure currency exposures, other factors also play a role, namely the sectors that hold the net foreign assets, and where current savings are to be found. A considerable share of savings is in pension wealth, which is expected to rise until 2040-50, whereby the sector's need to place funds will continue to grow. The size of the sector makes it difficult to place all funds in krone assets without a high concentration risk. The sector's liabilities are pension payments in Danish kroner, while around half of the assets are in foreign currencies. A part hereof has been hedged to kroner, cf. Chart 9 (left). Due to the pension sector's size, its placement decisions have a strong impact on conditions in the krone market. This became evident in early 2015, when this sector was behind a substantial share of the demand for kroner.

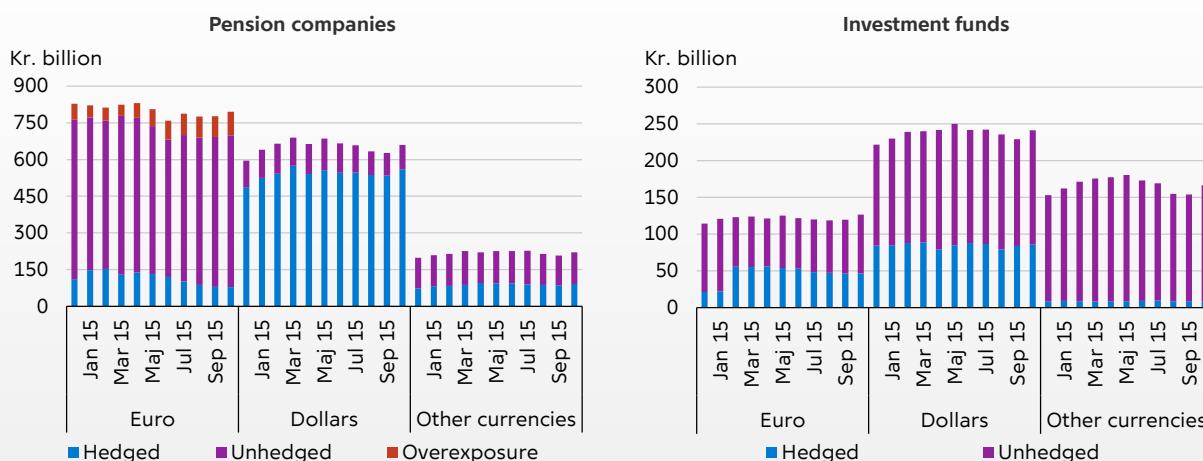
Investment funds also contributed to the demand for kroner, since this sector overall hedged a part of the exposure to euro, cf. Chart 9 (right). Both sectors continue to have very large exposures in euro and other currencies.

The accumulation of Danish net foreign assets is expected to be a long-term phenomenon. Consequently, there is reason to believe that the interest rate spread to the euro area will be narrower than in the years prior to the financial crisis. However, it is difficult to assess how large the interest rate spread to the euro area needs to be in order to balance Denmark's capital outflows and inflows. This will depend on several factors, such as confidence in the euro area, confidence in the krone rate and the Danish economy, as well as the general risk aversion and the extent of preferred habitat in the financial markets.

Recent years have been dominated by extraordinary events, including the sovereign debt crisis in a number of euro area member states, which induced some investors to use kroner as a "safe haven", cf. Jørgensen et al. (2013). Therefore, these years cannot be seen as a clear indicator of the situation in the longer term. Furthermore, the spread is currently positive for the longer-term forward interest rates, which reflects, however, that the ECB has pressed down the longer-term interest rates via its asset purchase programme. An equilibrium spread close to zero seems probable, meaning that in the long term, Danmarks Nationalbank's interest rates will be close to those of the ECB.

## Foreign exchange exposure and hedging

Chart 9



Note: Left-hand chart: Overexposure means the foreign exchange exposures – typically dollar positions – which have been hedged to euro, but not to kroner. This increases the euro exposure beyond the exposure associated with euro assets.

Source: Danmarks Nationalbank.

### FLUCTUATIONS IN NET FOREIGN ASSETS MAY INFLUENCE THE FOREIGN EXCHANGE RESERVE

The pressure on the krone in January-February 2015 reflected, inter alia, that a number of non-resident investors purchased kroner for large amounts. In that way they would reap a gain if the fixed exchange rate policy was abandoned and the krone appreciated against the euro, like the Swiss franc did. But another important factor behind the pressure on the krone was that various domestic investors, including parts of the insurance and pension sector, were less willing than previously to take on the exposure to fluctuations in the krone exchange rate that their investment portfolios entailed, viewed in isolation. This prompted them to increase their hedging, which strengthened the demand for kroner.

Non-resident investors have sold kroner in recent months, resulting in slightly lower portfolios of kroner assets than at the start of the year. Domestic investors have also sold kroner, but at a more sluggish pace, and in net terms they have not returned to the January level.

Prolonged shifts in the willingness of domestic investors to hold unhedged positions in euro may lead to prolonged fluctuations in the size of Danmarks Nationalbank's foreign exchange reserve. For long periods at a time, the reserve may become considerably larger than previously, and the

interest rate spread to the euro area may become lower or negative.

Danmarks Nationalbank's main purpose of holding the foreign exchange reserve is to support the krone, should it come under pressure. In the event of an excessive supply of kroner, which tends to weaken the krone against the euro, Danmarks Nationalbank will intervene in the market by buying kroner for foreign exchange from the reserve. The only objective for the size of the reserve is therefore that it should be sufficient. The need for sufficient funds for intervention in support of the krone at any time means that the foreign exchange reserve has been invested in liquid assets in euro that are stable in value. Hence, the return on the reserve is relatively stable, but low.

Purchase of foreign exchange for the foreign exchange reserve is typically offset by an increase in debt to the banks. This means that Danmarks Nationalbank's net capital is generally not affected even if the balance sheet is increased in step with the reserve. A larger foreign exchange reserve does not entail a need to change its risk profile.

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