

Collective investments

Market developments in 2016

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1. Summary

Collective investments have become the favourite investment product for savings for private and institutional investors in Denmark. The assets placed in Danish traditional collective investments funds are increasing, and at the end of 2016 amounted to almost DKK 2,050 billion. Other alternative investment funds also had around DKK 86 billion under management.

Collective investments include mutual funds (UCITS) and alternative investment funds (AIF). UCITS are targeted primarily at private investors (retail investors) and can only invest directly in traditional securities (shares and bonds) without the use of gearing and derivatives. AIFs are made up of capital associations¹, which also invest in traditional securities, and other alternative investment funds, such as private equity funds and real estate funds. AIFs are less tightly regulated than UCITS in terms of investment opportunities, and are targeted primarily at professional investors.

The risk has increased in the collective investments

In recent years, the risk has increased for assets placed in collective investments. This is reflected both in the increased assets in investment funds, which have traditionally had higher risks, and in the shift in assets towards more risky asset classes. The movement toward higher risk should be viewed in light of recent low interest rates, which have increasingly affected the search for returns on riskier markets.

In 2016, Danish UCITS funds investing in equities delivered an average annual return before expenses of 7.3 per cent.² This was somewhat lower than the average return of 14 per cent in the previous four years. In particular, UCITS funds investing in Danish equities fared worse than in 2012-2015. On the other hand, UCITS funds investing in bonds fared better in 2016 than in previous years, and their average return was 5.6 per cent compared with 3.3 per cent in 2012-2015.

In general, 2016 was characterised by the fact that UCITS funds investing in foreign securities – in contrast to previous years – achieved a significantly better return than the UCITS funds investing in Danish equities and bonds.

Danish actively managed funds account for most of Danes' assets in investment funds

Actively managed funds account for over 95 per cent of Danish private and institutional investors savings in investment funds. Passively managed funds therefore account for a very small proportion, also when compared with other countries.

At the same time, Danish households invest primarily in Danish funds, while insurance companies and pension companies are more likely to invest in foreign funds.

¹ A type of AIF that largely resembles a UCITS. The regulatory requirements however differ, as they for example are allowed to use gearing and have full control of the allocation of their investments. The legal structure of this type of fund differs from other AIFs.

² The FSA receives reports of e.g. returns and costs from Danish UCITS, but not from the AIFs.

The very limited use of passively managed funds and the high home bias raises the question whether Danish investors have put together the optimum mix of investment funds.

New MiFID II rules should enhance investor protection

From 1 July 2017 investment firms (banks and other distributors) in Denmark are no longer allowed to accept and retain commission payments (inducements) from third parties (such as a mutual fund) in relation to the provision of portfolio management to a client. The aim is to remove the distributor's incentive to act against the client's best interests.

Mutual funds, managers of alternative investment funds, banks and security dealers are in the process of adapting their business models to the new rules. As a consequence of the new rules, several mutual funds have set up new clean funds without commission payment to be used in situations when investment firms have to comply with the ban on inducements. The FSA will monitor this trend.

Risk management of liquidity in Danish mutual funds

In autumn 2016, the FSA conducted a survey of the risk management of liquidity in Danish investment management companies and their underlying UCITS funds.

The background to the survey included the recent very low interest rates that have made it necessary for managers to rethink the investment strategies for their funds. It is one reason why it has been noted around the world that funds in all asset classes have moved further along the risk curve in search of returns, which has probably contributed to increased liquidity risk in the funds.

The survey showed that liquidity management mainly depends on the investment strategy for each sub-fund, and that different factors (e.g. poor data quality) complicate the management and monitoring of liquidity in some bond funds. At the same time, the survey revealed that Danish mutual funds have historically only experienced redemption pressure that could be handled without major adjustments.

2. General trends in 2016 for collective investments

What are collective investments?

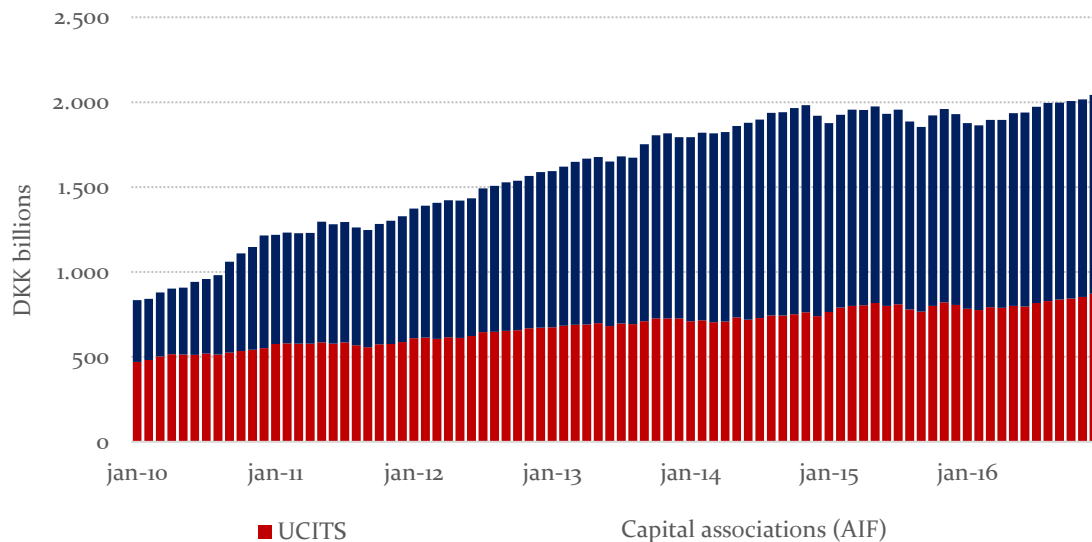
Collective investments cover traditional mutual funds (UCITS) and alternative investment funds (AIFs). AIFs include both capital associations and other AIFs. The two types of AIFs are subject to the same legal requirements, but capital associations are more like UCITS, because they also invest solely in traditional securities. Other AIFs cover funds that invest in assets other than traditional securities. These include among others private equity, real estate, commodities and infrastructure.

In this section, we will disregard other AIFs when developments in collective investments are analysed. This is because there are differences in reporting compared with the capital associations, and the data history for these is shorter; see box 1. In addition, the FSA is currently implementing a series of controls to improve data quality and ensure consistency in the historical data. In view of this, other AIFs are analysed separately in section 4.

Assets growing in both mutual funds and capital associations

The total members' assets invested in both UCITS and capital associations are still growing; see Figure 1.³ There are some small fluctuations in assets over time, but the overall picture is that assets have been increasing for a number of years, partly driven by Danish pension payments.

Figure 1: Assets placed in collective investments increased again in 2016



Note: Other AIFs are not included as the FSA historically has not received reports of members' assets; see FSA (2016), 'Market developments in 2015 for collective investments'.

Source: FSA.

³ Members' assets reflect the sums deposited by investors in investment funds, and are thus a liability on the fund balance sheets.

In UCITS, members' assets grew in 2016 by over DKK 67 billion, reaching DKK 873 billion at the end of the year. In capital associations, members' assets rose by almost DKK 48 billion to DKK 1,171 billion at the end of 2016. 85 per cent of the growth in UCITS can be attributed to net investments and 15 per cent to value added. For capital associations, the growth is due only to added value, as there was a net sale of capital associations.

Box 1: Reports to the FSA

Reports of UCITS and capital associations

The FSA and the National Bank receive reports from the Danish investment funds – the so-called IF statistics. The reports are collected at the sub-fund level and aim to provide an insight into the individual funds' business models. The reports include an income statement, balance sheet, fund transactions, securities holdings and various key figures.

The IF statistics include both Danish UCITS and capital associations. The latter may be both traditional capital associations investing in stocks and bonds, and also hedge funds and money market funds. The condition is that managers must be licensed and the sub-fund must be listed in the statutes as a capital association. The reporting requirements depend on the fund type. For example, only UCITS are required to provide the annual income statement, itemise administrative costs and report key figures.

The reports are regularly revised. The last adjustment was made after consulting the Danish Investment Association (IFB) and mutual fund sector in early 2017 and will take effect at the beginning of 2018. Among other things, the revision means that mutual funds will report information at the share class level and with greater frequency, as well as new indicators for risk and performance. Furthermore, a number of the existing reporting requirements have been removed.

Reporting by managers of alternative investment funds

Since the end of 2015, managers of alternative investment funds have been required to report various data to the FSA for both the management company and the underlying funds. The reporting is coordinated at the European level by the European Securities and Markets Authority (ESMA) and aims to ensure that systemic risks can be monitored and evaluated as well as making it possible to analyse the movements of the market at the European level.

The reporting includes both capital associations and other AIF types – private equity funds, real estate funds, infrastructure funds etc. The scale and frequency of reporting depends on the size of the fund and whether it uses gearing. The overall reporting includes master data for the manager and the underlying funds as well as information on the funds' investment strategy, positions, risk and gearing levels etc.

Collective investments are Danish people's favourite product for savings

In recent years, collective investments have become the favourite product for savings for private and institutional investors in Denmark. At the end of 2016, these collective investments

accounted for 38 per cent of Danish financial savings through supplementary pensions (ATP), insurance companies and retirement pensions and their available resources; see Figure 2a.

The growth of collective investments has been especially at the expense of slower growth in investment in bonds. This should be seen in light of the fact that savings in insurance companies and pension funds increasingly take the form of market rate products, a larger proportion of which are share-based compared to average interest rate products.⁴ The switch from market rate to average rate products is also likely to impact on the pension funds' choice of funds.

The increase in members' assets for both UCITS and capital associations is driven by all investor groups and the breakdown of investors is largely unchanged from 2012 to 2016, cf. Figure 2b.

The main investors in mutual funds are the insurance companies and pension sector, which owned about half of the assets placed in collective investments at the end of 2016, and households which owned almost a quarter of the assets. Households owned 54 per cent of the assets in UCITS at the end of 2016, while insurance companies and pension funds owned 81 per cent of the capital associations.⁵

Figure 2a: Collective investments are the most used product for Danish savings

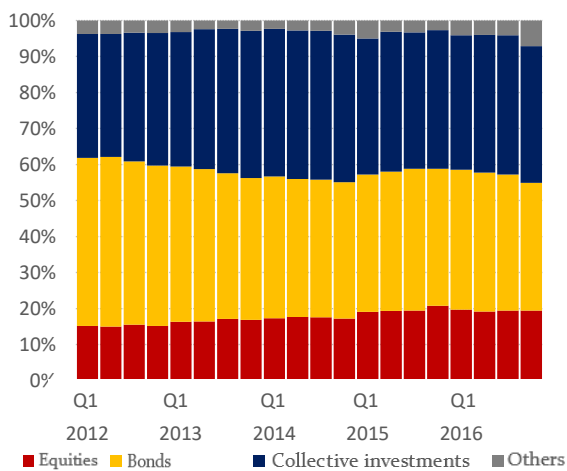
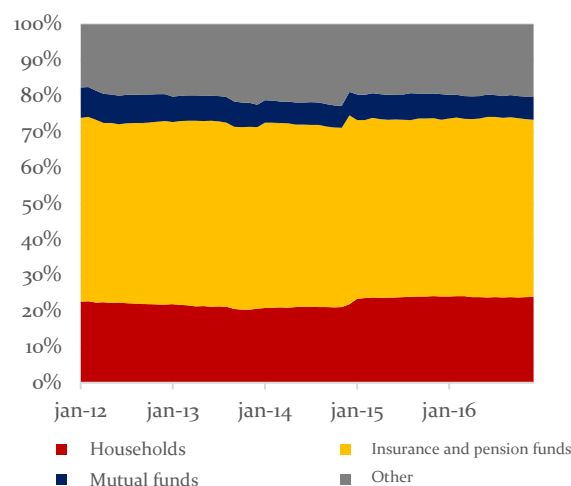


Figure 2b: Investor breakdown unchanged in UCITS and capital associations



Note: The left-hand figure shows the percentage of Danish savings in financial instruments by type of instrument. The figure on the right shows members' assets in UCITS and capital associations by investor type.

Source: FSA.

⁴ Payments into market rate products have increased significantly in recent years and now exceed 60 per cent of total pension contributions. The proportion of shares in market rate products is about 15 percentage points higher than the proportion of shares in average income products. For more information, see Financial Supervisory Authority (2017), 'Pensions when the guarantees disappear', discussion paper (in Danish only).

⁵ Reports to the Financial Supervisory Authority and own calculations.

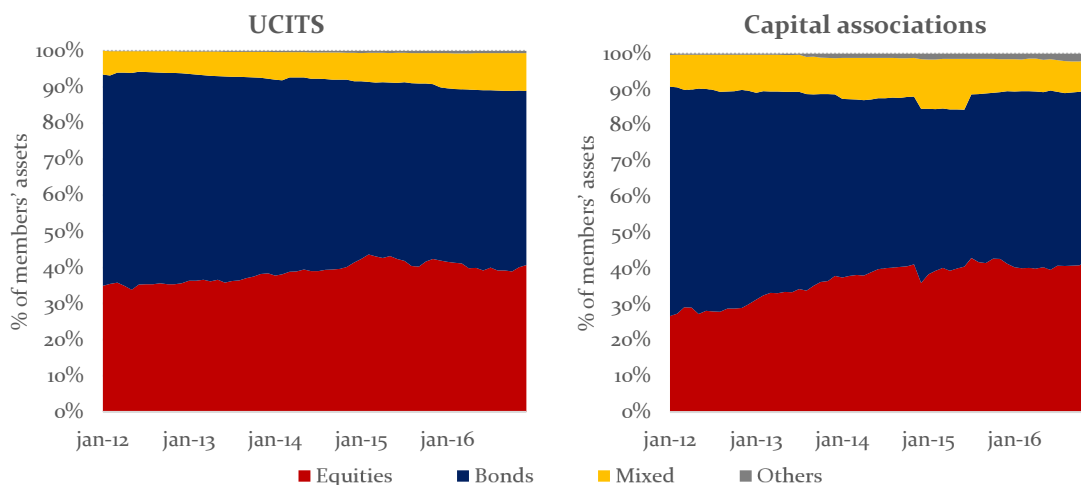
Risky assets make up more of the collective investments

In recent years, investors in UCITS and especially in capital associations have moved towards greater risks in their investments. This reflects the development in Danish savings in general and should be seen in light of the low interest rates in recent years, which have increasingly pushed investors' exposure towards more risky markets.

The higher risk-taking has among other things taken place through a rise in investors' allocation towards funds focused on equities; see Figure 3. This is also true of mixed funds that invest in both stocks and bonds. The recent growth in mixed funds may potentially be attributed to structural adjustments related to MiFID II; cf. Theme 2: 'New MiFID II rules should enhance investor protection' in this article.

Asset allocation across asset types has however remained fairly constant since the end of 2015. There may be several reasons for this slowdown. Global stock markets experienced a correction in 2015, while the bond markets stabilised. Finally, a small but growing part of investors' assets was directed at other alternatives than collective investments focused on traditional securities.

Figure 3: The shift towards a greater proportion of equities has ceased



Note: The figures show members' assets broken down by investment policy for UCITS and capital associations. Changes in members' assets include both purchases and sales of investment certificates, value changes and dividend payments. The increase in January 2015 in 'Mixed' in the figure to the right is due to a number of sub-funds with stocks and bonds ceasing at the end of 2014. The decline later in the year is due to two large mixed sub-funds being replaced by equity and bond funds respectively.

Source: FSA.

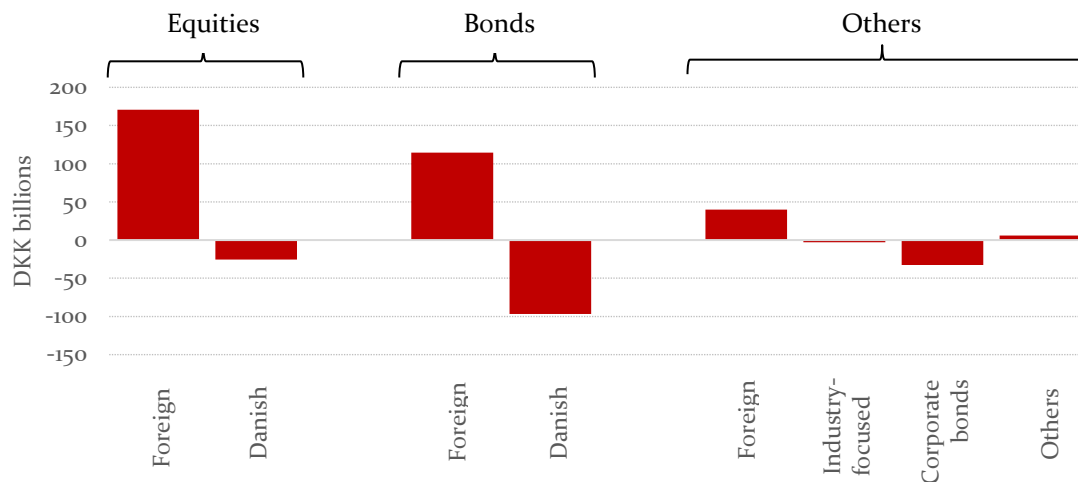
Within each asset type, there has been a shift towards assets that are usually considered more risky. Figure 4 shows that, since 2012, there have only been net purchases of investment certificates in funds focused on foreign securities. At the same time, there has been a net sale of funds focused on Danish equities and bonds.

The development illustrates that investors, as well as moving towards a more risky allocation, also took on a broader exposure in terms of e.g. geography. With regard to risks there may be

two opposing factors here, as a broader diversification reduces vulnerability to developments in individual markets, such as the Danish stock market.

It should be noted that the movement towards foreign assets does not in itself imply greater risk. The risk depends primarily on the underlying investment. A Danish stock may be as risky as a Chinese stock, for example, despite the potential currency risk. Danish managers often use external advisors, which probably reduces the potential differences in the funds' insight into different markets. Foreign investments may however include investments in markets with a less stable economic climate than Denmark, and this can increase the risks.

Figure 4: Danish investors have mainly purchased foreign-focused funds



Note: The figure shows net purchases in the period 2012-2016 of investment certificates broken down by investment focus. Industry-focused equity funds (funds focused on a specific industry, e.g. IT, environment, pharmaceuticals etc.) and funds focused on corporate bonds may include both Danish and foreign securities, which are therefore included under foreign or Danish-focused funds in the figure. Danish equity funds also include funds with a Nordic focus.

Source: FSA.

Shift in assets towards riskier sectors

In recent years there has been a shift in investment fund assets towards sectors that are traditionally likely to be more risky.

Non-financial corporations' share of the assets in investment funds grew to 35 per cent at the end of 2016; cf. Figure 5a. There has also been a decrease in the share of the assets invested in the MFI sector, which in practice means the banking and mortgage sector.

At the same time, there has been a geographical shift in terms of where the funds' assets are located. This can be indirectly seen in Figure 5b, which shows the currency the assets are in.

Danish assets decreased by 9 percentage points from early 2012 to late 2016, when more was invested in assets denominated in US dollars in particular. There has also been an increase in currencies from OECD countries other than euros, US dollars and Danish kroner.

Figure 5a: Shift in fund assets from the MFI sector to non-financial corporations

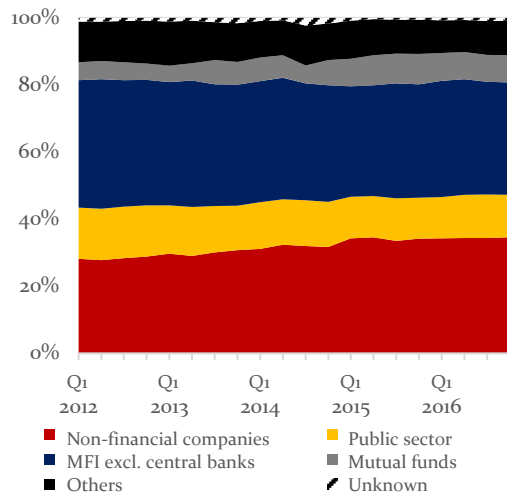
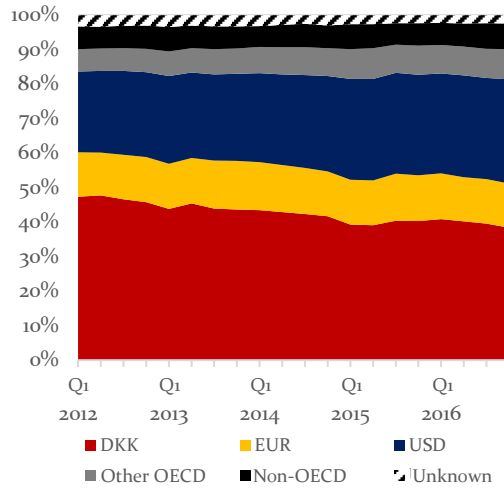


Figure 5b: Shift from Danish kroner to US dollars in particular



Note: The figures show the share of members' assets by sector (left) and currency (right).

Source: FSA.

It is hard to draw a conclusion whether these shifts produce higher risks, as there is no data for the underlying assets. MFI companies are however generally considered safer than non-financial companies and, other things being equal, the movement towards currencies other than the Danish krone means that portfolio managers must take further factors into account. It is thus likely that the trend towards assets being invested in more risky instruments will be reinforced, as the funds switch their portfolios in the same direction.

3. Development in Danish mutual funds in 2016

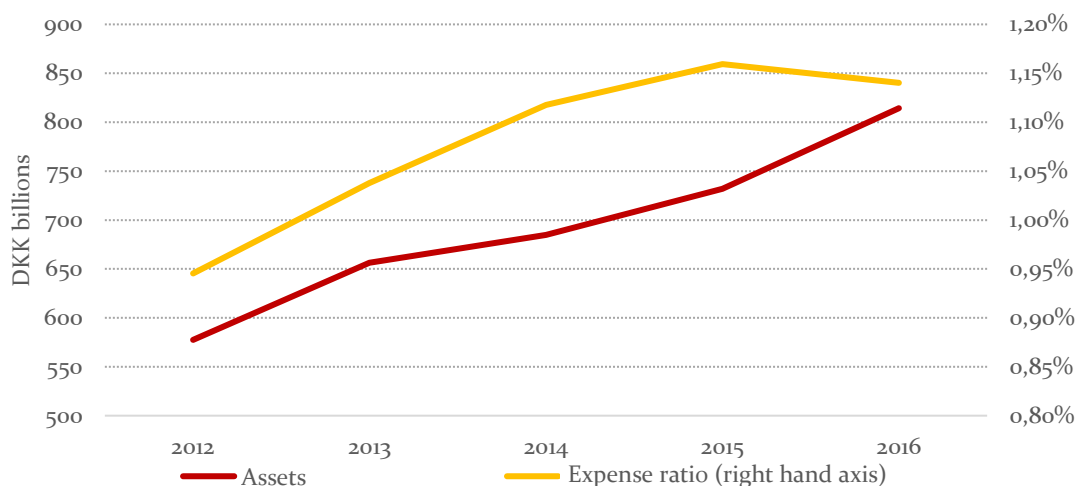
Mutual funds (UCITS) are intended primarily for households, which had direct ownership of 54 per cent of the total assets in UCITS at the end of 2016. The remaining investor groups each owned less than 10 per cent of the total members' assets.⁶

For households, there may be a number of advantages to investing in a UCITS. Clients will obtain greater diversification of their investments, get professional investment managers to invest for them, and have a smaller workload compared to managing their own portfolio.

Marginal decrease in cost per krone invested

The expense ratio in Danish mutual funds decreased marginally in 2016 after several years of increases; see Figure 6. The expense ratio is a measure of the cost of mutual fund products and is calculated as the ratio between the fund's administrative costs and the average member assets during the year.

Figure 6: Marginal decrease in costs per krone invested in Danish UCITS in 2016



Note: The figures include UCITS which have reported an expense ratio. The expense ratio is a weighted average based on the average member assets on an annual basis.

Source: FSA.

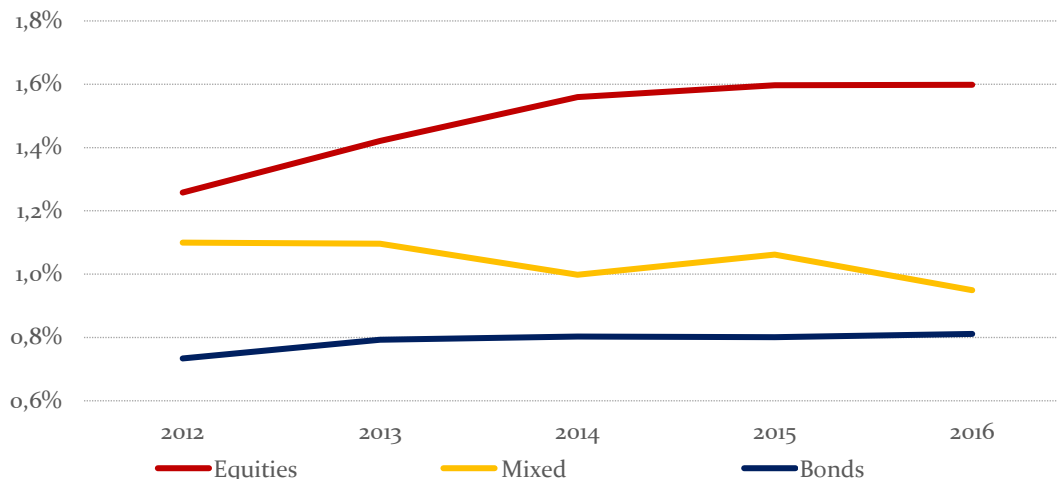
The marginal decline in the expense ratio for Danish mutual funds from 2015 to 2016 is due to two effects.

First, it reflects the fact that the mixed funds have experienced a slight decrease in costs per krone invested; see Figure 7. This was because members' assets grew more than the administrative costs. In both equity and bond funds, the expense ratio was unchanged from 2015 to 2016.

⁶ Based on reports to the Financial Supervisory Authority and own calculations. The remaining investor groups include insurance and pension funds, other financial intermediaries, non-financial corporations, mutual funds, MFIs excl. central banks, the public sector, and a residual group.

Secondly, from 2015 to 2016 there was a slight shift in the average member assets on an annual basis from the equity funds to mixed funds and bond funds, both of which have on average lower expense ratios than the equity funds.

Figure 7: Decline in the expense ratio for mixed funds



Note: The figures include Danish UCITS which have reported expense ratios. The expense ratio is a weighted average based on the average member assets on an annual basis.

Source: FSA.

The composition of assets affects the overall expense ratio because there are significant differences in expense ratios across the funds, depending on whether they are equity funds, bond funds or mixed funds. This is partly because the setup of a fund will vary according to the investment policy. Equity funds have, for example, generally higher trading and operating costs than bond funds. At the same time, it is important that about 90 per cent of equity funds in the Danish market are actively managed; see Theme 1: 'Danish actively managed funds make up the absolute majority of Danes' assets in investment funds' in this article, as actively managed funds generally have higher costs than passively managed funds.

2016 was a relatively good year for bond funds and less good for equity funds

In 2016, the Danish equity funds across investment strategies generally delivered a significantly lower return than the average return in the period 2012-2015; see Figure 8a. Particularly equity funds focused on the Danish market performed worse than in 2012-2015, giving an average return of approximately 2 per cent in 2016. It should be borne in mind here that e.g. the C20 Cap index on Nasdaq Copenhagen fell marginally during the year.

The bond funds on the other hand performed better in 2016, and gave a return of 5.6 per cent, which is somewhat above the average of 3.3 per cent in the previous four years.

The combination of equity funds having a less good year, while bond funds performed relatively well compared with previous years, may be part of the explanation for the stagnation in investors' exposure to equity funds in 2016; see section 2.

In general, 2016 was characterised by the fact that funds investing in foreign securities – unlike previous years – achieved a significantly higher return than the Danish-focused funds.

It is important to note that the returns vary significantly from year to year, and that a good return one year does not necessarily mean a good return in the following years – or vice versa.

The expense ratios have generally increased for both foreign and Danish-focused equity funds; see Figure 8b. This further reduces the already low returns for investors in 2016.

The costs in the bond funds, on the other hand, are at roughly the same level in the years 2012-2016, except for a slight increase for corporate bond funds. So 2016 was a relatively good year for investors in Danish funds focusing on bonds because the returns were relatively high and costs largely unchanged.

Figure 8a: Returns in 2016 lower for equity funds and higher for bond funds than in previous years

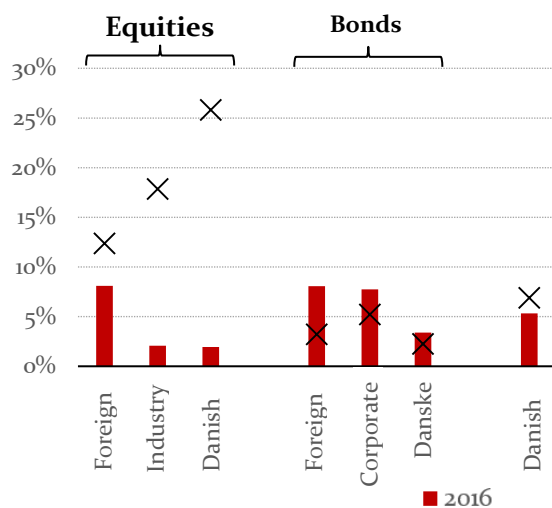
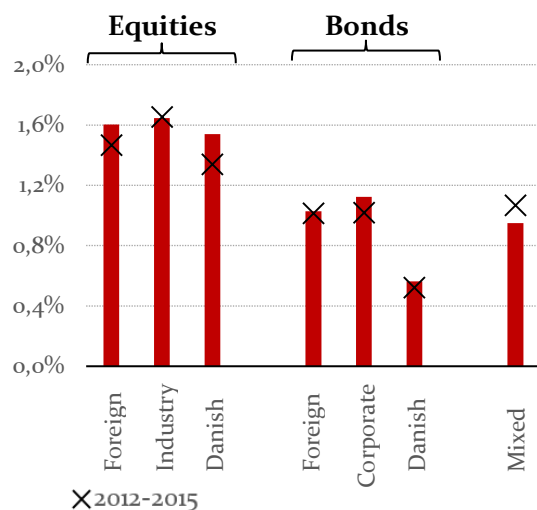


Figure 8b: Expense ratios generally slightly higher in 2016 than in previous years



Note: The return and expense ratios for each year are calculated as a weighted average of the members' assets. The average for 2012-2015 is calculated as the arithmetic mean. The rate of return is before costs and states the relative growth in the net asset value per share incl. dividends per share. The expense ratio is calculated as the administrative costs as a share of the average member assets during the year. Sector-based equity funds (funds focused on a specific sector, e.g. IT, environment, pharmaceuticals) and business-based bond funds may include both Danish and foreign securities, which are not included in foreign or Danish-focused funds in the figure. Danish equity funds also include funds with a Nordic focus.

Source: FSA.

4. Development of alternative investment funds

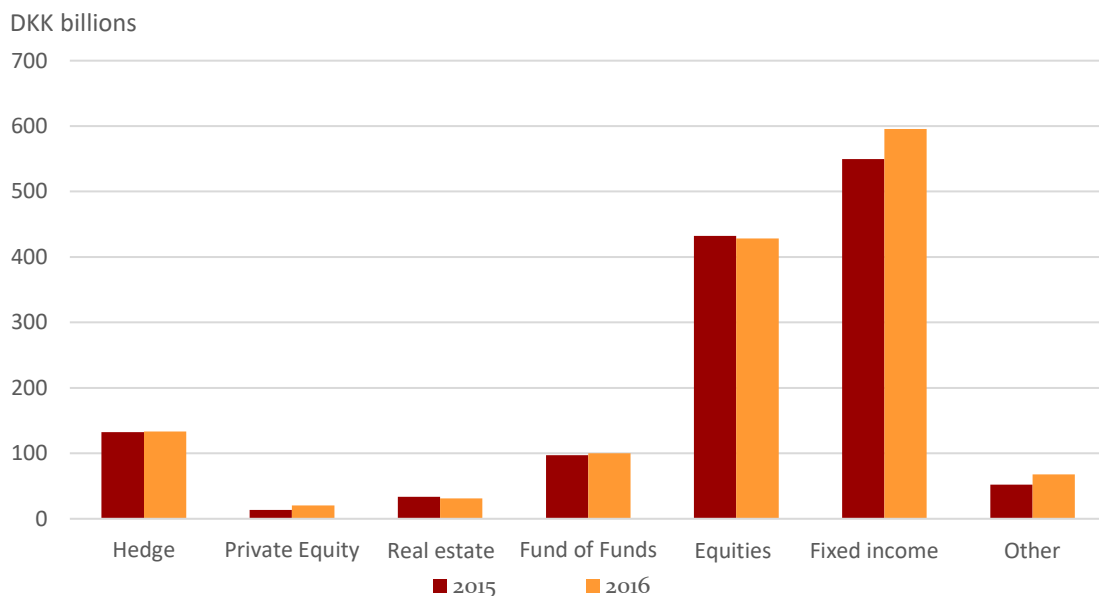
The assets under management in the alternative investment funds (AIFs) with Danish managers grew by 5 per cent in 2016 to DKK 1,376 billion at year-end.⁷

The vast majority of the assets in AIFs are in AIFs with investment strategies focused on traditional assets like equities and fixed income, while only DKK 86 billion, or 6.2 per cent of total AIF assets, are in other AIFs. However, this is an increase over the previous year, when the figure was 4.8 per cent. Thus, there has been a shift of assets in AIFs from AIFs with traditional investment strategies towards alternative funds with other investment strategies.

Total assets in AIFs are divided into funds with very different investment strategies; see Box 2. Almost three-quarters of the assets are however invested in funds whose primary investment strategy is within equity or fixed income; see Figure 9.

The assets of the funds with an investment strategy within fixed income rose by DKK 46 billion in 2016, and thus account for more than two-thirds of the growth in the AIFs' total assets.

Figure 9: The majority of AIF assets are invested in traditional securities



Note: Assets under management (AuM) in Danish AIFs (both registered and licensed) broken down by the funds' primary investment strategy. The categories of Equities, Fixed Income and Other are sub-categories of the primary investment strategy Other. In cases where the reporting for an AIF are not yet available for 2016, it is assumed that the assets under management in 2016 are identical to the assets under management in 2015.

Source: FSA.

The assets in the infrastructure funds more than doubled in 2016, increasing from just under DKK 3 billion at the end of 2015 to DKK 6 billion a year later. The doubling of assets was mainly due to new investments in existing funds.

⁷ The assets under management cover the alternative investment funds' exposure and thus also include assets acquired using gearing and derivatives.

Box 2: Alternative investment funds cover very different fund types

In the legislation, the alternative investment funds' investment strategies are categorised into five primary investment strategies: Hedge, Private equity, Real estate, Fund of funds and Other. Below is a brief description of each strategy:

Hedge

A hedge fund invests in a variety of assets, equity and is typically characterised by having a complex portfolio-construction where leverage and a wide range of financial instruments are a key element. These funds are generally distinct from UCITS, as regulators do not cap their use of leverage, thus they invest with a higher degree of flexibility. The reports to the Danish FSA show that interest rate derivatives are the asset type that makes up most of the portfolio of a typical Danish hedge fund.

Private equity

A private equity fund invests in operating companies that are not publicly traded. The aim is to further develop and modify the companies and thereby add value, so they can later be resold or exchange-listed at a profit. A private equity fund could invest in a variety of companies. Typical acquisition candidates may be start-ups working on developing a product, or providing funds to more established companies past their start-up phase so the company can grow, get through a generational change, or change direction due to current market conditions.

Real estate

This investment strategy covers investments in property, including commercial and residential real estate. Danish real estate funds invest primarily in the Danish market, but German properties make up a growing part of the portfolio.

Fund of funds

'Fund of funds' is an investment strategy where the majority of the fund's portfolio consists of positions in a subset of other investment funds, instead of direct investments in the underlying assets, such as equities or bonds.

Others

This category covers funds with a specific focus on equities and/or bonds (mainly capital associations) or other types of assets, such as commodities or infrastructure, and where the primary investment strategy cannot be characterised as either Hedge, Private equity, Real estate or Fund of funds.

Private equity funds are growing

Funds with a primary investment strategy within private equity have seen an increase in assets of about 40 per cent from about DKK 12 billion at the end of 2015 to approximately DKK 17 billion a year later. The significant growth is mainly driven by an increased number of new funds with private equity as their investment strategy.

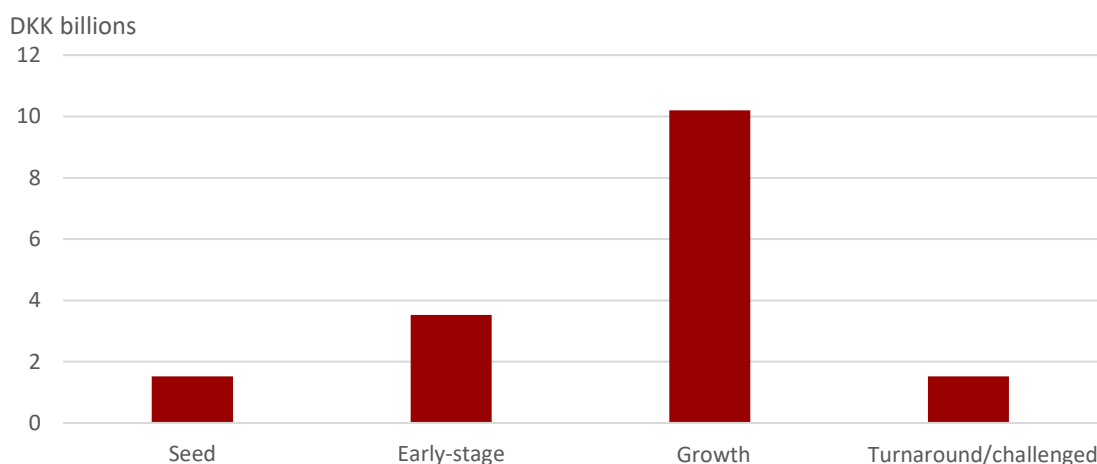
The investment strategy of a private equity fund is based on acquisitions of companies with the aim of further develop and modifying those companies to achieve value creation; see Box

2. The companies the fund wishes to buy will depend on the individual fund's investment focus and skills, and the acquisition candidates may range widely from start-ups to more established companies.

Almost two-thirds of the assets in Danish private equity funds are invested in funds focusing on small and medium-sized enterprises, which the fund managers consider to have high growth potential, see Figure 10. This sort of company may typically have had high growth for several years, but needs a capital injection e.g. to achieve a better market position or increase its turnover and thus ensure value creation.

It is difficult to assess the risk for these established companies, but they are expected to be less riskier than companies in the early start-up phase which have not yet launched a product, *ceteris paribus*.

Figure 10: Danish private equity funds focus especially on established companies



Note: The figure shows assets under management broken down by the private equity funds' primary investment focus based on an evaluation of each company's website and prospectus documents. 'Seed' covers entrepreneurial companies that are in the start-up phase. 'Early-stage' covers companies that are close to launching or have a product on the market. 'Growth' generally covers more established companies with a high growth and development potential. 'Turnaround/challenged' covers established and older companies which may be facing a generational change, or where market conditions are making it hard for the current management to develop the business further.

Source: FSA and the companies' own data.

Especially professional investors in AIFs

It is mainly professional investors⁸ who invest in AIFs. This means that households and private investors still prefer to invest in UCITS funds, which is in line with the original purpose of the legislation. It also indicates that the general trend of search for yield has not resulted in a shift of households' available capital to AIFs, but only a shift towards more risky funds within the UCITS regime; see Section 2.

Household assets in AIFs constitute a minor part of the total assets under management in AIFs. The reports to the Danish FSA show that household assets in AIFs primarily are invested through funds with investment strategies within equities and bonds as well as through hedge funds.

⁸ A professional investor is defined here as an investor with invested capital of more than EUR 100,000.

Theme 1: Danish actively managed funds make up the absolute majority of Danes' assets in investment funds

Danish investors, including households and insurance companies and pension funds, own approximately DKK 2,300 billion in investment funds. This corresponds to around 38 per cent of Danes' consolidated financial assets. It is therefore important that Danes own the right products in the investment funds assessed in terms of e.g. return, cost, risk profile, investment horizon etc.

Actively managed funds account for over 95 per cent of Danish holdings in investment funds. Passively managed funds therefore account for a very small proportion, also when compared with other countries. At the same time, Danish households invest primarily in Danish funds, while insurance companies and pension funds are more likely to invest in foreign funds.

The very limited use of passive funds and the high home bias raises the question whether Danish investors have put together the optimum mix of investment funds.

What are active and passive investment funds?

Active and passive funds differ in the way they handle the assets under management. The differences can be crucial in determining which fund type that suits an investor best in terms of risk profile, investment horizon etc. An investor should therefore always assess whether a fund's strategy fits with his preferences.

A passive fund is characterised by replicating the portfolio composition behind a particular benchmark. The C20 Cap index on Nasdaq Copenhagen is an example of a benchmark. The passive fund generally owns the same assets that are included in the benchmark, and weighs them accordingly. If a share represents 5 per cent of the chosen benchmark, for example, the fund will in theory invest 5 per cent of its assets in the same stock. The objective of the passive fund is thus to hit the market return.

A manager of an active fund tries to get the fund to provide excess returns relative to a chosen benchmark by buying and selling various assets based on market analyses and the manager's own soundings of the market. Unlike passive funds, active fund investments therefore need not be based on fixed rules and methods such as index replication.

In addition to pure active and passive funds, there are also partially active and partially passive funds. An example might be where a fund invests on the basis of quantitative criteria without involving a manager and without being tied to a specific index.⁹ Such quantitative criteria might mean, for example, only investing in equities with a price-earnings ratio below a certain level or assets where returns have been high for the last three months.

⁹ Examples are funds that use strategies such as Smart Beta, factor investing and enhanced index strategies, while some types of exchange-traded funds can also be considered partially active, see Box 3.

Passive funds typically have lower costs

The simple structure of the passive funds means that administration and transaction costs are typically lower than in active funds. One reason is that the passive funds have lower labour costs, because there is no need to produce investment analyses of different assets and the transactions can be executed by an algorithm. Active funds have higher operating costs as a result of their use of managers and analyses.¹⁰

The passive funds typically make fewer transactions because there is only a need to act on issue and redemption, or on a change in the index being tracked. Conversely, the active funds typically have a more frequent pattern of trades, driven mainly by a desire to replace bad investments and to hedge risks.

A fund's costs also depend on the chosen strategy, asset type, market focus etc. For example, a fund that wants to sell a large amount of less liquid assets will be forced by the size of the trade to lower the selling price significantly to find enough buyers in the market (market impact). Both active and passive funds can incur this cost. An investor should be aware of whether the strategy in a fund involves additional costs. This may be particularly relevant for active funds due to their greater investment flexibility.

Active funds may be managed more flexibly than passive funds

In passive funds, the asset composition is determined solely by the benchmark being tracked. If the benchmark includes a new asset, for example, the fund has to buy the asset in question. Managers of active investment funds, by contrast, have more scope to decide which assets should be included in the fund. This means that the manager can buy an asset for the fund if he believes that it is attractive.

At the same time, active funds can better satisfy the demand for niche products such as a special investment strategy or specific asset types and investment markets. This is due to the fact that the active funds are not limited by the existence of a benchmark with underlying assets that can satisfy the specific product demand. However, it is possible to have new, customised benchmarks set up by international index providers. However, this solution is expensive and so requires the fund to be large enough for the cost to be shared across many investment kroner.

The active manager's greater leeway to invest also allows him to hedge the fund's investments against a variety of risks by using financial products, such as derivatives. This increases the chances of adapting the fund's risk exposure and thus making the return more robust in the face of various events. This option is not generally available to the passive fund because its design means that it can only follow the benchmark asset mix.

¹⁰ See Nikolaj Holdt Mikkelsen, 2016, 'European fund expenses are decreasing in percentage', Morningstar.

Box 3: Exchange traded funds

An exchange-traded fund (ETF) is an investment fund traded on the stock exchange in the same manner as a share. The fund replicates an index for equities, commodities, currencies or a basket of different assets. Unlike an actively managed fund, an ETF does not attempt to 'beat' the market.

The ETF differs from the traditional passively and actively managed mutual funds in its underlying structure. Unlike traditional investment funds, it is not the fund itself that buys the underlying assets, but large institutional investors who subsequently transfer the assets to the fund. The fund will then issue ETF shares, which the institutional investor subsequently sells at market prices on the secondary market. The manager of an ETF also typically has more investment opportunities than traditional investment funds.

The market for exchange traded funds is booming

There are no Danish ETFs, but Danish investors can buy foreign ETFs in Denmark and abroad. In the first quarter of 2017, Danish investors held ETFs worth more than DKK 45 billion, of which households accounted for DKK 2.6 billion. The value of ETFs totals about 2 per cent of Danes' total assets in investment funds and equates to approximately 40 per cent of the passive investment funds. By comparison, the invested assets in the total European ETF market totalled around EUR 550 billion at the end of 2016. This matches the assets invested in the traditional passive investment funds.

The popularity of the ETFs must be viewed in the light of the fact that their expense ratio is typically significantly lower than in traditional investment funds. This is because the ETFs have very large assets under management and thus economies of scale. In addition, the supply of ETFs is major and offers investors access to a wide range of complex and exotic investments that are not available through traditional investment funds.

Great variation between the structure and risk profile of ETFs

Most ETFs resembles traditional passive funds in a number of respects, while others have more in common with active funds. There are also ETFs that make use of financial instruments which traditional funds do not use. These ETFs are typically very risky.

An ETF that invests directly in an index is called a physical ETF. The fund wholly or partially owns the underlying assets in the index, and has a number of characteristics in common with a passive investment fund. However, investors should be aware that some physical ETFs are leveraged, meaning the yield increases by a factor (typically a factor of 3) when the index rises. Conversely, the fund's return also falls by the same factor when the index falls. Leveraged ETFs are associated with high risk, as gearing on top of the volatility of the underlying index can result in large fluctuations in the fund's returns.

Rather than invest directly in an index, an ETF can own a derivative (e.g. a swap). The ETF then replicates an index through complex counterparty transactions and does not own the underlying assets. This form of ETF is called a synthetic ETF.¹¹ A synthetic ETF generally has a complex investment structure and is associated with a significantly higher risk than either the physical ETF or the traditional passive and active investment funds. A synthetic investment strategy typically involves a counterparty risk. Investors usually have limited information about these counterparties and this creates uncertainty in the risk assessment of the ETF.¹²

¹¹ According to Morningstar Direct, physical ETFs amounted to 80 per cent of the European ETF market at the end of 2016, while the synthetic ETFs accounted for the remaining 20 per cent.

¹² ETF structures and the many new types of ETFs, including synthetic and leveraged ETFs, are also identified by the Central Bank of Ireland as one of the main sources of risk; see Central Bank of Ireland, 2017 'Exchange-traded funds'.

Active and passive funds can together contribute to well-functioning markets

Whether an investor chooses to invest in an active or a passive fund is an individual decision and depends largely on his preferences. For the market as a whole, it may be an advantage that the investors are able to trade both active and passive funds, including that the supply of active and passive funds is sufficient relative to the demand, as this can have a positive effect on market efficiency and contribute to the smooth functioning of markets.

Active and passive funds have different characteristics and are not necessarily targeted at the same group of investors. However, they may to some extent be substitutable. If an active fund has e.g. very high costs, an investor may prefer to give up the flexibility of the active fund in favour of the lower costs in a passive fund.

The ability of investors to switch from an active to a passive fund can put a strain on the active funds and thereby cause the quality and price of the services supplied by active funds to improve in favour of the investor.

Active funds dominate the Danish market for investment funds

Passive funds represent a very small share of Danish investors' holdings in investment funds compared with other countries; see Figures 11a and 11b.

Figure 11a: Passive funds represent an increasing share globally...

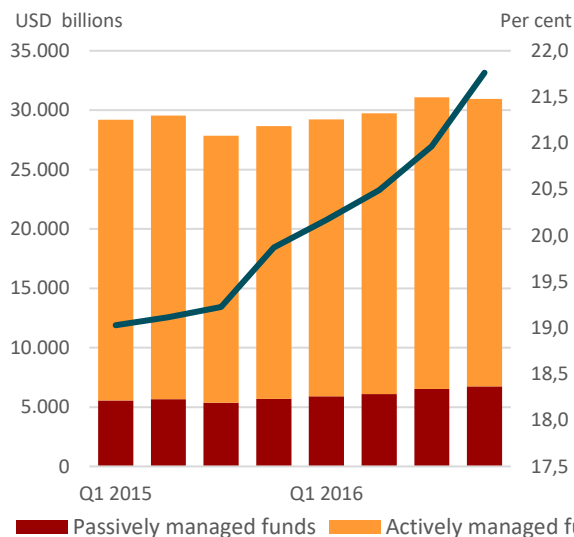
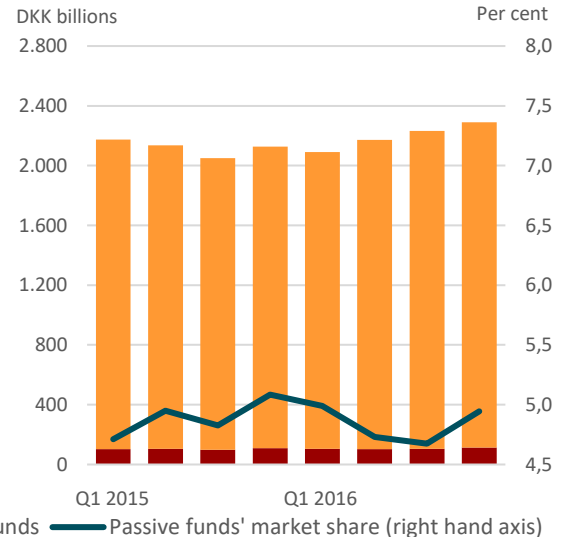


Figure 11b: ... but are not popular with Danish investors



Note: Global and Danish investors' holdings of active and passive investment products. Passive funds are here defined as funds whose strategy is to track an index. Data for Danish figures is described in Box 4.

Source: Financial Supervisory Authority, Danmarks Nationalbank, Morningstar Direct, Bloomberg and the Danish Investment Association.

Over the years, passive funds have globally gained market share from the active funds, and amounted to almost 22 per cent of the global investment fund market at the end of 2016; see Figure 11a. This development is largely driven by exchange-traded funds, partly because of

their cost-effectiveness, see Box 3, as well as new and more accessible distribution channels for passive funds.

Among Danish investors, the market share for passive funds remained largely unchanged in 2015 and 2016 and at the end of 2016 accounted for at just 5 per cent of the total holdings of units in investment funds, which corresponds to about DKK 110 billion; see Figure 11b.¹³

Box 4: Data for Danish holdings in investment funds

Data for Danish investors' shares in active and passive funds is based on securities statistics by ISIN code and data extractions from Danmarks Nationalbank.

The securities statistics are based on deposit information from VP Securities and reports from the largest non-financial and financial corporations. The statistics cover the sector-level Danish holdings of Danish investment certificates in Danish depositories and foreign certificates in Danish depositories. Certificates in foreign depositories are also included for the biggest financial and non-financial corporations but not for households. It is deemed however, that Danish households' units in funds invested in foreign depositories are limited.

Funds are categorised as either active or passive based on reports to the FSA, publicly available information from the Danish Investment Association and the commercial platforms Bloomberg and Morningstar Direct.

The data covers certificate-issuing funds, both listed and unlisted, from both Denmark and abroad. Holdings in non-certificate-issuing funds are therefore not included in the statistics. Moreover, all types of funds are included, including equity, bond and mixed funds etc.

Passive funds are used only a little by the large Danish investor groups

Danish investors hold only limited passive funds; see Figure 12a. In the case of insurance companies and pension funds, the low passive share may reflect a strategic choice, possibly due to better adjustment and hedging opportunities in active funds. Large investors can also usually conclude separate agreements with the managers or have dedicated funds set up, where e.g. administration costs can be negotiated down.¹⁴

The assets in passive funds are primarily owned by Danish financial companies other than insurance companies and pension funds (these other financial companies amounted to about 75 per cent of the 'Other' group); see Figure 12b. This means that both active and passive Danish investment funds that are part of the 'Other' group in Figure 12b also own parts in passive funds. Thus, households and insurance companies and pension funds, through their

¹³ Passive funds are primarily equity funds. It may therefore also be relevant to compare assets in passive funds to the total assets invested in equity funds – and not, as in the figure, relative to the assets in all fund types. The percentage of Danish investors' assets invested in equity funds, however, roughly corresponds to the proportion in the global market. Potential distortions in the comparison between Denmark and other countries caused by the method used are therefore deemed to have no real bearing on the overall picture.

¹⁴ For example, ESMA finds that the costs of Danish funds have roughly twice the effect on the reduction in returns to retail clients compared to institutional clients, and that this is relatively high compared to the rest of the EU; see ESMA, 2017, 'Trends, Risks and Vulnerabilities Report, no. 2, 2017', preliminary version.

holdings in active investment funds, have greater exposure to passive funds than their direct ownership interests would suggest.

Figure 12a: Passive investments represent a small share of Danish fund ownership ...

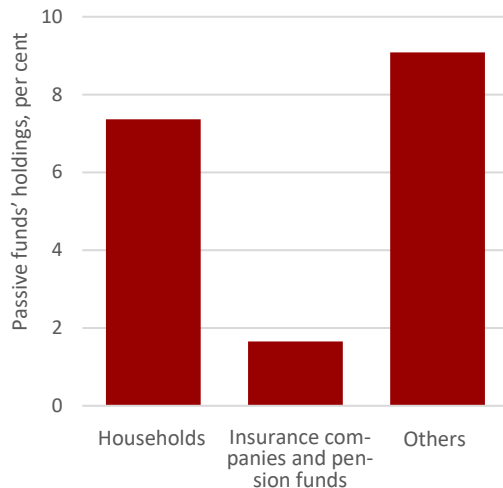
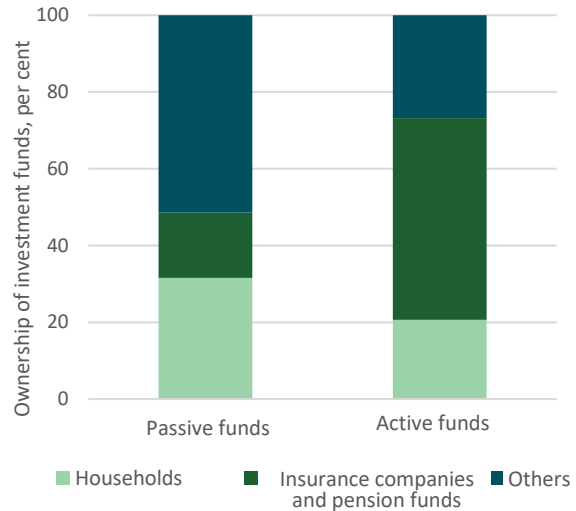


Figure 12b: ... and are driven by other financial companies



Note: The figure on the left shows passive funds' portfolio shares among the three investor groups, and the figure on the right illustrates the ownership distribution of Danish people's shares in active and passive funds. The data is from the end of 2016. 'Other' includes other financial companies and public and non-financial corporations.

Source: Financial Supervisory Authority, Danmarks Nationalbank, Morningstar Direct, Bloomberg and the Danish Investment Association.

Danish investors hold Danish funds

Domestic funds total approximately 95 per cent of Danish households' holdings in investment funds, whether actively or passively managed; see Figure 13a.

Only 5-10 per cent of the issued foreign mutual fund certificates (UCITS) were held by Danish households in the period 2015-2016.¹⁵ The tendency to prefer domestic investments is also reflected in household equity investments.¹⁶

The insurance companies and pension funds own mainly Danish funds when it comes to active funds; see Figure 13b. Conversely, only a very small part of the companies' passive funds is Danish and this share is also declining. Danish passive funds have difficulty in competing with foreign funds whose size results in significantly lower expense ratios than Danish funds can offer.¹⁷ For example, foreign exchange-traded funds with large assets under management can be a cost-effective alternative to a Danish passive fund.

¹⁵ Based on figures from Danmarks Nationalbank enriched with data from Morningstar Direct.

¹⁶ A high home bias for the Danish equity investments is highlighted by e.g. Jesper Rangvid et al., 2016 'Turning Local: home bias dynamics of relocating foreigners', working paper, Copenhagen Business School.

¹⁷ Nikolaj Holdt Mikkelsen, 2016, 'European fund expenses are decreasing in percentage', Morningstar, estimates the asset-weighted expense ratio in Danish passive funds at 0.59 per cent in 2016. In comparison, the level was 0.20 per cent and 0.30 per cent in the UK and Ireland respectively. For US passive equity funds, the asset-weighted expense ratio was estimated at 0.09 per cent in 2016; see Sean Collins and James Duvall, 2017, 'Trends in the expenses and fees of funds' Investment Company Institute.

Figure 13a: Danish households own domestic funds ...

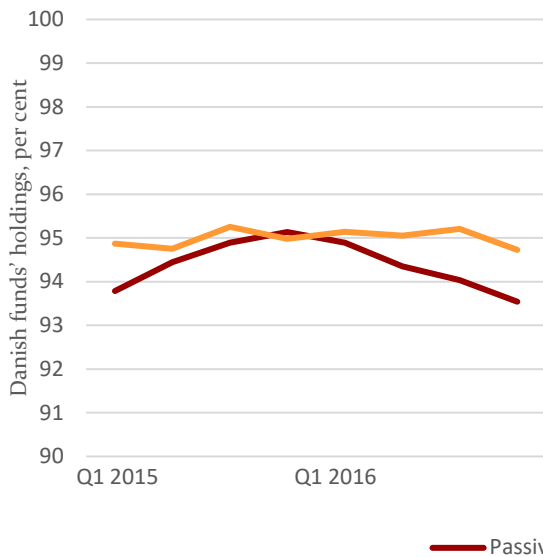
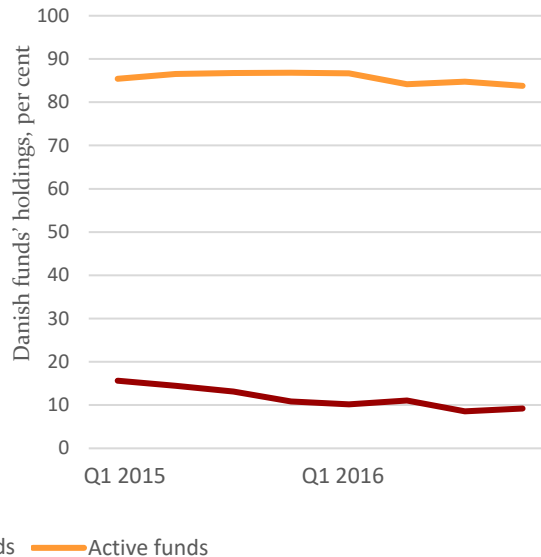


Figure 13b: ... while insurance and pension funds own foreign passive funds



Note: The figures show the Danish funds' percentage share of the total holdings of active and passive funds for Danish households and for insurance companies and pension funds.

Source: Financial Supervisory Authority, Danmarks Nationalbank, Morningstar Direct, Bloomberg and the Danish Investment Association.

Danish funds have delivered returns in line with funds in other countries

Danes generally own only actively managed Danish funds and thus have a composition of investment funds which is very different than what is observed abroad.

Danish investors' preferences may be the reason why they prefer domestic active funds. Other potential explanations are tax factors that give domestic funds an advantage compared to foreign funds, and possible barriers in distribution which limit the effective product offering to the investor.¹⁸ For example, there may be technological barriers in the form of a lack of IT solutions from individual distributors. On this point, however, Denmark has seen increasing development of new products that facilitate access to investment funds for general investors.

If distribution barriers are the primary explanation behind Danish investors' limited use of foreign funds, this will mean that they may have involuntarily missed out on cost-effective passive funds from abroad and that the functioning of the market could have been inhibited.

Danish funds in the period 2013-2015 delivered an average return after costs on a par with other countries, see Figure 14. This indicates that Danish investors' high home bias has not given them a lower return in the period. The funds' individual returns may vary greatly, and the

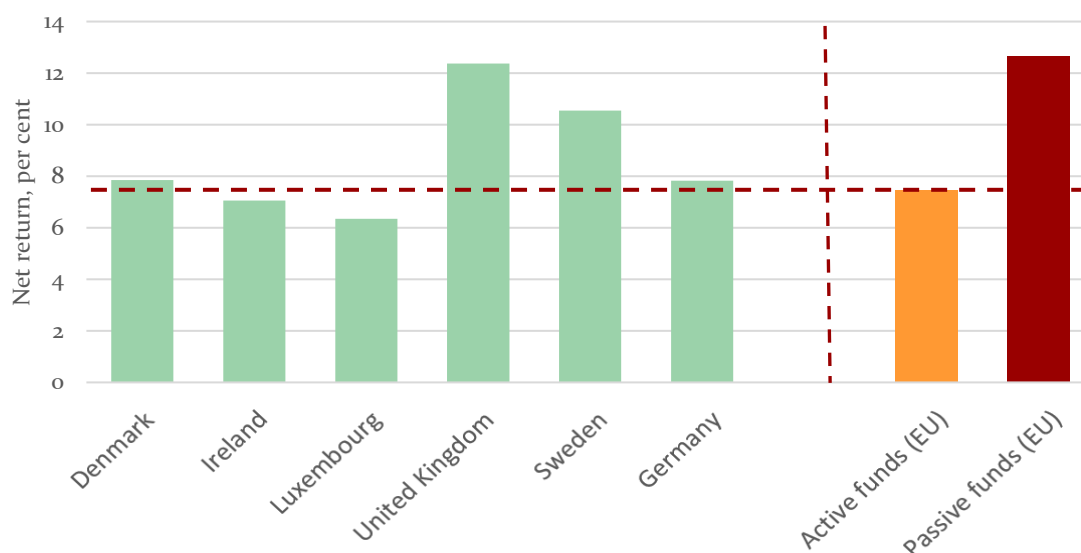
¹⁸ The distribution of funds in Denmark has been examined by Jesper Rangvid et al., 2017 'Switching bank: banking customer relationships and retail investors' choice of mutual funds', working paper, Copenhagen Business School. The conclusion was that the choice of bank has a major bearing on the funds that investors buy shares in, and that these funds are often in the same group as the investor's bank.

figure thus says something about the product offering generally, but not necessarily anything about individual funds.

At the same time at the European level, passive funds on average yielded higher returns after costs than active funds. This should be seen in the light of active funds' higher costs and the low interest rates that have put pressure on returns from funds, where the passive funds, primarily equity funds, have however benefited from significant gains in the equity markets. Based on Figure 14, it seems that Danish investors in the years 2013-2015 missed out on some extra returns due to their large holdings in active funds.

Past returns do not necessarily represent future performance. It is therefore conceivable that Danish funds will in future provide lower returns than foreign funds, or that active funds will provide higher returns than passive funds.¹⁹

Figure 14: Returns in Danish funds have been close to the European level in 2013-2015



Note: The figure shows the asset-weighted average of fund returns after costs, but excluding sales charges, for 2013-2015. The figures include all types of funds across asset and strategic focus.

Source: ESMA, 'Trends, Risks, and Vulnerabilities Report, no. 2, 2017', preliminary version.

In recent years, Danish active and passive funds have given the same average excess return

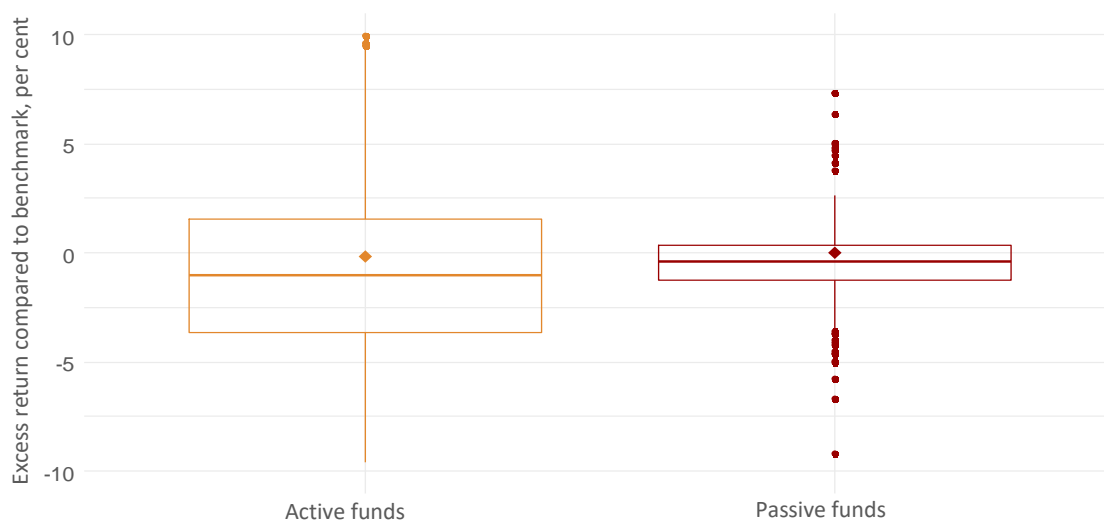
Based on Danish investors' major holdings of domestic active funds, it is relevant to examine how Danish funds have performed in relation to their targets, i.e. their chosen benchmarks.

¹⁹ For example, the UK Financial Conduct Authority (FCA) finds that, over a five-year period, approx. 50-80 per cent of UK funds will under-perform their benchmark at least once, and that they do not generally tend to over-perform over longer periods, see FCA, 2016 'Asset Management Market Study: Interim Report'. For Danish funds, Ken Bechmann and Mads Stenbo Nielsen, 2016 'Brokerage commissions and performance of Danish investment funds', Finans/Invest, no 1, 2016, find that only sub-funds with a 5-year investment horizon exhibit yield persistence in two consecutive years. At the same time, based on fee models, the working group on fee models finds that it is impossible unambiguously to determine whether active or passive management is at creating added value for the investor after costs; see FSA, 2015 'MiFID II and mutual fund payment of agency commission – report from the working group on fee models' (in Danish only).

Active funds are often presented as funds that can beat their benchmarks and thus have an advantage over passive funds. The excess return can serve as a measure of whether the fund offers a higher return than the selected benchmark. The excess return represents the difference between the net return, i.e. the return after costs for the fund and the selected benchmark. The goal is thus sensitive to which benchmark has been selected, and it says nothing about the strategy or the absolute return delivered by the fund.

For the period 2013-2016, both actively and passively managed Danish funds provided an asset-weighted return above the benchmark after costs close to, but slightly below zero; see Figure 15. This means that most Danish investors' assets were invested in active and passive funds which did not beat their benchmarks after costs.²⁰ At the same time, the average asset-weighted excess returns for passive and active funds were broadly the same in the period.²¹

Figure 15: Excess returns in the Danish equity funds averaged close to zero, 2013-2016



Note: Breakdown of annual excess returns in Danish equity funds in the period 2013-2016. Data for excess returns comes from Morningstar Direct and includes observations for 544 and 83 active and passive equity funds respectively. Adjusted for operating costs, including commissions but not sales charges such as front load and back load charges. The box shows the first and third quartile and the median, and the diamond shows the asset-weighted average for the period. Circles indicate outliers.

Source: FSA and Morningstar Direct.

Active funds have higher costs than passive funds as a result of the way the assets are managed, see above. This may mean that the active funds before costs were more likely to beat their benchmarks than the passive funds in the years 2013-16, although there are differences between the individual funds. For most active funds, costs have however balanced the gain from active management, which has therefore not been passed on to the investor.

²⁰ This conclusion may be sensitive to the benchmarks used. Refer to the report from the working group on fee models from 2015, 'MiFID II and mutual fund payments of agency commission' (in Danish only) for a review of the literature on returns and performance in Danish funds.

²¹ This is also seen in Ken Bechmann and Mads Stenbo Nielsen, 2016 'Brokerage commission and performance of Danish investment funds', *Finans/Invest*, no 1, 2016. They also find that the tendency is insensitive to the investment horizon, as the average excess return in active and passive Danish funds is negative and close to zero for an investment horizon of 1, 3, 5 and 7 years.

In the years 2013-2016, the excess return from active funds had a wider spread than among passive funds – and thus greater uncertainty about the return an active fund would provide relative to the benchmark. An investor was therefore best off investing in a passive fund in the period, if he wanted a return close to a given benchmark, e.g. because he did not want the extra risk that can accompany positive or negative excess returns.

Factors other than returns may affect an investor's choice of investment fund. For example, if an investor wants a specific risk profile, to follow a particular strategy or to expose himself to a specific market or asset class, the greater investment flexibility of active funds often makes them an attractive option, even though they may provide less stable returns relative to the benchmark. An active fund with high costs and high yield spread may well have its basis of existence, even though there may be a cheaper passive fund with the same benchmark. This assumes that the active fund meets a specific demand in the market and has a strategic objective that cannot necessarily be expressed through a benchmark alone, and so is not offered by a passive fund.

Theme 2: New MiFID II rules should enhance investor protection

From 1 July 2017, investment firms (banks and other distributors) in Denmark are no longer allowed to accept and retain commission payments (inducements) from third parties (e.g. an investment fund) in relation to the provision of portfolio management to a client

If an investment product has a cost structure that involves commission payments, which writes down product returns, then the distributor will in future only be allowed to use this investment product in portfolio management schemes if the distributor transfer the commission payments on to the client that receive portfolio management service.²²

The purpose of the commission ban is to remove the distributor's incentive to act against the client's best interest. The purpose of the ban is to remove an incentive to choose commission-paying investment funds over others when the distributor chooses products as a for the client's portfolio management arrangements.

Requirement for quality-improving service by commission

The ban on commission payments is the first stage in Denmark's introduction of the common European rules in MiFID II on investor protection. The second part comes into force on 3 January 2018.

The second part includes requirements for banks and other distributors to provide a quality-enhancing service to the clients if they receive commission from third parties in connection with the provision of an investment service or an ancillary service. This applies both when distributors provide clients with investment advice, and when providing 'execution only' services. The second part also contains requirements that the service provided by the distributor provider must be proportionate to the payment which the distributor receives.

Distributors must meet new extended requirements on information about costs. Investors must be informed of the total cost of investing as a single amount. This amount must include the product costs and the costs of the service provided by the distributor, such as the associated portfolio management service.

The sector is adjusting its business models

Mutual funds, managers of alternative investment funds, banks and security dealers are in the process of adapting their business models to the new rules.

Several mutual funds have set up new unit classes as a consequence of the new rules. These are mainly share classes without commission, as well as some share classes that are not exchange-listed. Banks and other distributors may use the unit classes with no commission when providing portfolio management to clients. This allows the bank to comply with the commission ban without having to send money to the client.

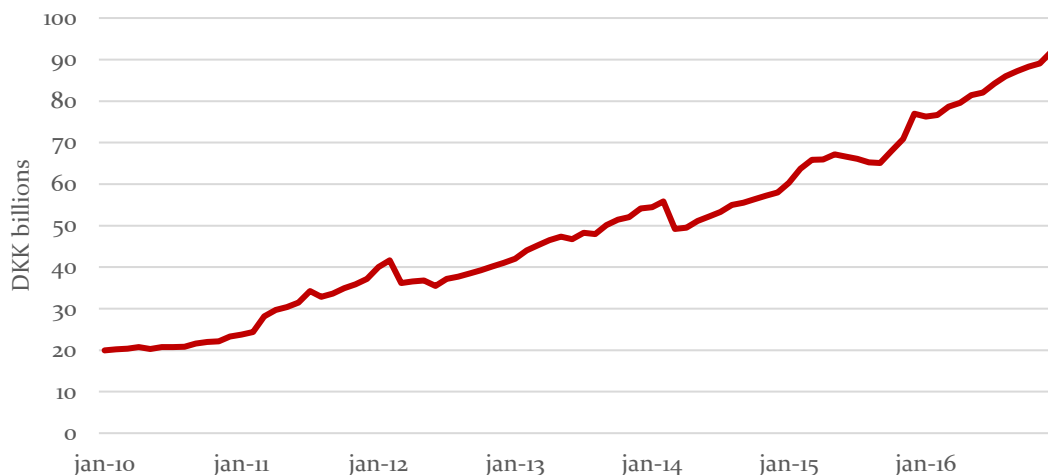
Several mutual funds are also creating new mixed (commission-paying) sub-funds.

²² The commission ban was enacted by Act no 632 of 8 June 2016 (in Danish only).

The new mixed sub-funds created are primarily mixed funds based on an investment strategy with investments in other equity and bond funds (so-called ‘funds of funds’). One reason for setting up the sub-funds is for them to be used by the banks for customers who receive investment advice in return for paying commission. The new rules require the bank to provide a quality improvement service that is proportional to the amount of the commission.

Members’ assets in mixed UCITS funds increased significantly throughout the period from early 2010 to the end of 2016; see Figure 16. At the same time, in the first half of 2017, the FSA saw a growth in the number of applications to set up new mixed sub-funds, which are based on a ‘fund of funds’ investment strategy.

Figure 16: Members’ assets in mixed UCITS funds have increased



Note: The figure shows members’ assets in all mixed UCITS sub-funds, only some of which are ‘funds of funds’ sub-funds which invest in other funds.

Source: FSA.

The FSA’s interpretation of the rules

In February 2017, the FSA published its interpretation of the ban on inducements from third parties in relation to the provision of portfolio management to a client.²³

The purpose of interpretation is to guide the financial industry before the rules take effect. This may help companies to ensure that they do not set themselves up in a way that they subsequently have to change.

According to this interpretation, banks and other distributors in particular will be reluctant to accept payments for distribution, sales and marketing from e.g. mutual funds when providing portfolio management to clients.

²³ See FSA letter ‘Guidance on the FSA’s interpretation of the MiFID II rules on commission payments relating to portfolio management arrangements’ of 24 February 2017 (in Danish only).

On the other hand, it is acceptable for banks and other distributors to receive payment if an investment fund has outsourced its administration and/or management to the bank. The dividing line is where the payment actually depends on the distribution effort.

Future focus on this area

The FSA will monitor closely how the MiFID II rules on e.g. commission payments are implemented in the rest of Europe, and is participating in the work being undertaken by the European Securities and Markets Authority (ESMA) in this area.

The FSA will also monitor the growth of the market for sales of investment certificates. This applies, for example, to any shifts away from portfolio management schemes to products not covered by the commission ban. Among other things, this should ensure that the agreements that a mutual fund enters into with a bank for the provision of services do not prevent the fund from complying with the regulation stating that the fund should be administered in the interests of its members.

Theme 3: Liquidity management in Danish UCITS

In the autumn of 2016, the Danish FSA conducted a survey of the liquidity management in Danish investment management companies (IMs) and their underlying UCITS funds.²⁴

The survey shows that liquidity management depends partly on the investment strategy in each sub-fund, and that various factors (e.g. insufficient data quality) complicate the management and monitoring of liquidity in especially fixed income funds. The survey also shows that Danish UCITS have historically only experienced redemption pressure that could be handled without major adjustments.

Low interest rates have led to a shift towards less liquid assets and higher risk

The background to the survey includes the recent low interest rate environment which have made it necessary for IMs to rethink the focus and exposure of their funds. This rethinking has contributed to the funds in all asset classes moving further along the risk curve in search for yield, which has probably contributed to the increased liquidity risks in the funds.

Globally, there has been an increased inflow of capital into less liquid assets, such as corporate bonds, more exotic equities and the small-cap segment on the larger and more well-known stock markets. This gives rise to some concern in relation to the IMs' liquidity management, including whether the funds will be able to meet their obligations to investors under stressed market conditions.

For this reason, major international efforts have been launched in this area. In 2015, the International Organization of Securities Commissions (IOSCO) published a survey of selected countries to gain an insight into the existing legislation on liquidity, including the availability and use of tools to mitigate a potential liquidity pressure.²⁵

In early 2017 the Financial Stability Board (FSB) published a report which aimed to address the potential risks relating to liquidity, leverage and financial stability.²⁶ Their work has focused on assessing recent trends and changes in the structure of asset management activities, identifying and prioritising potential structural sources of vulnerability that could affect the global financial system and evaluate the existing legislation. The report sets out the final policy recommendations to address risks to global financial stability, ranging widely from reporting and investor disclosure to the use of liquidity management tools and stress tests. The Danish FSA has used these recommendations as input to its survey of liquidity in Danish UCITS.

In 2016 the European Systemic Risk Board (ESRB) established a working group composed of representatives from national central banks and supervisory authorities. The main objective was to work on the recommendations from the FSB, to make them more specific and ensure that they are consistent with the current differences between the national competent authorities (NCAs). . This is to result in a number of recommendations to ESMA and others; ESMA has a

²⁴ The study was conducted as a survey of selected Danish IMs.

²⁵ IOSCO, 2015, 'Liquidity management tools in collective investment schemes: results from an IOSCO Committee 5 survey to members'.

²⁶ FSB 2017 'Policy recommendations to address structural vulnerabilities from asset management activities'.

mandate to operationalise these recommendations to make them applicable across the NCAs. The Danish FSA is awaiting the final outcome of the international discussions.

Potential difficulties faced by the funds in their liquidity management

The FSA's survey is aimed at Danish IMs and their underlying UCITS funds. These funds are primarily offered to private investors. Therefore they are subject to legal requirements that the IMs must have a suitable process for risk management of the liquidity.²⁷ In addition, investors are generally entitled to redeem their shares at a correct NAV. However, redemptions can be postponed, when it is not possible for the fund to determine net asset value on account of market conditions, or for reasons of equal treatment of investors.²⁸

The survey is based on various questions to the IMs, broadly related to four main themes:

1. Processes for risk management of liquidity
2. Ex ante liquidity management
3. Ex post liquidity management
4. Experience with liquidity risks and redemption pressure.

The survey provides insight into the IMs' processes for liquidity management in the managed funds and focuses on the availability and use of various liquidity tools in practice in order to manage each fund's liquidity profile and meet the underlying obligations. The survey also illustrates the experience of IMs with redemption pressure and liquidity risk.

The survey provides the FSA with deeper knowledge of the IMs' liquidity management, and makes it possible to clarify the possible risks related to this. This is relevant to the FSA's future supervision of Danish UCITS and also serves as a good input to European discussions on the subject.

The four main themes in the survey will be reviewed below.

1. Processes for risk management of liquidity

Processes for risk management of liquidity are important since IMs are meant to ensure that there is consistent and systematic monitoring of the market and of each fund's portfolio. The processes should also ensure that any identified situation that could potentially put pressure on the fund's liquidity is analysed, monitored and communicated properly.

The responses to the survey show that IMs typically incorporate liquidity management in the development phase for each sub-fund. This involves a classification of market liquidity in the relevant asset classes, after which the portfolio's holdings within the individual asset classes can be determined.²⁹ For example, some IMs categorise Danish mortgage bonds as liquid and corporate bonds as less liquid.

²⁷ See Section 33 of the Executive Order on management, control and administration of Danish UCITS (Order no 865 of 2 July 2014) (in Danish only).

²⁸ See Section 74 of the Danish Act on Investment Associations (Consolidated Act no 1051 of 25 August 2015) (in Danish only).

²⁹ Market liquidity is defined by how quickly and cost-effectively the relevant asset can be converted into cash under both normal and stressed market conditions.

Some IMs report that they have investment guidelines which place appropriate and specific restrictions on the portfolio composition and liquidity profile in a sub-fund, if they think that their investment strategy exposes them to particular liquidity risks. This might be the case if the sub-fund has many high-yield corporate bonds, which are considered to be less liquid.

After establishing the sub-fund, the IM regularly (typically on a weekly basis) assesses the portfolio's liquidity profile and its ability to meet potential redemption obligations. Thus the company establishes a correspondence between the sub-fund's investment strategy (the asset side) and the overall composition of investors (the liability side).

If a potential liquidity problem is identified in the monitoring process, the employee responsible refers to the people with decision-making power, typically the management. The management will then decide how to proceed, possibly with a temporary suspension of issues and redemptions.

2. Ex ante liquidity management

The IMs use ex ante liquidity tools preventively in their risk management. The aim is to reduce the risk of later liquidity problems, where the fund is obliged to use ex post liquidity tools that could ultimately deprive investors' possibility to redeem their shares.

Many IMs report that they have internal models to supervise, monitor and evaluate liquidity risk in a sub-fund. This helps to ensure consistency between assets and liabilities in a sub-fund, which is done by adjusting the portfolio in good time if the allocation of assets is not ideal in relation to the liquidity risk.

The IMs often distinguish between asset classes in their liquidity monitoring. The monitoring in equity sub-funds is typically based on market data, such as the total turnover of each share (trading volume) on the market, which is a measure of liquidity, and the share as a percentage of the portfolio. On this basis, the IM can estimate how much of the portfolio it can sell of within e.g. 1-3 days. This is compared to developments in redemptions and issues. Where there is a mismatch, the IM may be prompted to rebalance the fund's portfolio.

Investments in certain types of bonds may be described as niche strategies, and the liquidity monitoring is often complicated by low trading volumes, and hence by a lack of consistent and transparent data.³⁰ At times this can result in an incomplete picture of liquidity and the current risks in the market.

The survey shows that there are several methods of tackling these difficulties. For example, one IM has developed an internal model which aims to quantify the overall level of liquidity in each sub-fund. This is based on a number of factors, including bid-ask spreads, ratings and the sub-fund's share of the total issuance of the bond on the market. These factors are used to calculate a liquidity score for each individual bond, which are added up to produce a total liquidity score for the entire portfolio. The score serves as a benchmark for the IM to determine which bond sub-funds should be given extra attention in its liquidity management.

³⁰ Certain types of bonds are typically traded over the counter (OTC), which can result in limited availability of data.

Ex ante liquidity management may also include stress tests, which should support asset managers' assessment of the impact of changes in asset liquidity and redemptions under stressed market conditions that may produce a liquidity shock e.g. by reducing the portfolio's liquidity level and/or increasing the redemption pressure from investors.

There is a big difference in the way in which IMs use stress tests in the liquidity management of their UCITS funds. For example, one IM runs four fixed monthly stress tests on its bond sub-funds, while another IM simply does not use stress tests for liquidity management of its UCITS funds. Most of the respondent IMs aim to improve their scenario analyses of bonds.

3. Ex post liquidity management

Ex post liquidity management includes tools that IMs can use to handle actual liquidity problems. Suspension of redemptions is generally the most extreme ex post liquidity tool available. Use of this tool may mitigate a potential liquidity problem, but it will also remove the ability of investors to redeem their shares in a given period.

Generally, IMs have several options that can act as liquidity buffers and thereby provide temporary liquidity to the relevant fund under stressed market conditions. One option is to take out a short-term loan of up to 10 per cent of the sub-fund's assets to meet redemption orders (this requires permission from the FSA).³¹ Another option is a temporary change of increases and reductions in the price relative to the actual trading costs, making it less attractive for investors to make trades. Many IMs believe that this option is one of the reasons why large redemption pressure has not historically materialised.

Based on the survey, the FSA also notes that most IMs do not have any predefined conditions that must be met before a liquidity tool can be activated. Most IMs make an assessment of the specific situation, which depends e.g. on the fund type, investment strategy and the specific facts of the particular situation.

4. Experience with liquidity risks and redemption pressure

The FSA's survey shows that Danish investment funds have historically experienced only redemption pressure that could be handled without major adjustments.

Many IMs report that, historically, major redemptions have typically been driven by large institutional investors. Against this background, IMs often have a close ongoing dialogue with major investors to ensure that the sub-fund is not suddenly faced with significant unforeseen redemption pressure. As a result, for example, it is often agreed beforehand that a redemption can be broken down into several smaller parts. Investors typically also have an interest in the redemption being processed at a speed commensurate with the market conditions.

Overall, the respondent IMs believe that there is not a real threat of redemptions from private investors and households. Historically private investors contribute only with limited trading activity as a result of an individual market events, such as Brexit or policy meeting of the US Federal Reserve.

³¹ See Section 68 of the Danish Act on Investment Associations (Consolidated Act no 1051 of 25 August 2015) (in Danish only).

Appendix

A1. Mutual funds and securities funds under supervision, 1 June 2017

	Number of sub-funds
BI Management A/S	45
Investeringsforeningen AL Invest, Udenlandske Aktier, Etisk	1
Investeringsforeningen Valueinvest Danmark	4
Investeringsforeningen AL Invest Obligationspleje	1
Investeringsforeningen BankInvest	26
Investeringsforeningen Nielsen Global Value	1
Investeringsforeningen Stonehenge	3
Investeringsforeningen Alm. Brand Invest	9
C WorldWide Fund Management A/S	7
Investeringsforeningen C WorldWide	7
Danske Invest Management A/S	134
Investeringsforeningen Procapture	8
Investeringsforeningen Profil Invest	2
Investeringsforeningen Danske Invest	84
Investeringsforeningen Danske Invest Select	40
Formuepleje A/S	13
Investeringsforeningen Absalon Invest	9
Investeringsforeningen Formuepleje	4
Handelsinvest Investeringsforvaltning A/S	15
Investeringsforeningen Handelsinvest	15
ID-Sparvest A/S	52
Værdipapirfonden Sparinvest	10
Investeringsforeningen Sparinvest	38
Værdipapirfonden Lokalinvest	4

Invest Administration A/S	16
Investeringsforeningen Carnegie Wealth Management	2
Investeringsforeningen StockRate Invest	1
Investeringsforeningen Lån & Spar Invest	6
Investeringsforeningen Gudme Raaschou	4
Investeringsforeningen Fundamental Invest	2
Investeringsforeningen Halberg-Gundersen Invest	1
Investeringsforvaltningsselskabet SEBinvest A/S	48
Investeringsforeningen MS Invest	1
Investeringsforeningen SEBinvest	18
Investeringsforeningen Wealth Invest	17
Investeringsforeningen Maj Invest	12
Investeringsforeningen SmallCap Danmark	1
Investeringsforeningen SmallCap Danmark	1
Jyske Invest Fund Management A/S	67
Investeringsforeningen Jyske Portefølje	13
Investeringsforeningen Jyske Invest	25
Investeringsforeningen Jyske Invest International	29
Nordea Fund Management, administered via Nordea Fund Management, branch of Nordea Funds OY, Finland	69
Investeringsforeningen Nordea Invest	39
Investeringsforeningen Nordea Invest Bolig	1
Investeringsforeningen Nordea Invest Engros	14
Investeringsforeningen Nordea Invest Kommune	2
Investeringsforeningen Nordea Invest Portefølje	13
Nykredit Portefølje Administration A/S	93
Investeringsforeningen HP Invest	3
Investeringsforeningen Nykredit Invest Almen Bolig	2
Investeringsforeningen Nykredit Invest	15
Investeringsforeningen BIL Danmark	1
Investeringsforeningen Nykredit Invest Engros	17
Investeringsforeningen Lægernes Invest	25
Investeringsforeningen Investin	18
Investeringsforeningen Multi Manager Invest	12

PFA Asset Management A/S	12
Investeringsforeningen PFA Invest	12
Quenti Asset Management A/S	1
Investeringsforeningen Amalie Invest	1
Syd Fund Management A/S	54
Investeringsforeningen Sydinvest Portefølje	6
Værdipapirfonden Sydinvest	8
Investeringsforeningen Sydinvest	37
Investeringsforeningen Strategi Invest	2
Investeringsforeningen Finansco	1
Tiedemann Independent A/S	5
Værdipapirfonden Independent Invest	3
Værdipapirfonden Independent Invest II	2

A2. Danish managers of alternative investment funds under supervision, 1 June 2017

Artha Forvaltning A/S
Axcel Management A/S
BI Management A/S
Britannia Invest A/S
Capital Four AIFM A/S
Copenhagen Infrastructure Partners II P/S
Copenhagen Infrastructure Partners P/S
Core Property Management P/S
Danske Invest Management A/S
Danske Private Equity A/S
DEAS Property Asset Management A/S
Ejendomsselskabet Norden I Management A/S
Fokus Fund Management A/S
Formuepleje A/S
Invest Administration A/S
Investeringsforvaltningsselskabet SEBinvest A/S
Investeringsselskabet Luxor A/S
IR Administration ApS
IWC Investment Partners A/S
Jyske Invest Fund Management A/S
Koncenton A/S
Kristensen Properties A/S
Maj Invest Equity A/S
Moma Advisors A/S
MP Investment Management A/S
Navigare Capital Partners A/S
Nordea Ejendomsforvaltning A/S
Nordens Management A/S
Nykredit Portefølje Administration A/S
PATRIZIA Fund Management A/S
PFA Asset Management A/S
Polaris Management A/S
Prime Office A/S
Quenti Asset Management A/S
Secure Alternative Investments A/S

Small Cap Danmark A/S
Strategic Investments A/S
Syd Fund Management A/S
Thylander Gruppen A/S
Tiedemann Independent A/S