

# DANMARKS NATIONALBANK

10 DECEMBER 2019

INSURANCE AND PENSION, 2019

## New quarterly insurance and pension sector statistics



Denmark's I&P sector  
is among  
the world's largest

**213 per cent**

of Denmark's GDP was what the I&P  
companies' balance sheets amounted  
to at the end of the 3rd quarter of 2019.



Average rate products  
still account for  
the largest share

**64 per cent**

of provisions are for average rate  
products. New pension schemes are  
primarily market rate products.



Look-through of  
investments in Danish  
investment funds

**28 per cent**

of the I&P sector's funds have been  
placed in investment funds, which in  
turn invest in shares, bonds, etc.



I&P companies  
hedge interest rate  
and currency risk

**72 per cent**

of the I&P sector's dollar exposure  
is hedged. The sector mainly uses  
derivative contracts for hedging.

## New insurance and pension sector statistics

The Danish insurance and pension (I&P) sector manages a large share of the Danes' wealth and is consequently a major participant in the financial markets. The aggregate value of I&P companies' balance sheets was more than 200 per cent of Denmark's GDP at the end of the 3rd quarter of 2019. This means that they are among the largest in the world relative to the size of the economy.<sup>1</sup>

Since the insurance and pension sector plays an increasing role in the Danish economy, Danmarks Nationalbank is introducing new quarterly statistics for this sector, see Box 1. The statistics will be published at Danmarks Nationalbank's website and in Statistics Denmark's Statbank.

The statistics comprise the sector's total balance sheet broken down by assets and liabilities. The sector's investments are broken down by country and currency, with the option to look through stocks in Danish investment funds. Returns on sector investments are also shown. Liabilities are specified by provision type. Finally, the statistics will also include the sector's currency exposure and hedging. The new statistics will include data from January 2018 onwards.

The following pages will elaborate on the various aspects of the statistical tables and how to use them. For a more detailed review of the statistics, see "Sources and method" (click here).

### Industries included in the statistics

Box 1

The statistics include life insurance companies, pension funds and general insurance companies.

Some **life insurance companies** are owned by their members, while others are owned by investors.

The commercial companies offer individual pension schemes as well as labour-market schemes based on each firm choosing a pension provider for its employees.

Some life insurance companies are non-commercial companies in which membership, and hence the pension scheme, is compulsory, typically regulated by a collective agreement.

**Pension funds** comprise multi-employer occupational pension funds (including ATP) and company pension funds.

Multi-employer occupational pension funds typically include members of a certain professional group, irrespective of which firm they are employed by. A multi-employer occupational pension fund is owned by its members.

A company pension fund covers employees of one particular firm. Nearly all company pension funds have now stopped accepting new business and are gradually being wound up.

**General insurance companies** conduct insurance activities with a view to covering financial losses when an event defined in the insurance agreement occurs. The statistics are not split into general insurance companies and reinsurance companies, but treat these categories jointly as general insurance.

The Danish general insurance market comprises Danish general insurance companies as well as branches of foreign general insurance and reinsurance companies operating in Denmark.

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Note: The breakdown by commercial and non-commercial companies is not shown in the statistics.

<sup>1</sup> See e.g. OECD, Pensions Market in Focus, 2019, for a cross-country comparison of the I&P sector.

## The I&P sector's financial balance sheet

The balance sheet table of the I&P statistics provides an overview of the market value of the sector's financial assets and liabilities. In the 3rd quarter of 2019, the sector's financial assets amounted to almost kr. 4,800 billion, of which the pension sector accounted for more than kr. 4,600 billion, see Chart 1. The first nine months of 2019 saw considerable growth in the companies' balance sheets (kr. 702 billion) as a result of substantial returns on pension wealth.

### Assets are made of up securities

The financial assets of the I&P sector consist mainly of securities, i.e. shares, bonds and investment fund shares. The sector has invested almost kr. 4,000 billion in these instruments, see Chart 2.

The sector's other assets include derivatives, lending, tax receivable and other financial receivables.

### Liabilities are mainly pension provisions

The financial liabilities consist mainly of provisions for pension commitments, broken down by average rate and market rate.

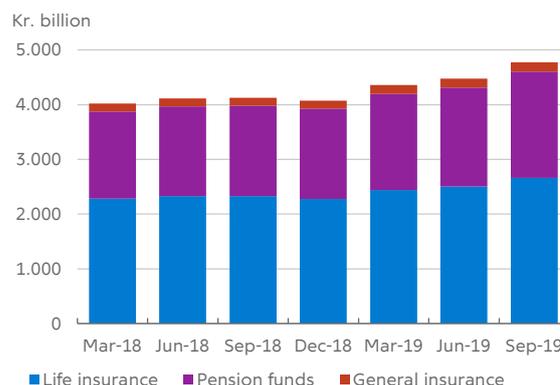
Average rate products are characterised by the pension savings accruing interest at a certain guaranteed average rate.<sup>2</sup> Consequently, average rate provisions indicate the amount to be reserved by the companies for meeting guarantee commitments.

As a main rule, market rate products do not come with any guarantees; instead they are characterised by a one-to-one relationship between the invested assets and the customer's pension savings. The customer bears the investment risk. Market rate provisions reflect the value of the assets invested.

"Other provisions" include, inter alia, general insurance provisions. The "Other liabilities" category includes e.g. loans, tax owed and other amounts owed.

**The I&P sector's financial balance sheet totalled almost kr. 4,800 billion in the 3rd quarter of 2019**

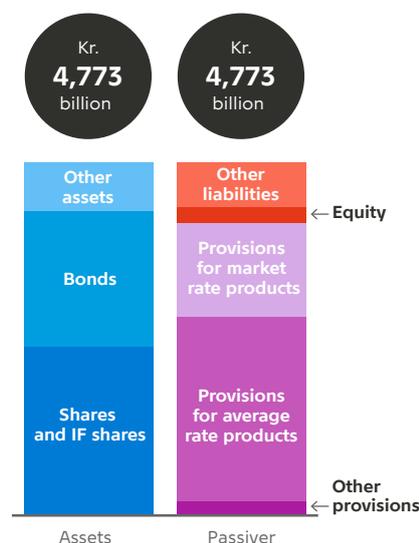
Chart 1



Source: Danmarks Nationalbank, DNFPBAL table.

**The I&P sector's financial assets comprise securities, while its liabilities are mainly pension provisions**

Chart 2



Note: The balance sheet has been compiled without look-through of Danish investment funds. The assets side consists primarily of securities, while the liabilities side consists mainly of the companies' commitments to customers, i.e. provisions. Shares include other equity investments.

Source: Danmarks Nationalbank, DNFPBAL table.

<sup>2</sup> In reality, these are guaranteed benefits based on a technical rate of interest that is subject to regulation in the form of a technical guaranteed rate of interest set by the Danish Financial Supervisory Authority. The companies are not always legally bound by these guarantees.

## Provisions of the I&P sector

The provisions of the I&P companies reflect their insurance and pension commitments to customers, and hence they vary across companies and types of firm, see Box 2.

### Pension funds mainly have average rate products

Broken down by company type, life insurance companies and pension funds have kr. 2,250 billion and kr. 1,641 billion, respectively, in total provisions.

Average rate products play a large role for pension funds in particular, see Chart 3. For this group, kr. 1,537 billion relates to average rate provisions, while market rate provisions amount to only kr. 85 billion.

Conversely, the life insurance companies have a larger share of market rate provisions, although they also have a considerable volume of average rate provisions.

By comparison, the provisions of the general insurance companies are very modest.

At 64 per cent, average rate provisions still account for the largest share of the aggregate provisions of the pension sector.

### Provision types in the statistics

Box 2

#### 1. Pension provisions

**Provisions for average rate products** are stated so as to reflect the amount to be reserved for meeting the future guaranteed benefit commitments. It is assumed that the amounts reserved accumulate returns on market terms.

**The collective bonus potential** is a capital buffer built up for average rate products in periods with high returns. In periods with lower returns, the collective bonus potential is reduced so that average rate products accrue interest at a stable rate.

**Provisions for market rate products** are stated as the total provisions for market rate products, which are characterised by the customer bearing the risk in relation to fluctuations in the value of the assets invested. The provisions also reflect the market value of the assets invested.

#### 2. General insurance provisions

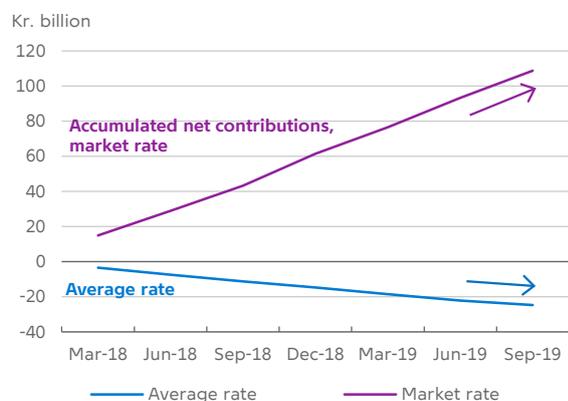
**Premium provisions** comprise the share of premiums received that is reserved for covering future claims arising during the rest of the period covered.

**Claims provisions** are used to cover claims that have already arisen in previous periods.

Note: In the I&P statistics, provisions can be found in the DNFPHEN table.

**A shift in savings from average rate to market rate**

Chart 4

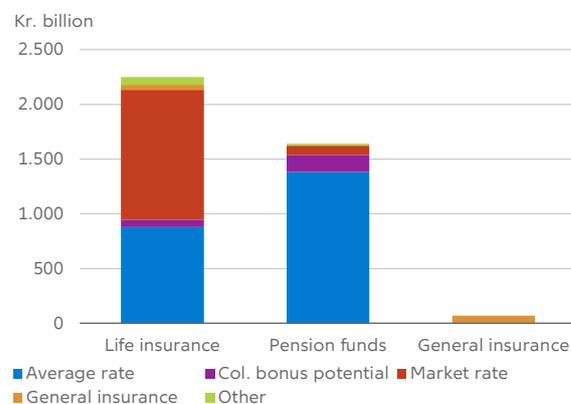


Note: The chart shows accumulated net contributions from the 1st quarter of 2018.

Source: Danmarks Nationalbank, DNFPHEN table.

**Average rate provisions still account for the largest share**

Chart 3



Note: The chart shows provisions in the 3rd quarter of 2019.

Source: Danmarks Nationalbank, DNFPHEN table.

Average rate products have been designed in such a way that returns exceeding the guaranteed rate are used to build up a capital buffer – known as the collective bonus potential. In periods with high returns, the collective bonus potential is built up, while it is reduced in periods with lower returns.

### From average rate to market rate

Over the last 10-15 years, falling interest rates and rising life expectancy have led to a shift from average rate to market rate products, a process that has been accelerated by campaigns to make savers switch to market rate products.

Since 2018, kr. 108 billion net has been contributed to market rate products, while average rate products have seen net disbursements of kr. 25 billion, cf. Chart 4.

This shows that average rate schemes are mainly in the disbursement phase, while market rate schemes are being built up.

## I&P sector investment

At the end of the 3rd quarter of 2019, the I&P sector's total investments amounted to approximately kr. 4,200 billion. To diversify risk, the investments are spread on a number of instruments, such as shares, bonds and investment funds, etc.

The product types and structures of the I&P companies have a large bearing on their investments. In Chart 5, investments have been broken down by company type. It is seen that life insurance companies allocate a smaller share to bonds than pension funds do. This reflects a higher share of market rate products, which are typically without guarantees, in the product mix of the life insurance companies.

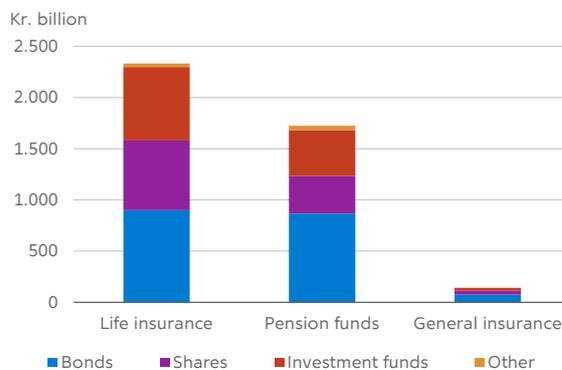
Overall, the I&P sector invests primarily in bonds (both Danish and international). But it also invests in shares, mostly with an international profile. The sector's investments in investment funds cover various types of investment fund.

### Look-through of investments in Danish investment funds

More than 25 per cent of the I&P sector's investments have been placed in investment funds, which

**Pension funds have a larger share of bonds than life insurance companies do**

Chart 5

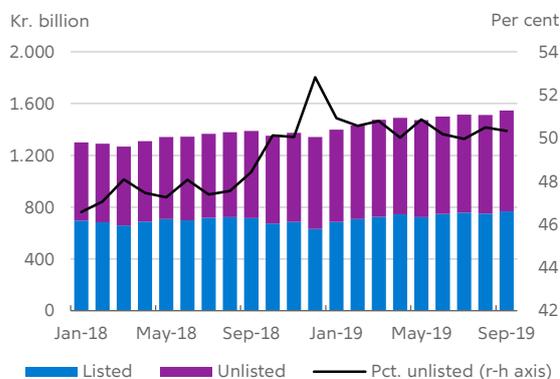


Note: Stocks at market value with netting of derivatives and loans and lending. Netting will typically result in a lower position than the gross stocks. Other investments include, inter alia, derivatives, loans, lending and deposits. Shares include other equity investments.

Source: Danmarks Nationalbank, DNFPINVL table.

**Half of the shares in the I&P sector's stocks are unlisted**

Chart 6



Note: Measured relative to total stocks of shares. Look-through is performed for Danish investment funds. Shares include other equity investments.

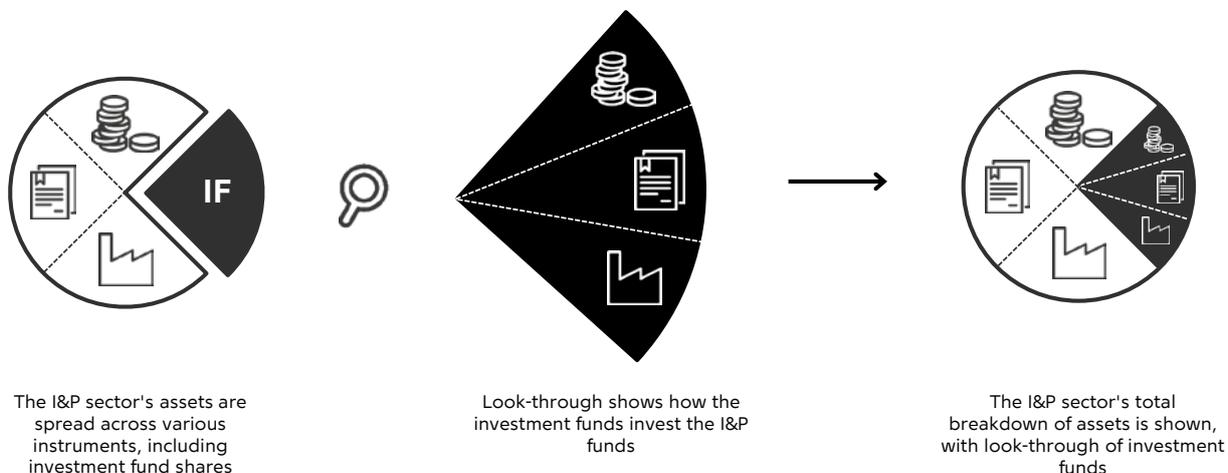
Source: Danmarks Nationalbank, DNFPINVL table.

in turn invest the funds in e.g. shares and bonds on behalf of the I&P companies.

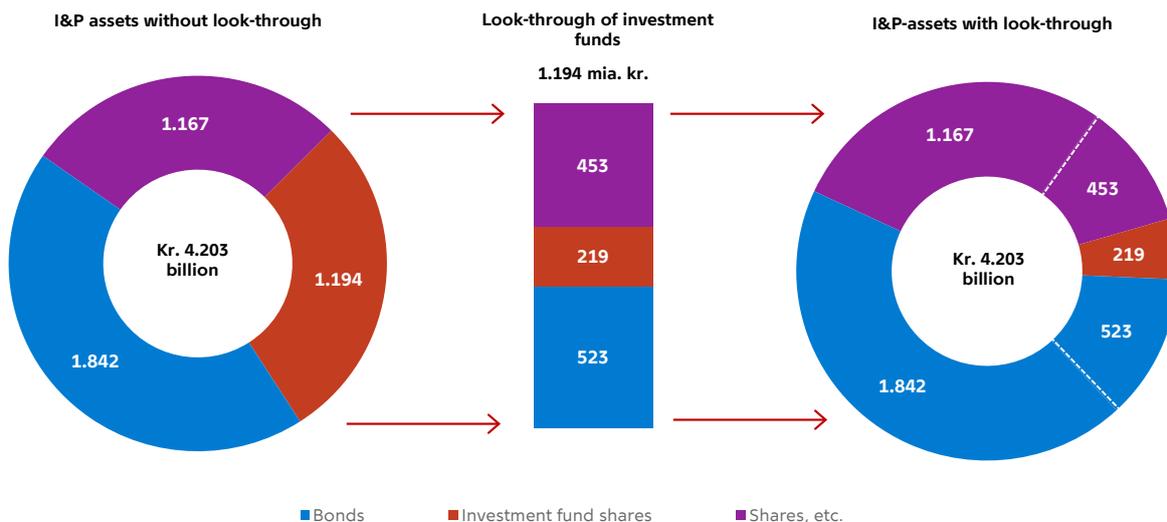
It is now possible to look through the I&P sector's investments via Danish investment funds, see Chart 7. This provides a more precise picture of the composition of assets in the sector and hence the sector's exposure to asset types, countries and currencies.

### Look-through of investment funds

Chart 7



### I&P sector's investments with and without look-through, 3rd quarter 2019

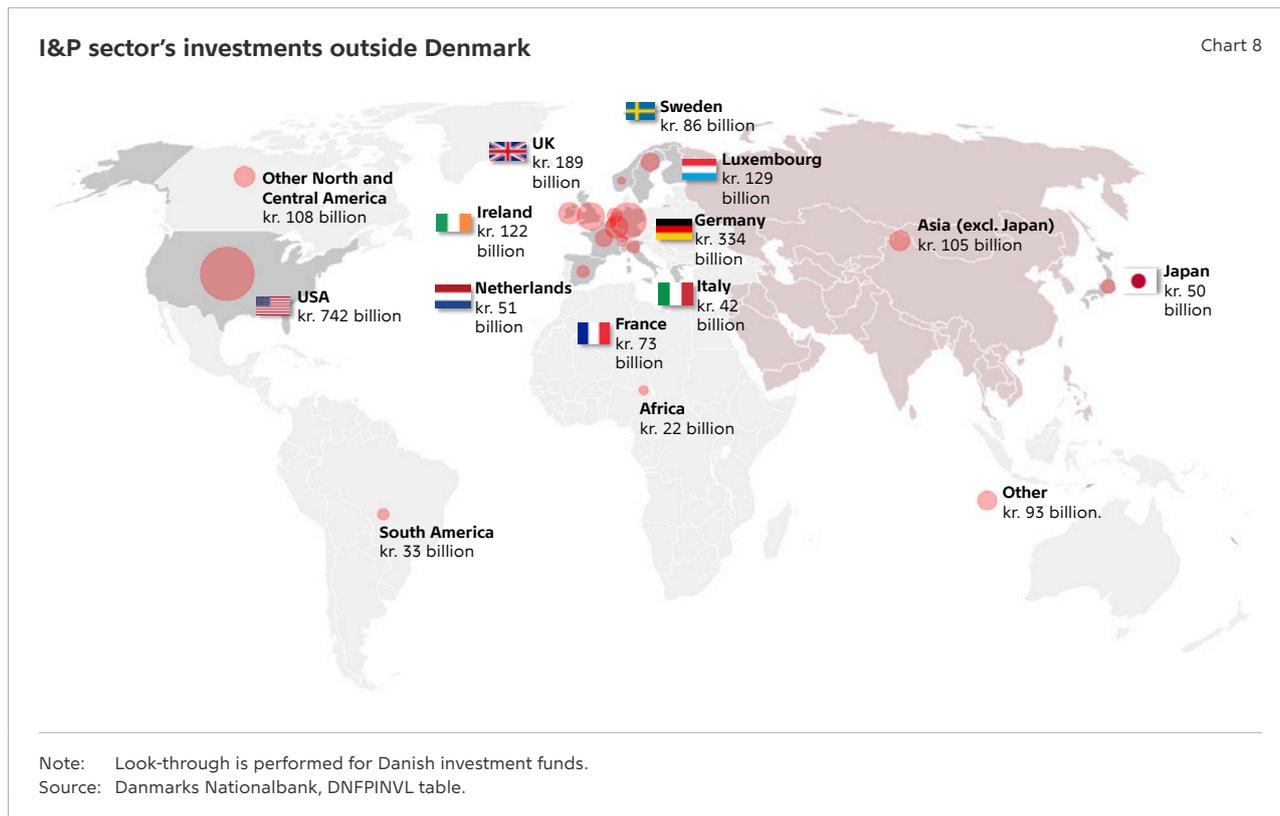


Note: The I&P sector has invested kr. 1,194 billion in investment funds that then invest the I&P sector's funds. The look-through shows the breakdown of investment fund investments by bonds, investment fund shares and shares, etc. These stocks are combined with the I&P sector's other investments to provide an overall compilation of I&P assets seen through investment funds.

A small share is still shown as investment funds. This applies to foreign investment funds, which the statistics do not look through. If a Danish investment fund holds shares in another Danish investment fund, this investment will also typically be shown as an investment fund as the Danish investment funds can be looked through only once.

Stocks are stated at market value with netting of derivatives and loans and lending. Netting will typically result in a lower position than the gross stocks. Other investments include, inter alia, derivatives, loans, lending and deposits. Shares include other equity investments.

Source: Danmarks Nationalbank, DNFPINVL table.



**Half of the shares in the portfolio are unlisted**

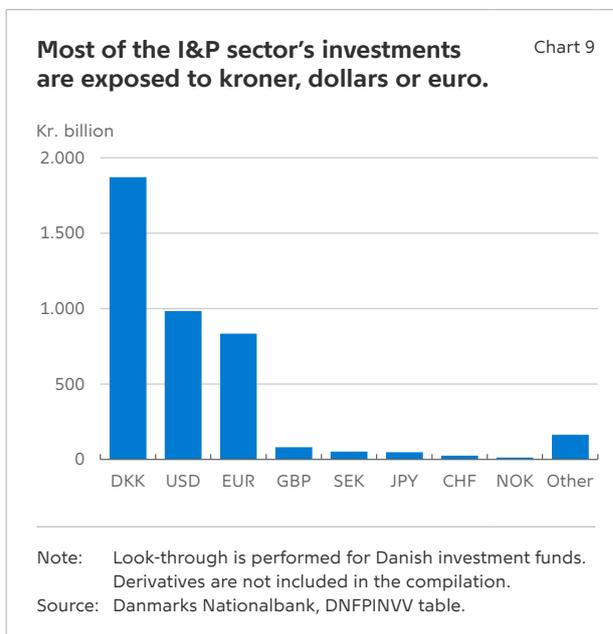
The look-through shows that half of the sector's shares and equity investments are unlisted. Unlisted shares are defined as shares and other equity investments that are not traded in listed markets, which makes them less liquid. Most of the sector's alternative investments are within this category. The unlisted shares comprise the sector's property investments, investments in private equity, infrastructure and hedge funds, etc. Chart 6 shows the I&P companies' stocks of listed and unlisted shares over time.

**Most investments are made outside Denmark**

When look-through is performed for Danish investment funds, it is seen that 46 per cent of the I&P companies' investments remain in Denmark. The rest of the funds are invested abroad so that investments are diversified and the risk is spread on countries with different economic and political risks.

Chart 8 shows a geographical breakdown of the insurance companies' and pension funds' international investments.

Besides Denmark, the I&P companies invest primarily in countries with fully developed and well-established



lished capital markets, e.g. the USA, Germany and the UK. The I&P companies invest less in areas that are still in the development phase, such as Africa and South America.

Besides the breakdown by country, the statistics show the composition of the insurance companies' and pension fund's investments by currency, see Chart 9. The companies have invested primarily in assets in kroner, dollars and euro.

The I&P sector holds dollar-denominated investments totalling almost kr. 1,000 billion. As the leading global currency, the dollar is also used for investment in other countries than the USA, where the I&P sector has invested kr. 742 billion.

## Hedging in the I&P sector

The I&P sector is exposed to a number of risks that may lead to loss of value on investments or to higher commitments.

A specific risk can be hedged in several ways. Besides spreading the risk on various asset types, the sector often invests in financial instruments for which the return fluctuates in the opposite direction of the exposed funds.

This section describes the I&P sector's hedging of the foreign exchange and interest rate risk on its assets.

### Currency exposure and hedging

Currency risk is linked to, inter alia, geopolitical and macroeconomic risks. Especially the I&P sector's assets are exposed to foreign currencies (e.g. USD) as falling exchange rates relative to DKK will lead to loss in value.

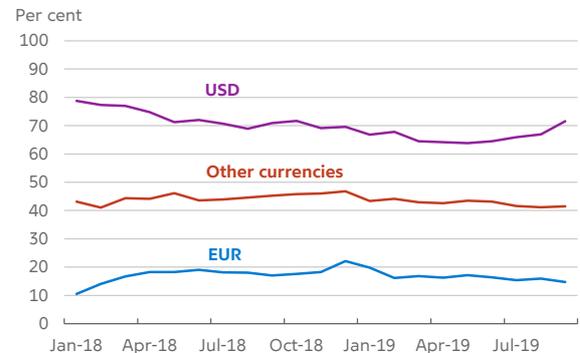
To hedge their currency risk, the I&P companies can enter into currency derivative contracts. Such contracts entail exchange of currencies at a given future date and an agreed exchange rate. This hedges the uncertainty linked to exchange rate fluctuations for the amounts specified in the contracts.

### The hedge ratio is high for US dollars

Chart 10 shows hedge ratios for foreign exchange exposures broken down by euro, US dollars and

**The hedging ratio is high for dollars but low for euro**

Chart 10



Source: Danmarks Nationalbank, DNFPVAL table.

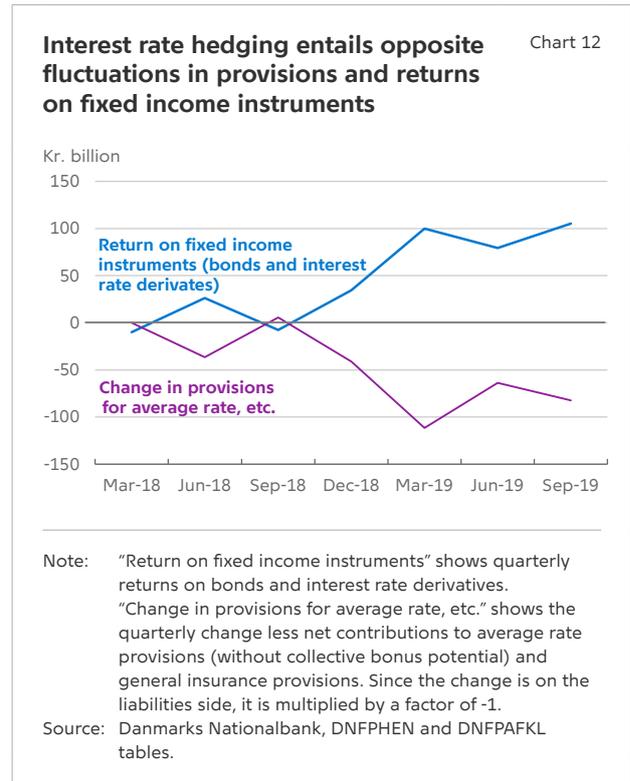
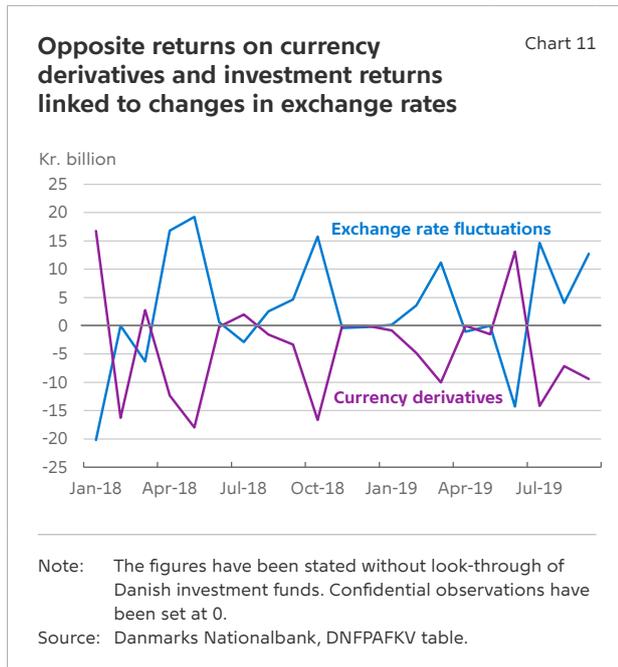
other currencies. At the end of the 3rd quarter, the I&P companies hedged approximately 15 per cent of their exposures in euro. The low hedge ratio reflects Denmark's fixed-exchange-rate policy vis-à-vis the euro. This is in contrast to the US dollar, for which approximately 70 per cent of the exposure is hedged. The hedge ratio for dollar exposures has been declining over the last two years, one reason being that it has become more expensive to hedge US dollars. So the rising exposure in US dollars has not been hedged on a current basis.

### Illustration of the I&P sector's currency hedging

The I&P statistics show the sector's gains and losses on exchange rate fluctuations. Both in relation to their currency derivatives, which typically hedge currency risk, and the currency risk linked to foreign securities. Chart 11 shows the return on currency derivatives and the investment return linked to exchange rate fluctuations. The opposite fluctuations in the two variables indicate the sector's hedging of foreign exchange risk. The two curves are not fully matched as not all foreign exchange exposures are hedged. The difference between the two constitutes the I&P sector's aggregate foreign exchange gain.

### Hedging of interest rate risk

For average rate products and general insurance in particular, the I&P sector has committed itself to guaranteed benefits. The pension sector makes provisions for guarantees that are not realised until many years into the future. In that situation, small fluctuations in interest rates may result in large absolute changes in the provisions.



When interest rates fall, the companies need to reserve more funds to meet their disbursement commitments. Consequently, it is important for the companies to hedge the risk of falling interest rates.

Interest rate risk is usually hedged by investing in fixed income instruments that increase in value when interest rates fall. The increase in the value of the instruments thus hedges the companies' need for larger provisions.

### Fixed income instruments have increased in value in 2019

Fixed income instruments include e.g. bonds and interest rate derivatives. The latter are mainly interest rate swap contracts whereby a floating rate of interest is paid and a fixed rate received. The value of these contracts rose considerably in the first nine months of 2019, during which interest rates fell, as did fixed-rate bonds. The need for large provisions has also increased due to the fall in interest rates, see Box 3.

### Illustration of the I&P sector's interest rate hedging

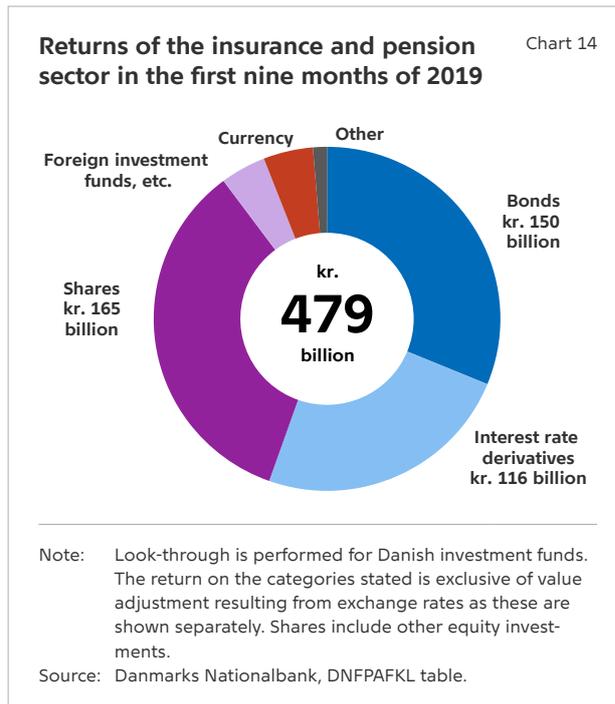
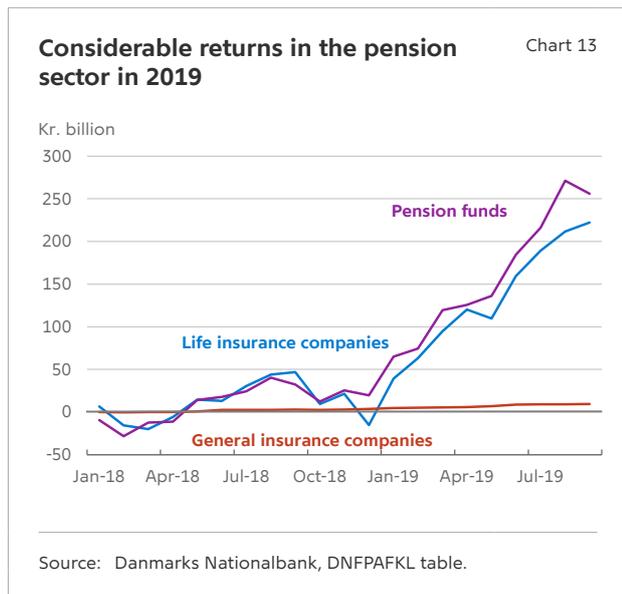
The companies' interest rate hedging is not stated directly in the I&P statistics. However, it is possible to gain an overall view of the sector's interest rate hedging via the relationship between the I&P companies' commitments and their fixed income instruments, see Chart 12.

### Provisions are determined on the basis of the EIOPA interest rate term structure

The calculations used to determine the size of the provisions required to meet the disbursement commitments are based on backward discounting of the risk-free interest rate term structure defined by EIOPA. The term structure is based on underlying market observations, etc.

The falling interest rates in the first nine months of 2019 have led to downward adjustment of the interest rate term structure. This has made it necessary to increase provisions to meet the disbursement commitments.

Note: EIOPA is the European Insurance and Occupational Pensions Authority.



## I&P sector's returns

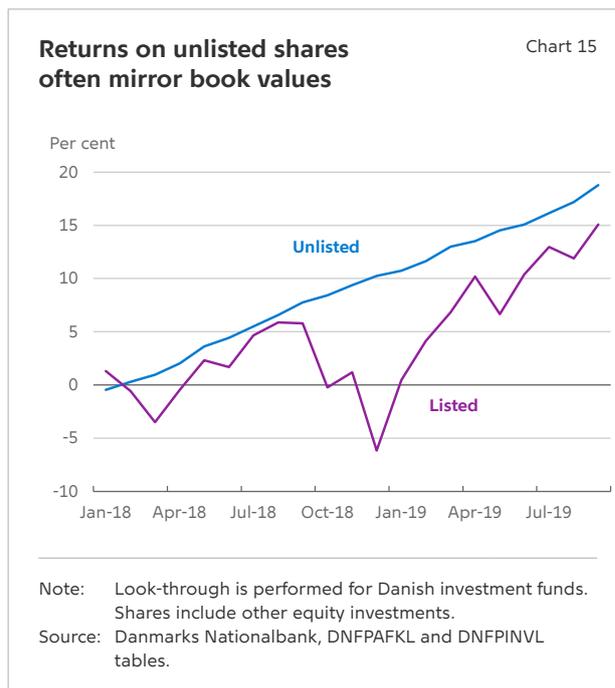
The return on the I&P sector's investments can fluctuate strongly from year to year. The return has been measured at kr. 479 billion in the first nine months of 2019.

In nominal terms, the pension funds have posted higher returns than the life insurance companies, see Chart 13. Since the beginning of 2018, the pension funds have accumulated returns of kr. 256 billion, while the life insurance companies' returns total kr. 222 billion.

The large returns reflect gains on interest rate derivatives and bonds due to falling interest rates in the first nine months of 2019, see Chart 14. Fixed income instruments are used, inter alia, for hedging interest rate risk, see also page 10.

### Unlisted shares at book value

Unlisted shares are often valued on the basis of models and assumptions regarding risk and illiquidity. This means that returns do not always mirror market fluctuations, see Chart 15.



## ABOUT ANALYSIS



As a consequence of Danmarks Nationalbank's role in society we conduct analyses of economic and financial conditions.

Analyses are published continuously and include e.g. assessments of the current cyclical position and the financial stability.

The analysis consists of a Danish and an English version. In case of doubt regarding the correctness of the translation the Danish version is considered to be binding.

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