Economic Commentaries



NO. 3, 2014

Swedish households' collective pension saving in the form of funded provisions within occupational and premium pensions amounts to almost SEK 2,400 billion. This saving forms a large and growing share of household assets. As such large amounts are allocated, the pension system can affect both households' incentives to save in other forms and their ability to do so. In this commentary, we suggest that both Swedish households and banks have a completely different situation today than from twenty years ago and that this could be partly connected to the pension system. For example, collective pension saving may be of great significance for household indebtedness and for the banks' market funding, but these connections should be investigated in more detail than in this commentary.

The significance of collective pension saving for the Swedish financial system

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Collective pension saving in the form of funded provisions within the occupational and premium pension systems amounts to almost SEK 2,400 billion in Sweden. Over the last 20 years, this capital has increased and currently forms about one-third of Swedish households' financial assets. The large scale of collective pension saving means that it can influence both Sweden's economy as a whole and the financial system in particular. In this economic commentary, we suggest that Swedish pension saving may be significant to household indebtedness and to the banks' wholesale funding and funding abroad. However, the connection between these quantities must be investigated in greater depth than is done in this commentary before any conclusions can be reached.

High collective pension saving may influence the financial system

According to Jansson (2014), there are many indications that the pension system reduces households' incentive to amortise their debts. In such case, collective pension saving could be one of the explanations, in addition to those discussed in Sveriges Riksbank (2014), for the increase in Swedish households' debts in relation to their disposable incomes from just over 90 per cent in the mid-90s to 174 per cent in 2013.² Such a conclusion would also be in line with Isaksen et al. (2011), who claim that the high level of indebtedness among Danish households can be explained by a high level of pension saving. However, this conclusion is not cut-and-dried – see, for example, Reiakvam and Solheim (2013).³

A situation in which collective pension saving leads employees to cut back on other saving and take on more debt is not without problems. Pension savings cannot be sold or pledged during periods when current incomes are not enough to cover the employee's needs. Consequently, employees do not have the same access to their occupational and premium pensions as they do to other saving, such as bank deposits. The pension saving, thus, creates buffers and reduces certain risks, but may, at the same time, entail increased risks in other areas.

Arnberg and Barslund (2014) find that pension saving leads to a reduction of other saving among Danish households.⁴ If the household sector's deposits with the banks do not increase at the same rate as the banks' lending to households, the banks will instead obtain funding by issuing securities (bonds and certificates) on the financial markets. Collective pension saving may thus be a contributory factor for the large

^{1.} The authors would like to thank Daniel Hansson and André Reslow for their help with statistics and diagrams used in the commentary. The authors would also like to thank Mikael Apel, Jill Billborn, Heidi Elmér, Mia Holmfeldt, Stefan Ingves, Kristian Jönsson, Björn Lagerwall, Marianne Nessén, Louise Oscarius, Göran Robertsson, Kasper Roszbach, Per Sonnerby and Marianne Sterner for their valuable comments. 2. Sveriges Riksbank (2014) presents various factors that could explain the strong rise in Swedish households' debt ratios, such as deregulation in the 1980s, low interest rates over a longer period of time, the taxation system and interest-only loans.

^{3.} As regards the results reported by Isaksen et al. (2011), Reiakvam and Solheim (2013) argue that differences in (above all private) pension capital in the Nordic countries are not a convincing explanation for the differences in household indebtedness observed. Consideration must also be taken of other factors, for example household confidence in the sustainability of public finances and the design of the pensions systems.

^{4.} On the other hand, the study reports that total saving, including pension saving, increases.



proportion of wholesale funding to deposits among the Swedish banks, including mortgage institutions, that are responsible for credit granting to Swedish households.⁵

Overall, Sweden has strengthened its net external position over the last 20 years, as the average current account surplus has been 6 per cent of GDP. Total lending in Sweden thereby exceeds the total borrowing requirement. At the same time, about half of the Swedish banks' wholesale funding is in foreign currency. A large part of this foreign funding is used to fund assets in foreign currency, but it is also used to fund assets in Swedish kronor, such as loans to Swedish households. Collective pension savings are primarily invested in funds or are managed by pension and insurance companies. Part of this capital is invested in securities issued by the Swedish banks, but part is invested in assets abroad. Part of the capital thus flows out of the Swedish financial system. One reason that the Swedish banks borrow abroad may thus be that households' pension saving takes place, to a certain extent, in assets in foreign currency.

The Swedish pension system – a brief outline⁶

The Swedish pension system is usually described as a pyramid, the base of which is formed by the national retirement pension. The next step of the pyramid is formed by the occupational pension, with the top being formed by private pension saving. In 2011, 27 per cent of the working age population of Sweden had private pension insurance (OECD (2013)). However, in this commentary, we do not examine private pensions in any more detail.

The national retirement pension is mainly formed of an income-based pension and the premium pension.⁷ The income-based pension is funded on a "pay-as-you-go" basis. This means that those in gainful employment pay the pensions of today's pensioners through their pension contributions and will have their own pensions paid for by subsequent generations. The AP funds (1-4 and 6) are buffer funds intended to even out fluctuations in pension contributions and pension payments in the income-based pension. Together, they have assets amounting to just over SEK 1,000 billion, which is almost double that of 2001. We do not examine the income-based pension or the AP funds in the rest of this commentary.

The premium pension is the part of the national retirement pension that individuals may invest themselves. Each year, an amount corresponding to 2.5 per cent of pre-tax wages is paid in to the premium pension up to the ceiling in the national retirement pension. This ceiling is currently SEK 426,750 in annual income (equivalent to SEK 35,563 per month). The premium pension capital is invested in investment funds that the employee chooses him- or herself.⁸

The occupational pension is a complementary pension agreed upon by trades unions and employers and which is thus not prescribed by law, unlike the premium pension.⁹ About 90 per cent of employees in Sweden pay into an occupational pension through their employer.¹⁰ The occupational pension fulfils two main important functions. It complements the national pension so that employees receive a greater proportion of their wages as pensions, and it takes over where the national retirement pension finishes, which is to say for incomes above the ceiling of the national retirement pension. The occupational pension therefore means that individuals with higher wages receive pensions corresponding to a larger proportion of their previous wages than the national retirement pension would give them.

^{5.} See Sveriges Riksbank (2014). The banks in Denmark, Norway and Finland also have comprehensive wholesale funding.

^{6.} See, for example, Møller and Nielsen (2011) for a more detailed description of the Swedish pension system.

^{7.} For the national retirement pension, the provision is 18.5 per cent of what is known as pensionable income. Pensionable income is primarily formed of earned income and payments from social and unemployment insurance schemes, up to a ceiling of 7.5 income base amounts. 16 per cent of pension contributions goes to the income-based pension and 2.5 per cent to the premium pension. There is also a guarantee pension, which is payable to pensioners who have had low or no incomes.

^{8.} If no active choice is made by the employee, the money are invested in AP7 Såfa.

^{9.} This commentary focuses on the part of the occupational pension that is the old-age pension. However, there are also frequently elements of compensation for sickness and death in collectively-agreed occupational pensions.

^{10.} All employers who have signed collective agreements may also accupational pension payments. Employers without collective agreements may also have equivalent pension plans for their employees.



The Swedish occupational pension system is fairly complex with many variations with differing forms. In addition, the occupational pension has been renegotiated several times over the years, which is why an employee's occupational pension depends on age, type of work and other factors. The occupational pension is either defined benefit pension, defined contribution pension or a combination of these. Defined benefit pension provides a predetermined (guaranteed) portion of final wage as a pension. In defined contribution pension, the employer continuously pays in a certain percentage of wages, with the amount received as pension by the employee depending on the size of these payments and the annual return.¹¹ This means that the employee bears a greater share of the risks of a defined contribution pension than of a defined benefit pension, in which the risk is largely borne by the employer. Occupational pensions are decreasingly defined benefit and increasingly defined contribution.

Occupational pension capital is primarily managed by pension and insurance companies (including pension funds) such as Alecta, AMF, Folksam, Skandia, Kåpan and SPP.¹² The insurance and pension companies invest in various financial assets, primarily equities and bonds, including significant amounts in bonds issued by the Swedish banks. However, a certain amount of funds from occupational pensions flows out of Sweden, as the companies also invest in assets in foreign currency to spread the risks.

Collective pension saving is important for each individual

To give an idea of the importance of collective pension saving for an individual, we present here an example of how large the payments to this can be over one year. Figure 1 shows the monthly payments to the premium pension and defined contribution occupational pension for officials born 1979 or later.¹³ A middle-income earner with a pre-tax income of about SEK 25,000 per month in 2014 would have over SEK 1,000 allocated to his or her occupational pension per month.¹⁴ In addition to this, SEK 625 per month would be allocated to the premium pension.

For higher incomes, the amount paid in to the occupational pension rises more rapidly as it then has to compensate for the ceiling placed on the national retirement pension. For a monthly wage of SEK 50,000, just under SEK 6,000 per month is paid into the occupational pension in 2014 (see Figure 1). If the premium pension is also included, the amount increases by almost SEK 900 per month.¹⁵ If these payments are made over a number of years, they can quickly amount to comparatively large amounts. For example, if payments from an initial monthly wage of SEK 50,000 increase by 2 per cent annually (due to wage increases) and the annual return is 3 per cent, the pension capital will amount to over SEK 1.1 million after ten years.

To get a more tangible feeling for the size of the provisions to collective pension saving, it may help to compare these with the amount needed to amortise a loan of SEK 2 million. A loan of this size can be repaid in 50 years through monthly repayments of just over SEK 3,300 kronor, in addition to interest payments on the debt. This is thus roughly as much as provisions to the occupational and premium pension systems for a household with two middle-income earners. Collective pension saving can therefore be assumed to be relatively large for many households, for example in relation to how much they amortise their mortgages.¹⁶ However, there are large differences between employees as regards how much pension capital they have,

^{11.} The return primarily depends on the development of the financial markets. However, if the pension is defined contribution, an employee can often choose to invest in a product for which the pension and insurance companies promise a guaranteed return on saved capital. 12. With a defined benefit pension, the deposited amount is either managed by a predetermined pension and insurance company, entered as a liability in the company's balance sheet or allocated to a pension trust. With a defined contribution pension, an employee can choose between several preselected pension and insurance companies.

^{13.} This example is based on the applicable terms and conditions for ITP 1. The premium in ITP 1 corresponds to 4.5 per cent of gross wages up to 7.5 income base amounts. If wages exceed 7.5 income base amounts, the premium for the part in excess is 30 per cent. The income base amount is SEK 56,900 (per year) for the income year 2014, which means that, for that part of wages exceeding SEK 35,563, the premium is 30 per cent.

^{14.} The average earned income for employees in the age group 20-64 was SEK 25,211 per month in 2012, according to Statistics Sweden. In addition to earned income, income from pensions, sickness benefit and other taxable compensation from the Swedish Social Insurance Agency is also included.

^{15.} For incomes of up to a monthly income of SEK 35,563, the premium is 2.5 per cent of wages. Incomes above the ceiling do not affect the premium pension, which is why the premium for 2014 amounts to a maximum of SEK 889 per month.

^{16.} In Winstrand and Ölcer (2014), repayments of mortgages by Swedish mortgage holders correspond to an average amortisation period of 99 years.



as this depends on income and the number of years of earned occupational pension. Consequently, determining in more detail how collective pension saving affects households' financial positions and risks would require studying these effects at the individual level in the same way as Winstrand and Ölcer (2014) do for household indebtedness.

Households' collective pension capital has grown in relation to other assets

To gain an idea of households' total collective pension savings, we use statistics taken from Statistics Sweden's Savings barometer.¹⁷ In total, households' financial assets have increased from just under SEK 2,000 billion in 1996 to SEK 7,200 billion in 2013 – see Figure 2.¹⁸ At the same time, occupational pension capital has increased from SEK 320 billion to SEK 1,710 billion. In addition, households' assets in the premium pension system over the same period have increased from SEK 20 billion to SEK 650 billion. The collective pension capital in 2013 thus amounted to almost SEK 2,400 billion, corresponding to about two-thirds of Sweden's GDP. Collective pension saving is thus significant on an aggregated level and its significance for households has increased over the last 20 years.

Since the mid-1990s until the present, equities, (investment) funds and bonds have formed about one-third of households' assets. During this period, collective pension saving has overtaken bank deposits as a share of households' assets.¹⁹ At present, occupational pensions make up about one-quarter of households' total financial assets, while households' assets within the premium pension system form almost 10 per cent. Household deposits in banks as a percentage of total financial assets have amounted to about 20 per cent since the mid-1990s. Households' individual insurance saving as a percentage of total financial assets has decreased slightly to just over 10 per cent by 2013. One possible contributory factor for the decrease of individual insurance saving is that it has been adjusted to the increase of assets within collective pension saving over the same period.

Collective pension saving and the Swedish banks' wholesale funding

At the same time as Swedish households, in total, have increased their saving, they have also borrowed increasing amounts. Swedish households' loans from Swedish banks increased from SEK 800 billion in 1996 to SEK 2,900 billion in 2013 – see Figure 3.²⁰ Over the same period, households' deposits in the banks have increased from just under SEK 500 billion to around SEK 1,300 billion.²¹ That deposits have not increased at the same rate as lending to households is reflected by an increase in the Swedish banks' wholesale funding in the form of bonds and certificates from just over SEK 1,000 billion at the end of the 1990s to almost SEK 3,700 billion in 2013.²²

Comparing the banks' deposits from and lending to households allows us to estimate the banks' funding gap towards the household sector. In Figure 4, the yellow area indicates the difference between the banks' deposits from households and the banks'

^{17.} In Statistics Sweden's Savings barometer, we use the item Collective insurance saving, broken down into occupational pension and premium pension, as our estimate of the amount of collective pension saving. However, this statistic is not comprehensive. For example, defined benefit occupational pensions from municipalities and county councils that have not been reserved are not included. These amount to about SEK 400 billion (SKL (2011)).

^{18.} In this commentary, we do not consider households' real assets in the form of single-family dwellings, second homes and tenant-owned apartments, or financial assets and liabilities for non-profit institutions serving households. Statistics Sweden does not publish statistics for households' real assets, apart from households' holdings of tenant-owned apartments, which are defined as a financial asset in the Financial Accounts. According to Sveriges Riksbank (2013), households' holdings of real assets in 2011 were somewhat smaller than their holdings of financial assets.

This commentary uses the term "banks" as a synonym for credit institutions, which includes mortgage institutions and other credit market companies performing similar tasks as the banks. The statistics reported for "banks" refer to Monetary Financial Institutions (MFIs).
 Households also have study-loan debts, tax debts and other debts. If these are also included, total liabilities amount to SEK 3,300 billion.

^{21.} In Figure 3, the green line shows the same data on household bank deposits as the green column in Figure 2. The red line in Figure 3 shows households' collective pension capital as the sum of occupational and premium pensions (the red and blue columns) in Figure 2.22. Subordinated debentures can also be seen as wholesale funding. If these are also included, the total wholesale funding increases by about SEK 140 billion for 2013, the majority of it in foreign currency.



lending to households (the green and yellow lines in Figure 3). It can be seen that this deficit corresponds approximately to the accumulation of collective pension saving. This is a sign that collective pension saving may form part of the explanation of the banks' funding deficit towards Swedish households and the banks' increased wholesale funding. However, wholesale funding has also been driven by other factors, such as increasingly interconnected financial markets and the banks' increased overseas operations.²³

Collective pension saving has thus increased in significance, at the same time as households' deposits in banks have decreased relatively and the banks' wholesale funding has increased. This is outlined in Figure 5, in which we present the data discussed above. The figure shows how some of the financial balances between four sectors – households, banks, pension and insurance companies and abroad – have changed between 1996 and 2013. In the figure, we present the different balance sheet values in relation to households' disposable income for each year. In relation to disposable income, households' collective pension capital has increased from 36 per cent in 1996 to 125 per cent in 2013, which is to say by 89 percentage points.²⁴ Households' bank deposits have increased from 46 per cent of disposable income in 1996 to 71 per cent in 2013. At the same time, household loans from the banking sector have increased from 84 per cent of disposable income to 154 per cent.²⁵ The banks' deficit towards households (lending minus deposits) has thus increased by 45 percentage points.

As Figure 5 also shows, both pension and insurance companies and foreign investors have also increased their investments in certificates and bonds issued by the banks, which has contributed towards funding the banks' deposit deficits.²⁶ The increase by foreign investors is also due to the Swedish banking groups' increased operations abroad, among other reasons. The increased foreign funding is thus not solely due to the deposit deficit from Swedish households.²⁷ It should also be pointed out that Figure 5 does not give a complete view of all flows. For example, it does not show investments by households and pension and insurance companies in funds, which in turn invest in securities issued by the Swedish banks and participants abroad.²⁸ Among other reasons, this is because the statistics on holders of Swedish issued securities have limitations.²⁹

The influence of collective pension saving on the financial system should be investigated in more detail

In this commentary, we have wanted to emphasise the role that collective pension saving may have in the Swedish financial system. Provisions within the occupational and premium pension systems can influence both households' incentive to save in other forms (as this capital provides protection during retirement) and their ability to do so (as a proportion of companies' wage costs are not paid out to households).

This can be illustrated with a simple calculation. Since 1996, households' assets in the form of collective pension saving in relation to disposable income have increased by 89 percentage points. At the same time, households' bank loans have increased by 70 percentage points. The debt burden could thus have been considerably smaller if

^{23.} See Sveriges Riksbank (2014) for a more detailed discussion of the reasons behind Swedish banks' comprehensive wholesale funding.
24. In addition to increasing the collective pension capital, Swedish households have increased their assets in the form of individual insurance saving in relation to disposable income from 33 per cent in 1996 to 45 per cent in 2013.

^{25.} The debt ratio of 174 per cent of disposable income mentioned in the introduction also includes households' study-loan debts, nonprofit institutions serving households and others. See also Winstrand and Ölcer (2014) for a discussion of different debt measures based on aggregated data and individual data.

^{26.} Pension and insurance companies are also significant owners of equities issued by banks. For example, Folksam owns just over 9 per cent of the equities in Swedbank. In Figure 5, we have chosen to separate flows related to the banks' wholesale funding via certificates and bonds. The pension and insurance companies' holdings of equities issued by banks and participants abroad, for example, are thus not included.

^{27.} One further reason for the banks to obtain funding abroad is that the banks want to broaden their investor base. Another is the increase by pension and insurance companies of their investments in assets in foreign currency to diversify their investment portfolios. See, for example, Hilander (2014) and Blåvarg (2013) for a more detailed discussion.

^{28.} Neither are households' investments abroad included in Figure 5. In addition, more than just occupational pensions are included in pension and insurance companies (property insurance for example), while branches and subsidiaries abroad are not included for banks.
29. The possibility of creating a database for holders of Swedish issued securities is presently being investigated by the Riksbank. On behalf of the Riksbank, Statistics Sweden has published monthly statistics for all issues of securities carried out by the Swedish public and private sectors in Sweden and abroad since 2013.



households had had the opportunity to use an amount corresponding to the collective provisions to pensions – after considering taxation consequences – to amortise more or to pay a larger portion of cash in housing purchases instead of raising loans from the banks.³⁰ Alternatively, the banks' wholesale funding could have been considerably smaller if the collective provisions to households' pensions had been used to make bank deposits instead of going to the pension and insurance companies. However, it is impossible to say how employees would have acted if they had been able to freely dispose of the amounts now allocated to collective pension saving. For example, they could instead have invested in equities or investment funds or have taken out private pension insurance policies.³¹

The overall picture is that households' debt accumulation is indirectly funded within Sweden by the partial diversion of savings through the pensions and insurance companies and in other countries (as is illustrated in Figure 5). This is probably also part of the explanation for the large extent to which the banks obtain funding abroad, but this need also arises from their operations abroad, among other things. Overall, Sweden is not increasing its debt burden in relation to other countries in net terms, as we have a surplus on the current account. On the other hand, the pension system affects how the balance sheets look in gross terms, and even risk-taking for both households and banks. These have a completely different financial situation than they did twenty years ago and this is probably connected with the development of collective pension saving and other factors.

On the one hand, collective pension saving may have contributed to a high level of total national saving (as reflected by the current account surplus, among other things). In addition, the pension system makes it possible to spread risks within the collective of employees. In this respect, the pension system contributes towards a more robust economy. On the other hand, collective pension saving may have led households to save less in other, more liquid assets and, additionally, to have increased their indebtedness. This can also entail risks, and the nature of these risks is also partly dependent on the design of the pension system.

The size and design of collective pension saving affects the risks faced by individuals in different ways. The fact that there is comprehensive pension saving reduces the risk that individuals will be unable to support themselves after the end of their working lives. At the same time, changes in the system, such as the transition to increasingly defined contribution occupational pensions, have meant that the risks inevitably existing are increasingly being borne by employees, rather than employers or society. If collective pension saving has led to reduced private saving and increased indebtedness, it may also have made households more sensitive to sudden losses of income and other shocks occurring both before and after retirement.

For the financial system as a whole, pension saving has also led Sweden to make longterm capital investments overseas at the same time as Swedish banks are obtaining a large part of their funding abroad, some of which is short-term. The pension system thus seems to have entailed reduced risks in some respects and increased risks in others. This does not mean that the pension system is the product of faulty logic, but the connection between these quantities – collective pension saving, the household debt burden and the banks' wholesale funding – should be investigated in more detail: What are the forces behind this development and what advantages and disadvantages do they have for individuals, financial stability and society as a whole?

^{30.} Provisions to collective pension saving are made with untaxed income, while pension payments are taxed. If employees were to receive higher wages instead of provisions to collective pension saving, their disposable incomes would thus be changed less than the provisions due to income tax.

^{31.} Jansson (2014) shows that, given actual returns on real and financial assets over the period 1997-2012, it has historically been more profitable for a Swedish household to save in funds than to amortise. However, this analysis does not capture how asset prices and other economic variables would have been affected by an alternative design of the pension systems.



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Note. Disability pensions and waiver of premium insurance are not included in these figures. Monthly wages refers to all pensionable income.

Sources: Collectum and Sveriges Riksbank



Note. Excluding holdings in tenant-owned apartments and financial assets for non-profit institutions serving households. The statistics reported for banks refer to Monetary Financial Institutions (MFIs).

Source: Statistics Sweden's Savings barometer



Figure 3. Households' collective pension capital, deposits in banks, loans from banks and the banks' wholesale funding, SEK billion



Note. The statistics reported for banks refer to Monetary Financial Institutions (MFIs). The banks' wholesale funding refers to bonds and certificates. Banks' subsidiaries registered abroad are not included in these figures.

Sources: Statistics Sweden's Savings barometer and the Financial Accounts.



Figure 4. Households' occupational pension and premium pension capital, and the banks' funding deficit, SEK billion

Note. The banks' funding deficit is calculated as deposits from households minus lending to households. The statistics reported for banks refer to Monetary Financial Institutions (MFIs).

Sources: Statistics Sweden's Savings barometer and the Financial Accounts, and Sveriges Riksbank



1996



Note. The arrow refers to the direction of the flow. The size of the arrow indicates the size of the asset holding and the percentage indicates the assets in relation to households' total disposable income. Pension and insurance companies include not only assets linked to the pension systems but also property insurance, for example. For the banks, branches and subsidiaries abroad are not included. The statistics reported for banks refer to Monetary Financial Institutions (MFIs). The household sector's disposable income in 1996 amounted to SEK 993 billion. In 2013 it amounted to SEK 1,882 billion.

Sources: Statistics Sweden's Savings barometer and the Financial Accounts, and Sveriges Riksbank