




Investing with a mandate

Norges Bank Investment Management





**Our mission is to
safeguard and build
financial wealth for
future generations**

Investing with a mandate

The 30-year history

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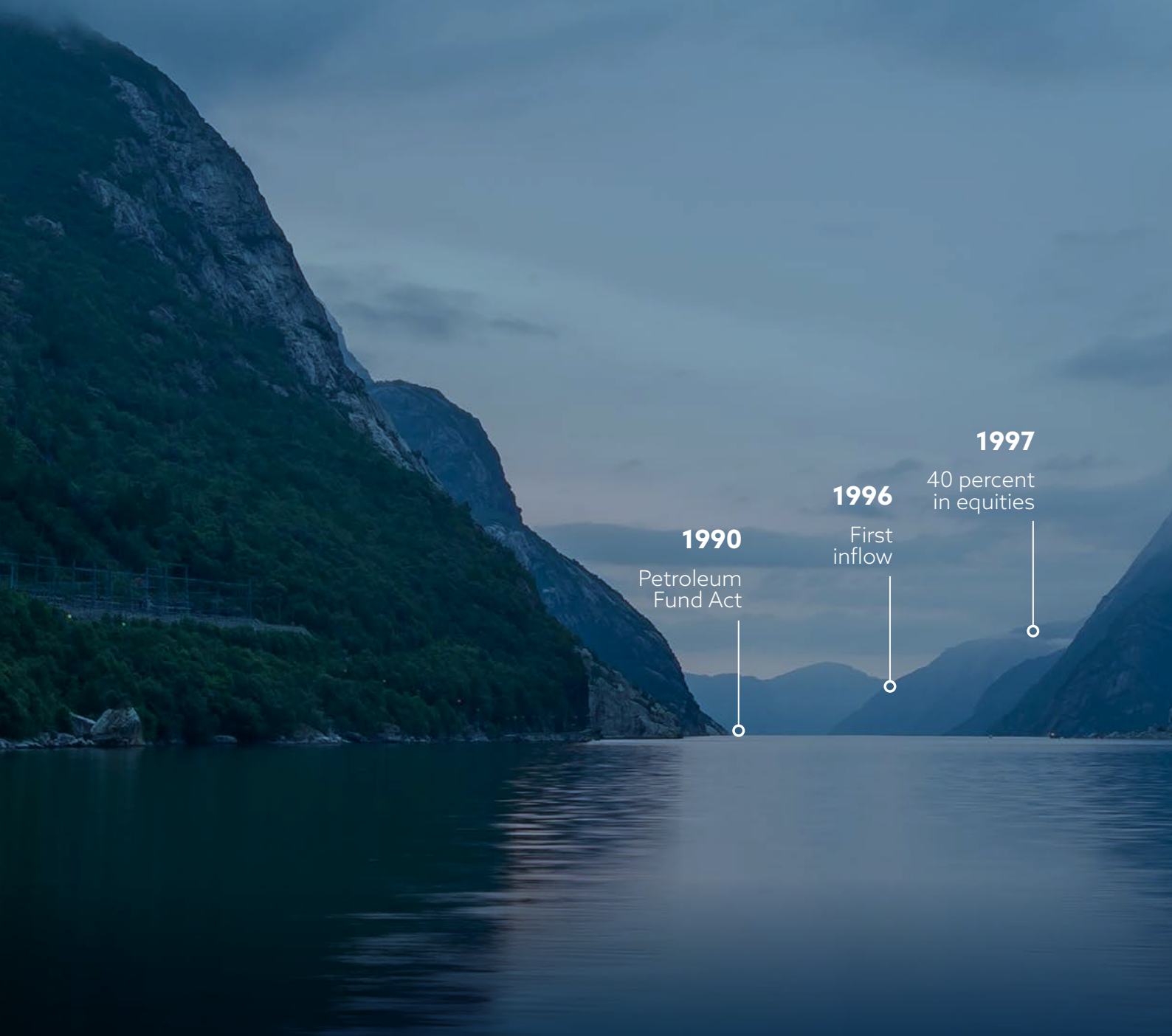
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The 30-year history

1990
Petroleum
Fund Act

1996
First
inflow

1997
40 percent
in equities





2019

10,000 billion
kroner in the fund

2017

70 percent
in equities

2010

Real
estate

2007

60 percent
in equities



Investing for future generations

Norway first discovered oil in the North Sea on 25 October 1969. Fifty years later to the day, on 25 October 2019, the market value of the oil fund hit 10,000 billion kroner. During this half-century, Norway went from being an oil nation to becoming an oil fund nation.

The creation of a fund to avoid the economic and social costs of swings in oil prices was first formally proposed in April 1983.¹ The fund was established in 1990, and the initial transfer from the government followed in 1996. Today, the fund is among the largest in the world and the single largest investor in listed companies. Its purpose has expanded from shielding the domestic economy from oil price fluctuations to saving for future generations. Owned by the people as a sovereign fund in an open democracy, it has a unique governance model and a level of transparency that is without parallel.

The fund's investment strategy has been reflected in the choice of a benchmark index and a mandate requirement to follow this index closely. Important changes have to the extent possible been expressed as adjustments to the benchmark index. The strategic direction of these changes has been fourfold: an increasing allocation to equities as the fund has grown and its investment horizon has been extended; a lower share of European assets as the emphasis on currency risk has faded; expansion of the investment universe with more countries, currencies, companies and issuers to better reflect the global financial markets; and a cautious move into other asset classes in the form of real estate and renewable energy infrastructure.

The important role of the index, and management close to this index, reflects the need for public accountability. The index has ensured that the mandate is clear and the measurement of results beyond reproach. The

preference has also been for liquid investments that can be represented by an index.

The choice and evolution of the benchmark index have been rooted in long-term viability rather than any market view or circumstance. Decisions have taken time so as to be anchored in the governance structure, and the process has been transparent so as to ensure legitimacy. Changes to the benchmark index have been gradual, and implemented over time even when market conditions were challenging.

As a savings vehicle for future generations, the fund has a very long investment horizon, and this has been reflected in the debate and the choices made over the years. Strategic decisions early on continue to play an important role. The Ministry of Finance and Norway's politicians deserve credit for bold decisions at an early stage and for sticking to the course in challenging market conditions.

I hope that telling the story of the fund's investment strategy from our perspective will contribute to the best possible investment advice in the future, and so to fulfilling our mission to safeguard and build financial wealth for future generations.

Oslo, 27 August 2020

Yngve Slyngstad

Chief Executive Officer

Norges Bank Investment Management



A clear objective

Since the early days of the fund, Norges Bank has served as an advisor to the Ministry of Finance on the fund's investment strategy. We provide advice to support the overall objective of the fund: the highest possible long-term return with an acceptable level of risk. Since I joined Norges Bank Investment Management more than a decade ago, I have been involved in various parts of this rewarding and challenging task.

The fund's investment strategy is set out in the management mandate issued by the Ministry of Finance. The fund's benchmark index is an important part of this mandate. In fact, the benchmark index determines how most of the capital in the fund is invested and explains around 99 percent of the historical variation in total fund returns. We have therefore devoted a whole chapter of this book to the development of the benchmark index.

The benchmark index has played a key role in the fund since its inception, as it expresses the most important elements of the fund's investment strategy. The index has evolved over time, but changes have been made with the long investment horizon in mind and implemented gradually.

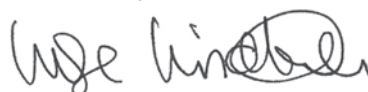
As we show, the investment decisions reflected in the benchmark index have had important financial implications. Some, such as the positive return effect from investing in equities, have been largely expected. Other choices have had larger implications than anyone anticipated.

For a long period, the index alone defined the fund's investment strategy. Today, our assignment is broader. In some areas, the fund's investments are compelled to deviate from the

benchmark index. We invest in assets not suited to benchmark inclusion and make other adjustments to meet specific mandate requirements. These decisions have a minor impact on the fund's total return compared to the choices made in the design of the benchmark index, but they are still important with a fund of this size.

Any changes to the fund's investment strategy and the benchmark index will normally be thoroughly discussed and supported by solid research and analysis. Less time has been spent looking in the rear-view mirror. Our aim with reviewing the investment strategy is to shed some light on these important decisions and learn from our own story in order to better support the overall objective for the management of the fund going forward.

Oslo, 27 August 2020



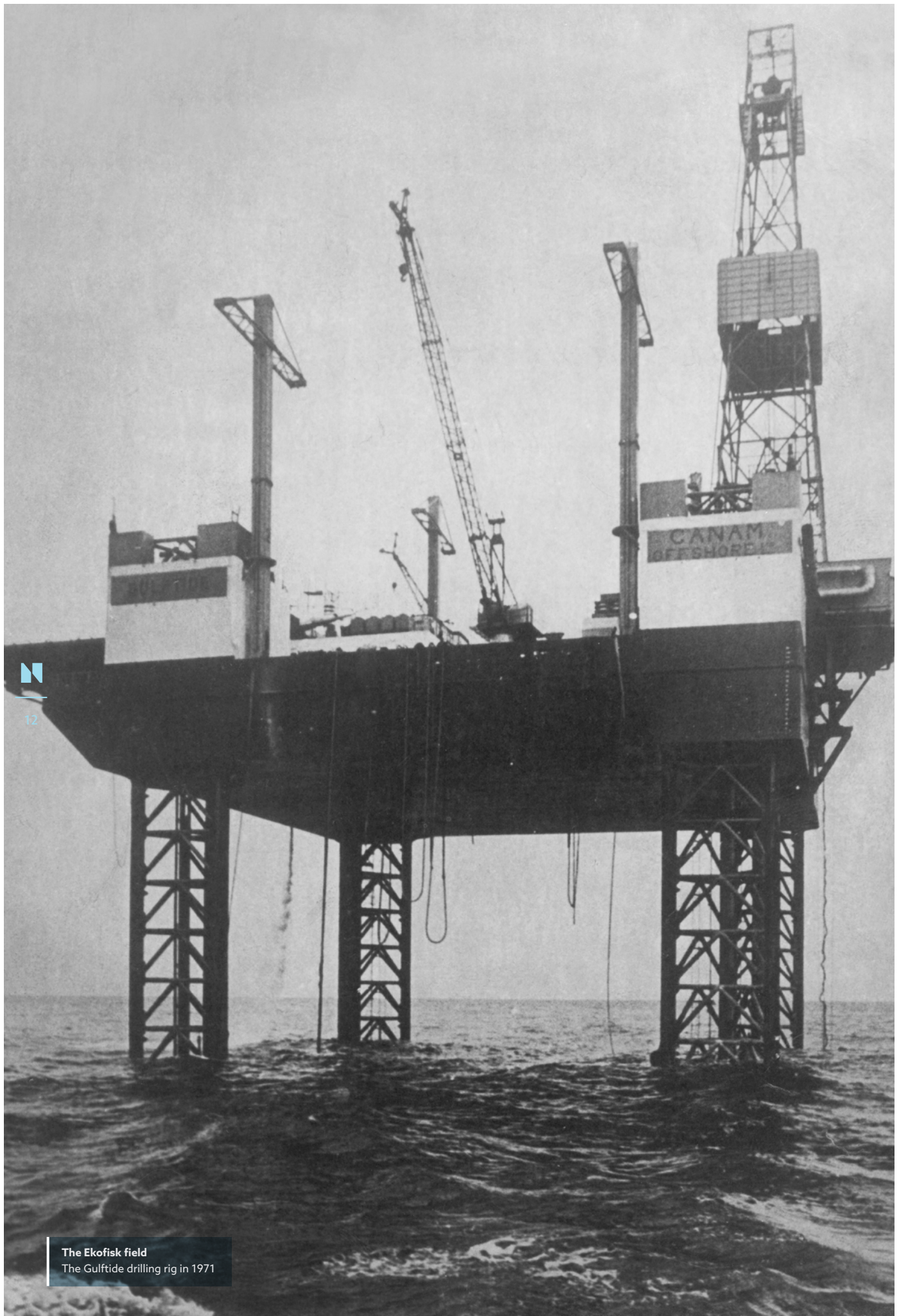
Lise Lindbäck

Global Head of Investment Advice
Norges Bank Investment Management

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The Ekofisk field
The Gulf tide drilling rig in 1971

The history

The discovery of oil in 1969 would go on to transform the Norwegian economy. The creation of an oil fund was first formally proposed in April 1983 after a period of rapidly rising government revenue from petroleum production. The idea then was to shield the economy from oil price fluctuations. Today, the fund is there to ensure that the nation's petroleum wealth benefits both current and future generations.

On 25 October 1969, Phillips Petroleum's drilling platform Ocean Viking struck oil southwest of Stavanger, marking the dawn of the petroleum age for the Norwegian economy. The Ekofisk field came into production in 1971, and by then the expectation was that its enormous reserves were only the beginning of the story.

Protecting the economy

How the emerging petroleum sector would affect the Norwegian economy was debated throughout the 1970s, and the Nordli government would discuss the consequences for key policy areas at length in a 1974 white paper.² Careful reading is required to find any mention of the management of future financial assets, but the report does note: "Considering the equilibrium of the Norwegian economy, it is not advisable that public income from petroleum activities should be used entirely for domestic consumption and investment. [...] A currency surplus invested abroad must be managed on the basis of guidelines given by political authorities."

The oil price shock of 1973 shifted oil prices to a persistently higher level. In February 1975, finance minister Per Kleppe proposed a new law on the taxation of petroleum production, arguing:³ "The very strong increase in petroleum prices, especially since the autumn of 1973, has created entirely new business conditions for

companies that produce petroleum in the North Sea. [...] Therefore, it has been important for the government to consider special measures to give Norwegian society a larger share of the value created."

The key measure was a special tax on the profits from petroleum production. The ensuing petroleum tax system has been a cornerstone of Norwegian petroleum policy ever since. The main aspects of the system remain in place today, with producers taxed 78 percent of their profits, subject to various rules on depreciation and amortisation.

Further large petroleum discoveries were made in the mid-to-late 1970s, most significantly the Statfjord field which would dominate Norwegian oil production in the late 1980s. The economic backdrop in the early 1980s was thus one of rapidly increasing petroleum production and high petroleum revenue, which enabled the government to accumulate financial reserves even in the absence of a formal fund structure.

Shielding the economy from oil price fluctuations

The idea of establishing a fund structure was first formally proposed by a public commission assessing the level of petroleum production in April 1983.⁴ The commission, headed by Norges Bank Deputy Governor Hermod Skånland,

warned that variations in government revenue stemming from changes in oil prices should not be allowed to impact directly on government expenditure. The commission considered it essential to accumulate a fund to serve as a buffer in order to avoid the economic and social costs of such variations. The commission acknowledged that the organisation and investment of a fund raised a number of questions, but concluded: "The establishment of the fund itself, in one form or another, is far more important than how it is organised and how it is invested."

The commission suggested that a fund would encourage long-term economic policymaking, but also noted: "A fund cannot replace the political authorities' own will to make long-term considerations the basis of policies."

The stage was set for the Willoch government to adopt the idea in the 1985 long-term programme and commit to a fund to support long-term considerations in the use of petroleum revenue and act as a buffer against unexpected variations in this revenue.⁵

New economic realities would challenge these plans. In 1986, Saudi Arabia abandoned its policy of cutting its own oil production in response to ever increasing output elsewhere. Prices collapsed, and so did Norway's petroleum revenue and the basis for continued accumulation of meaningful financial reserves by the Norwegian government.

Government savings established by law

The setback to the Norwegian economy was exacerbated by a domestic banking crisis from 1988 to 1993. The government budget balance was pushed deep into negative territory in the early 1990s. It was therefore clearly at odds with the economic trajectory when finance minister

Arne Skauge proposed a Petroleum Fund Act in 1990. The act established the fund as a fiscal policy tool to support long-term considerations in the use of petroleum revenue.⁶ It stated that the fund's income would consist of the government's net cash flow from petroleum activities – mostly taxes on the oil companies and income from the state's direct investments in oil production – and the return on the financial assets that would accumulate in the fund itself. Transfers out of the fund could only be made to the government budget by parliamentary decision.

The Petroleum Fund Act was passed unanimously by the Storting on 22 June 1990.⁷ The emphasis of the political discourse at the time was very much on the function of the fund in economic policy and resource management, rather than on the operational management of financial assets. The fund structure was a way to make the country's use of – and dependence on – petroleum revenue more transparent. In a time of budget deficits and a domestic banking crisis, government savings probably seemed only a distant possibility at the time. The act simply stated that the fund was to be managed by the Ministry of Finance and that the capital was to be held as "other government assets" – in practice an account at the central bank. The political consensus around the fund ever since those early days may well reflect the composition of the parliamentary committee at the time the Petroleum Fund Act was passed: Sigbjørn Johnsen, Gudmund Restad, Karl Erik Schjøtt Pedersen, Per-Kristian Foss and Kristin Halvorsen all went on to become finance minister in various governments, and Erna Solberg is the current prime minister.

Establishing the fund

The first inflows

Throughout the early 1990s, the non-oil budget deficit continued to exceed annual net petroleum revenue, and the fund structure remained an “exercise in accounting”.⁸ Towards the middle of the decade, however, the economy recovered, and net petroleum revenue increased. On 30 May 1996, finance minister Sigbjørn Johnsen was able to make the first actual transfer of 1,981,128,502.16 kroner to the fund account at Norges Bank.⁹ At the end of 1996, another 45 billion kroner was transferred to the fund.¹⁰ It appeared that the fund could become larger than expected, and that it could possibly serve a more important role than just a short-lived government buffer account.

The fiscal rule

The establishment of the fund had separated the decision on how quickly petroleum should be extracted from the decision on how quickly the government should spend its revenue from this production. A key motivation for the fund structure and the associated accumulation of savings on the part of the state was known in Norwegian political jargon as the “shark’s jaw” – the shape formed when the eventual downward curve in petroleum revenue was plotted against the expected upward curve in pension expenses. We have traced this argument back as far as the Long-term Programme published by the third Brundtland government in February 1993.¹¹

STATSADMINISTRASJONEN

Ved utbetaling gjennom skattefogd brukes blankett R-0058.
Se veiledning på baksiden.

**Anvisningsbegjæring til
Finansdepartementet**
Innk.

30 MAI 1996

Fra (departement) Finans- og tolldepartementet Anv. ktr. Dato 30. mai 1996

Finansdepartementet blir bedt om å beordre: Over postgiro Gjennom Norges Bank val. 31. mai 1996

Navn og adresse	Postgirokontonr. eller bankgirokontonr.	Kr.
Norges Bank Postboks 1179 0107 OSLO	0629.06.30019	1 981 128 502,16

By applying prudent, long-term fiscal policies, the ambition was that the Norwegian authorities would avoid “Dutch disease” and preserve the international competitiveness of the non-petroleum industrial sector. Such a fiscal policy framework was operationalised by the first Stoltenberg government in 2001, when savings were steadily accumulating in the fund. By the start of 2001, the fund’s value had grown to around 400 billion kroner or roughly a third of mainland GDP. Key to the fiscal policy framework was a rule that the government would seek to limit spending to a level consistent with the expected real return on the fund.¹² Although not binding in a legal sense, the rule was backed by a broad parliamentary majority and remains central in the political economic debate today.

The Government Pension Fund Global

In 2005, the second Bondevik government established the Government Pension Fund as a superstructure for the fund. The Government Petroleum Fund was renamed the Government Pension Fund Global, while the domestic savings vehicle Folketrygdfondet became the Government Pension Fund Norway. No institutional changes were made, but the purpose statement for the Government Pension Fund was expanded to include the support of state savings to finance national pension expenses and underpin long-term considerations in the use of the government’s petroleum revenue.¹³ The act did not, as the name might have implied, explicitly define future state pension expenses as a liability for the fund or change how the fund related to the government budget.

Saving for future generations

Intergenerational equity has been part of the public narrative around the fund throughout its history. Should the depletion of a non-renewable resource benefit only the current generation? While the new name was a step forward in clarifying why the government was accumulating these savings, the intergenerational perspective was not explicitly recognised in the fund’s purpose until 2019. As part of the work on the new Central Bank Act, finance minister Siv Jensen proposed an amendment of the wording specifically to include this perspective. The purpose statement now reads:¹⁴ “The savings in the Government Pension Fund shall support the funding of pension expenditure under the National Insurance Scheme. The savings shall facilitate spending of government petroleum revenues that reflects long-term considerations, thus ensuring that the petroleum wealth benefits both current and future generations.”

The fund remains fully integrated in the government budget process. The Government Pension Fund Act now states that government borrowing will not take place as long as there is capital in the fund.¹⁵ Any non-oil deficit in the central government budget must therefore be financed by a withdrawal from the fund. The fund thus serves as a long-term savings account which the government draws on to cover budget deficits. In 2019, around 17 percent of government expenditure was financed by transfers from the fund.

Chart 1 The value of the fund measured as share of Norway's GDP. Percent.

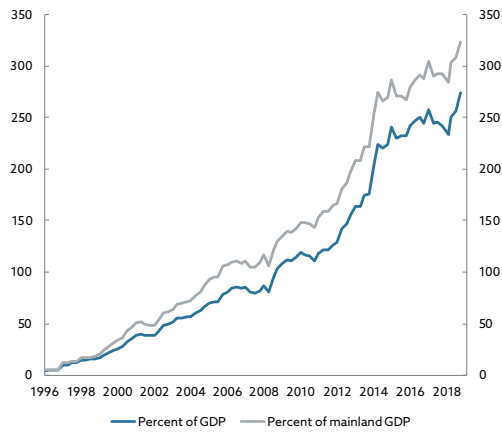


Chart 2 The value of the fund measured as years of import coverage. Years (left-hand axis) and billion kroner (right-hand axis).

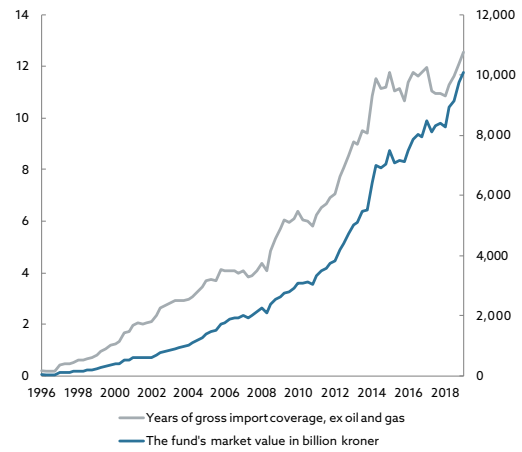


Chart 3 The "shark's jaw". Percent of mainland GDP.

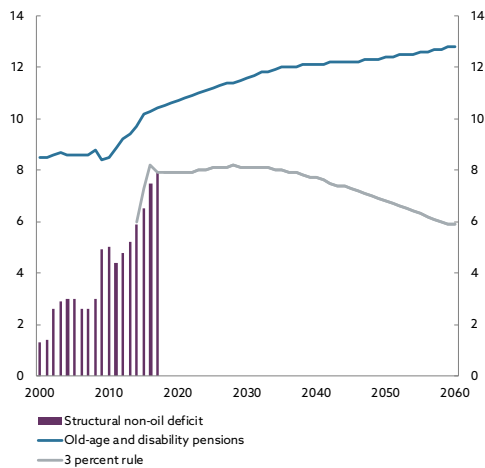
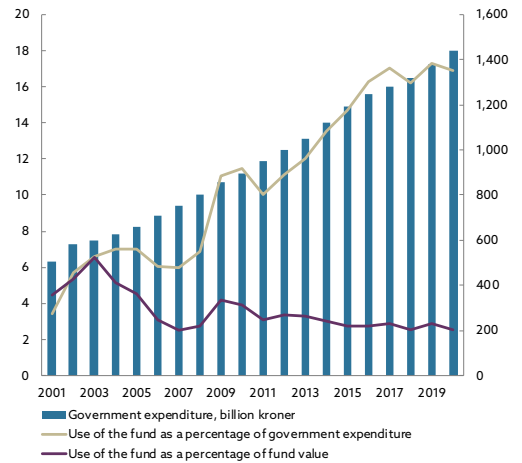


Chart 4 Government expenditure and the use of the fund to finance the structural non-oil deficit. Percent (left-hand axis) and billion kroner (right-hand axis).



The governance

The fund's governance and management framework has been developed within the Norwegian institutional and political context. This has resulted in a solution quite different from those of the fund's peers. Norges Bank has managed the fund since the government made the first transfer back in 1996.

Through the Government Pension Fund Act, the Storting has assigned the responsibility for managing the Government Pension Fund to the Ministry of Finance. The Ministry has in turn chosen to delegate the operational management of the Government Pension Fund Global to Norges Bank and issued guidelines for how this role is to be fulfilled. The Ministry has also decided that all major investment strategy decisions are to be presented to and discussed in the Storting. This extensive debate and scrutiny ensure democratic legitimacy in matters concerning the management of the fund.

The manager

An investment manager by default

The parliamentary committee that deliberated the Petroleum Fund Act in 1990 emphasised that it would not be necessary to set up a separate administrative unit to manage the fund's assets, making specific reference to the existing management of the foreign exchange reserves by Norges Bank.¹⁶

In 1995, it became increasingly likely that capital would accumulate in the fund, and it was time for the Ministry of Finance to resolve the issue of operational investment management. In the revised national budget for 1995, the Ministry stated, without further discussion, that the operational management of the fund would be delegated to Norges Bank, based on guidelines given by the Ministry.¹⁷ The first guidelines on the management of the fund were issued in May 1996 and based on the existing guidelines for Norges Bank's management of the long-term foreign exchange reserves.¹⁸

The appointment of the central bank as the manager of the fund was politically expedient. It put an arm's length between the politics and the savings. The central bank provided a well-established governance structure and a degree of institutional independence. It also meant that the government would not have to establish a new investment organisation that would not necessarily have the same institutional independence as the central bank.

An investment manager by contract

In March 1997, the Jagland government published the Long-term Programme for 1998–2001. The fund was now expected to reach 400 billion kroner by the end of 2001. Perhaps even more importantly, no withdrawals were expected before 2020.¹⁹ It became clear that the management of the fund would be a lasting assignment, even as some concerns persisted within Norges Bank with regard to reputational risk, organisational solutions and the internal ability to run a professional investment organisation. Norges Bank established a project group in May 1997 to prepare for these developments.

Knut N. Kjær, who led this group, aspired to establish a business-oriented and professional investment organisation within the central bank. The project group was able to establish an ambition within Norges Bank to build a high-quality, performance-driven investment organisation. On 1 January 1998, Norges Bank Investment Management was created with Kjær as its first CEO. At that time, the fund's value was 150 billion kroner.

A process to establish a long-term investment management framework continued throughout 1997. Norges Bank acted as the key advisor to the Ministry. Finance minister Jens Stoltenberg presented an investment strategy for the fund in the revised national budget for 1997, and secured parliamentary approval for concrete guidelines in the national budget for 1998. The new guidelines were issued in October 1997.²⁰

This first set of public guidelines defined the key concepts of the fund's investment strategy. However, it did not cover the working relationship between the Ministry of Finance and Norges Bank. An agreement to this effect was established in May 1999.²¹ This agreement

covered issues such as the use of external managers, remuneration and even the possible termination of the assignment. The agreement between the asset owner represented by the Ministry, and Norges Bank as the operational manager, was not made public.

An investment manager by law

As the fund grew in size and importance, the investment organisation became an ever larger part of Norges Bank, causing the question of the governance structure to be revisited more than once.

In June 2009, following the global financial crisis, the parliamentary finance committee asked the Ministry of Finance to assess the pros and cons of an alternative model with a separate board for the fund appointed directly by the Ministry.²² In the 2010 white paper on the management of the fund, the Ministry supported the existing structure.²³ It stated that management within Norges Bank had contributed to the legitimacy of the fund structure, as it was an institution of great integrity with a strong reputation. The Ministry did not see compelling reasons to change a well-regarded model.

In April 2015, the government appointed a commission to review the Norges Bank Act. An in-depth examination of the governance structure for the fund was not part of the original mandate for the commission, but the parliamentary finance committee, which had pushed for a wider discussion on the topic on several occasions, requested a broad review of alternative governance models for the fund.²⁴

The commission, headed by Svein Gjedrem, who was both a twice former Secretary General of the Ministry and a former Governor of Norges Bank, published its recommendations in June 2017.²⁵ It recommended that the fund should be

managed by a separate statutory entity and argued that having two separate entities would make it easier to tailor their professional competence and governing bodies to their specific needs.

In October 2018, the Ministry submitted a white paper on a new Central Bank Act.²⁶ In line with the 2010 discussion, the Ministry emphasised that Norges Bank was a trusted institution of great integrity that had achieved good results over time in both central banking and asset management. In addition, the Ministry expressed explicit concerns that principal-agent problems could arise at an independent institution with goals and priorities not fully aligned with those of the asset owner. This position was supported by the Storting.²⁷

In April 2019, the Ministry concluded the discussion by anchoring the role of Norges Bank as operational manager of the fund directly in the Central Bank Act. It can thus be argued that Norges Bank became the fund's manager by default but is now the operational manager of the fund by law.

The advisor

Norges Bank is an advisor to the Ministry of Finance on matters of economic policy. When Norges Bank's role as the operational manager of the fund was confirmed in 1995, this advisory capacity naturally extended to the investment framework for the fund. In February 1996, as the prospect of the first transfer to the fund loomed, Norges Bank was asked to propose guidelines for the operational management of the fund.²⁸ In August 1997, Norges Bank proposed that the Ministry of Finance should set the long-term investment strategy to meet the fund's investment objective, and that the role of Norges Bank as operational manager should be to achieve the highest possible return within the constraints imposed by the guidelines from the Ministry.²⁹

These principles formed the basis for the management framework that the Ministry presented to the Storting in the national budget for 1998.³⁰ The 1998 management agreement gave Norges Bank the right to advise on any changes to the management framework. When the management agreement was updated in 2001, the mandate spelled out that Norges Bank also could put forward proposals on its own initiative.³¹ This highlighted that Norges Bank was not only the operational manager of the fund, but also an important advisor to the Ministry.

Advice from Norges Bank has been submitted in the form of publicly available formal letters. The Ministry's assessments of this advice have taken the form of open submissions to the Storting or letters to Norges Bank. The organisational set-up at the Ministry of Finance and Norges Bank is relevant to how this advisory role has been understood and implemented. From 1998 to 2006, the role was performed by a designated advisory unit under the Governor. Norges Bank's

relationship with the Ministry of Finance as a strategic advisor was further detailed in a 2004 addition to the management agreement.³² This stated that Norges Bank should seek to maintain all means of formal and informal dialogue with the Ministry in order to inform the decisions made by the Ministry. At the time, the Ministry had limited resources to conduct its own analyses and assessments, and the advisory unit could be seen partly as an outsourced resource for the Ministry and partly as an independent advisor.

In 2006, the responsibility for preparing advice for the Ministry was transferred to the investment management organisation, in part to better incorporate its operational experience and expertise into the advisory process. At the same time, the Ministry of Finance expanded its own capacity to conduct assessments of investment strategy through the establishment of a separate asset management department. This was achieved partly by a transfer of resources from the advisory unit at Norges Bank to the Ministry.

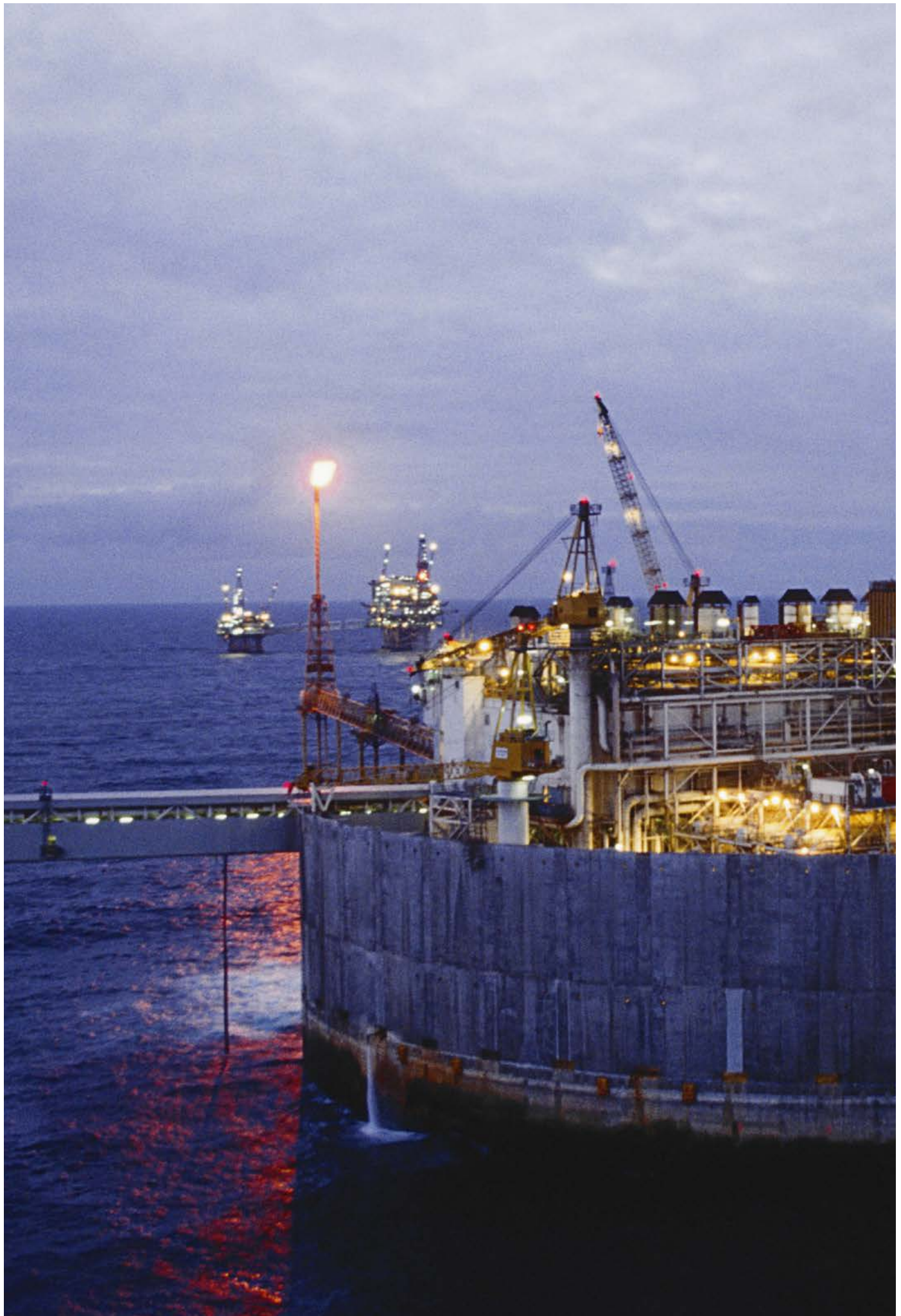
The establishment of a separate asset management department, together with the decision in 2007 to publish an annual white paper on the management of the fund, was an acknowledgement of the increased importance and complexity of strategic oversight of the fund. This was also reflected in an ambition set out in the first white paper dedicated to the management of the fund:³³ "The government aims to make the Government Pension Fund the best-managed fund in the world. This requires aiming for best international practice when managing the fund."

The Ministry's assessment of topics of strategic importance for the management of the fund will normally be presented in the annual white paper

submitted to the Storting. To aid in its assessments, the Ministry has obtained independent third-party advice from external experts on strategic topics. This comes in addition to advice provided by Norges Bank. In recent years, the Ministry has made increased use of public committees to provide analysis and recommendations as a basis for strategic decisions. This is a more public process, and the report from the committee will normally be put out for public consultation.

Ever since the fund's inception, Norges Bank has had a mandate with two main components: investing the fund and advising on investment strategy. We invest the fund with the aim of maximising return within the constraints imposed by the management mandate. We advise on improvements to the management mandate to help achieve the overall purpose of the fund as defined in the Government Pension Fund Act.

As the fund has grown in size and importance, the strategic considerations have also become more complex. Processes leading up to changes in the investment strategy may therefore run over several years, and the bar for strategic changes has risen.



The mandate

The management mandate defines what the fund may be invested in, the acceptable level of risk, and a set of expectations for how Norges Bank, as operational manager, should manage the fund.

The objective for the management of the fund is to achieve the highest possible return within the constraints imposed by the mandate. This objective has remained unchanged since Norges Bank first took on the management assignment. The management mandate, however, has changed considerably over time.

The first mandate in 1998 defined a narrow investment universe, with tight constraints on relative risk exposure relative to the benchmark index. Since then, the mandate has evolved to reflect the trade-offs between different priorities. On the one hand, Norges Bank has often argued for greater delegation and a broader investment universe to help achieve the objective of the highest possible return. On the other hand, the Ministry of Finance has aimed for a transparent model revolving around indices of liquid securities and focused on management around this index. Over time, the mandate has also been adjusted to reflect growing expectations that the fund should be invested in a way that is responsible.

The level of detail in which the Ministry of Finance specifies the management assignment for Norges Bank has grown over the years. At the same time, the mandate has increasingly required Norges Bank to involve the Ministry before making decisions. Some matters that were previously delegated to Norges Bank now have to be submitted to the Ministry before Norges Bank can make a final decision. This principle applies to a wide range of areas, from the Executive Board's strategic plan to fairly detailed risk limits for unlisted investments in renewables and real estate.

The universe

The fund's investment universe has evolved over the years, and today the fund may be invested in both listed and unlisted assets across a broad set of markets and financial instruments.

The listed universe

In 1998, the investment universe consisted of liquid and traded securities in developed equity and fixed-income markets. A key feature was a specific list of approved countries. Equity and fixed-income investments could only be made in markets on this list. Since then, additional markets, instruments and issuers have been added to both the equity and the fixed-income universe.

The investment universe for the fund's equity investments now includes all equities listed on a regulated and recognised marketplace. In practice, this means that the fund can buy listed companies all over the world, with only a few exceptions. These exceptions are Norwegian companies, companies excluded on ethical grounds under the guidelines for observation and exclusion, and companies classified by FTSE Russell as crude oil producers.

As with listed equities, the fund's opportunity set for fixed-income investments is broad. The fixed-income universe includes all tradable debt instruments, with only a few exceptions. These exceptions include bonds issued by Norwegian enterprises, bonds issued in Norwegian kroner and bonds issued by governments where the Ministry of Finance has barred investments based on the adoption of UN sanctions.

The unlisted universe

The fund can also invest in unlisted real estate and unlisted renewable energy infrastructure. Unlisted real estate became part of the fund's opportunity set in 2010, while infrastructure for renewable energy was not included in the investment universe until late 2019. Real estate is defined as rights to land and any buildings located thereon. Renewable energy infrastructure is defined as land, real estate and onshore or offshore facilities that are principally used or intended for use in the production, transmission, distribution and storage of energy based on renewable sources.

The unlisted investment universe is one example where Norges Bank has argued for a broader investment universe and greater delegation, while the Ministry of Finance has often been more cautious. Norges Bank first assessed unlisted investments in 2002 and recommended that they should be part of the fund's opportunity set. Unlisted investments have been a frequent topic of discussion ever since. In addition to real estate and infrastructure, unlisted equities have been on the agenda on four occasions, in 2002, 2006, 2010 and 2018.³⁴ Since 2006, Norges Bank has recommended that they too should be included in the fund's investment universe.

The index

The concept of a benchmark index was established in the early days of the fund and has played a pivotal role in how the fund has been managed since the very beginning. In August 1997, Norges Bank suggested that the strategic choices made by the Ministry of Finance could be specified by defining a benchmark index, and indicated that Norges Bank as operational manager would use this index as a basis for its actual investments.³⁵ The benchmark index has since served this purpose. Today, the benchmark index consists of listed equities and tradable bonds only. As such, it is narrower than the fund's investment universe.

The fund's benchmark index is a combination of top-down allocation decisions and security-level indices representing the various asset classes. The top-down allocation has evolved over time, with two main trends: a growing allocation to equities, and a broader representation of both fixed income and equities. The desired exposures at the security level within the two asset classes are defined using commercial indices provided by FTSE and Bloomberg. The strategy has been to facilitate a portfolio spread across many different markets and over a vast number of individual securities. We find support for this approach in the academic literature, particularly for equities.

External index providers have played an increasingly important role in the composition of the fund's benchmark index. Since 2008, the decisions on which countries to include in the equity benchmark have been outsourced to the index providers. The index providers also decide which securities to include and the timing of inclusion or exclusion. They will also make frequent changes at the security level to ensure that the index fulfils the needs of its typical users. As a manager, we therefore need to trade

frequently in order not to stray too far away from the benchmark index.

The strong reliance on index providers also has other implications. For instance, the weight assigned to a specific company in a broad equity market index does not necessarily reflect the full market value of the actual company, but rather the market value of the shares that the index provider classifies as available in the market, known as the free float. Another example is duration, or interest rate sensitivity. Duration measures how long it takes, in years, for an investor to be repaid the price of a fixed-income investment through the total cash flows from the investment. Analysis of the fund's historical return reveals that duration has been the second-most important driver of fund returns behind the equity premium. Despite this, the question of optimal duration exposure has been absent from discussions about the composition of the fund's benchmark index.³⁶

The way that the benchmark index has been used in the management of the fund means that the Ministry of Finance takes the risk associated with designing the index, and Norges Bank takes the risk of deviating from this benchmark. The deviation of the fund's portfolio from the benchmark is limited by the investment universe and a set of mandate requirements. Ever since 1998, the scope for deviations from the benchmark index has been limited. The composition of the benchmark index has therefore been very important for how the fund has been invested.

The restrictions

The fund's management mandate, laid down by the Ministry, includes a broad set of requirements, including quantitative restrictions, qualitative requirements and reporting requirements. The combined set of requirements determines to what extent we can put together a portfolio that deviates from the composition of the benchmark index. Along some dimensions, however, the mandate actually compels us to invest differently to the benchmark.

Quantitative restrictions

From inception, the key political premise was that the fund was to be a financial investor and that any perception of strategic ownership of companies would blur the financial objective and complicate its management. In the national budget for 1998, special consideration was given to the fund's ownership stake in individual companies.³⁷ To underscore that the fund was a financial investor, it was decided to limit holdings in any one company to 1 percent. This was below the 3 percent proposed by Norges Bank. As time has passed, and the fund has grown in size and importance, the interpretation of the requirement to be a solely financial investor has evolved. However, the fund is still prevented from gaining strategic ownership of any listed company through a limit on its percentage holdings in individual companies. This limit has, however, been gradually raised, most recently in the 2008 white paper to today's 10 percent.³⁸ Investments in real estate and unlisted infrastructure are exempt from this ownership limit.

The 1998 mandate included a number of quantitative restrictions. The target allocation to equities and fixed income as well as the regional allocation were defined in terms of fairly wide intervals: 50–70 percent fixed income, 30–50 percent equities, 40–60 percent Europe, 20–40

percent America and 10–30 percent Asia-Pacific. The initial mandate also included a requirement to keep the duration of the portfolio between three and seven years. The most important decision was to use the mid-points of these intervals to construct the benchmark index.

Since 1998, the key quantitative restriction has been a limit on tracking error, or relative risk. This restriction determines to what extent the actual portfolio can deviate from the benchmark index. The tracking error limit in the initial mandate was set at 150 basis points, or 1.5 percentage points. An intuitive interpretation of the restriction is that the fund's return was expected to lie within a 1.5 percent band on either side of the benchmark index return in two out of every three years. This level was chosen partly to facilitate cost-efficient implementation of the benchmark index and partly to allow a degree of active management.

In a letter in 2005, Norges Bank argued that the tracking error limit was a sufficient risk constraint, and that most of the other restrictions in the mandate should be lifted.³⁹ The Ministry supported the direction of this advice in the national budget for 2006, removing several of the other restrictions in the mandate.⁴⁰ Its view changed after the global financial crisis, however, as the fund breached the tracking error limit in October 2008.⁴¹ This led the Ministry to introduce additional restrictions on the fund's operational management.⁴²

The new mandate was presented in the 2010 white paper on the management of the fund.⁴³ The Ministry decided to keep the tracking error limit as the main portfolio constraint but decided to change a number of its features. First, the limit was changed from a hard limit to a softer limit to avoid fire sales during periods of high

market volatility. Second, the method for calculating tracking error was adjusted to better reflect the fund's long investment horizon. Finally, the limit itself was cut from 150 to 100 basis points. These changes entered into force in 2011. Taken together, the changes meant that Norges Bank's scope for relative risk taking was little affected in practice.

More importantly, the lesson from the financial crisis was that the portfolio could be exposed to a multitude of risks that were not necessarily captured adequately by expected relative volatility, and so several additional constraints were introduced. The use of leverage was explicitly regulated, and in principle removed. In addition, the Executive Board was required to lay down principles and specific supplementary restrictions for a wide range of investment-related risks, the most important being the minimum overlap between the portfolio and the benchmark index.

The quantitative restrictions in the mandate have been a regular topic of discussion ever since. In 2014, a group of external experts recommended a change in the investment delegation framework and the introduction of an "opportunity cost" model combined with an increase in the tracking error limit to 175 basis points.⁴⁴ The group argued that this model was particularly well suited to long-term investors. In such a model, the decision on which types of assets to invest in, and in what proportions, is delegated to the manager within restrictions and risk limits laid down by the asset owner. The same year, Norges Bank put forward a proposal that assumed the adoption of a delegation framework with features similar to the opportunity cost model, albeit not explicitly stated. Norges Bank also indicated that the Ministry might consider introducing an absolute risk target to replace the limit on relative risk.

Short of such a fundamental change, Norges Bank argued for an increase in the tracking error limit to 200 basis points to capture the introduction of real estate.⁴⁵

The Ministry presented an intention to raise the tracking error limit to 125 basis points in the 2015 white paper along with an intention to introduce a new rule on expected extreme relative return deviations, or tail risk.⁴⁶ In an updated mandate in 2016, the Ministry required Norges Bank's Executive Board to set a limit on expected extreme risk deviations.

In 2017, the Ministry decided to remove real estate from the fund's benchmark index, but still allow the fund to invest in the asset class. Since 2017, the real estate portfolio has been included in the calculation of the fund's tracking error. The limit was, however, kept unchanged at 125 basis points. The 2016 decision to increase the tracking error limit to 125 basis points was more than offset by the reduced scope for relative risk taking that the new framework for real estate implied.

The general trend has been for the quantitative restrictions in the management mandate set by the Ministry to become more extensive over time. In addition, the Executive Board has been expected to establish additional risk limits to capture risks which, experience suggests, will not be captured well by the tracking error limit.

Qualitative requirements and expectations

Over time, more qualitative requirements and expectations have been added to the management mandate. We are, for instance, expected to be an active owner and exercise our ownership rights and obligations in the companies we invest in. This has not always been the case. In the early days, concerns that strategic investments would cause additional

political challenges were emphasised, and particularly the risk that strategic investments could lead to pressure on Norwegian political authorities. These concerns materialised in a mandate requirement that Norges Bank should not exercise the ownership rights associated with equity investments unless necessary to safeguard the financial interests of the fund. Objectives other than return and risk were not to be pursued through the fund's investment strategy.

The first discussions about ethical guidelines started as early as April 1998, but it was not until 2004 that the Ministry set up an independent Council on Ethics, based on the recommendations of a public commission.⁴⁷ The Ministry also issued management guidelines stating that the fund had become a principled financial investor and that active ownership was part of the toolbox to pursue these principles.⁴⁸

The fund's role as a responsible investor has evolved considerably over time. Today, Norges Bank is required to have integrated and effective instruments for responsible investment and to decide on the exclusion and observation of individual companies. It is also to lay down principles for responsible investment and promote research and the development of international standards in the field.

In addition to being a responsible investor, Norges Bank is required by the management mandate to establish environment-related investment mandates, to consider the fiscal strength of the governments we lend money to, and to make sure that the relative risk in the fund is diversified and exposed to various systematic risk factors. We will discuss the implications of these additional requirements in the last chapter of this book.

Reporting requirements

Transparency is vital for building confidence that the fund is being managed in a professional and prudent manner.⁴⁹ The importance of information and trust was highlighted right from the very first annual report on the fund published in 1999. While there was limited formal regulation of the content of the early reporting, both the Ministry and Norges Bank saw a high degree of transparency as desirable, and implemented a quarterly and detailed reporting framework. One example is the full annual disclosure of the fund's actual holdings from 1998, which set the fund apart from its peers. The audited accounts have also been made public since 1998.

The fund's reporting requirements became more formalised in December 2005, when the key requirement was to describe Norges Bank Investment Management's investment strategy and present the relative return by asset class and split between external and internal management.⁵⁰

The global financial crisis triggered more demands for public reporting. A new requirement for Norges Bank to publish the strategic plan for its management of the fund was introduced in 2010.⁵¹ In addition, Norges Bank was required to provide a true and complete presentation of fund returns, costs, investment strategies, value creation, relevant risks and mandate utilisation.⁵² This was meant to fulfil the need of the Ministry to clearly communicate expectations, and the Executive Board's responsibility to assess how the public could best be informed about the operational management of the fund.

The topic of reporting was revisited as part of the assessment of the tracking error limit in the 2015 white paper. The Ministry concluded that a higher relative risk limit should be accompanied not only by additional risk limits, but also by new detailed reporting requirements. The Ministry outlined the new requirements in December 2015.⁵³ Norges Bank is now to present the overarching principles for its selection of investment strategies, and the expected return and risk characteristics of these strategies. It must also explain how the individual investment strategies build on the fund's long-term investment horizon and other special characteristics, and how they draw on various limits, such as those for tracking error and costs.

Today's reporting from the fund is probably without comparison in institutional asset management. On the one hand, comprehensive, timely and correct reporting helps build trust and legitimacy with key stakeholders. On the other hand, excessively detailed reporting requirements may themselves have implications for how Norges Bank chooses to fulfil the management assignment and may entail a risk of the Ministry effectively assuming the Executive Board's responsibilities in the management of the fund.⁵⁴

Chart 5 Total return on the fund and the benchmark index. Percent.

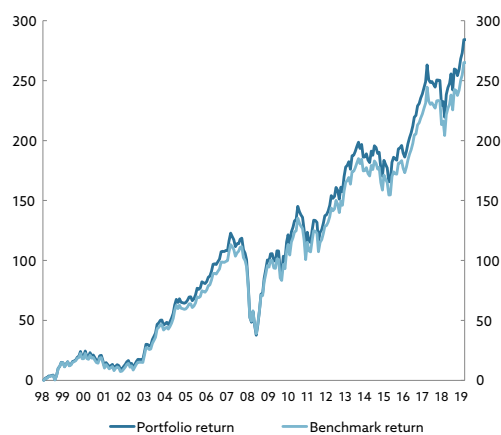
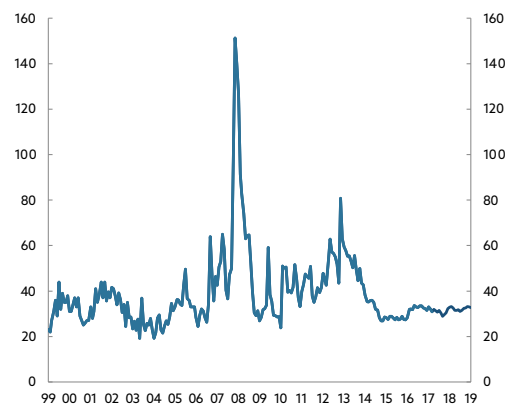


Chart 6 The fund's expected relative volatility. Basis points.



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The fund index

The benchmark index has played a crucial role since the concept was first introduced in the early days of the fund. It has been used to decide which asset classes to invest in, how much to invest in each class, and the composition of the investments within that class. The benchmark index is not a neutral measure, but a result of a set of investment decisions that have had significant return implications.

In 1997, Norges Bank suggested that the strategic choices made in the management of the fund could be specified by defining a benchmark index, and indicated that Norges Bank as operational manager would use this index as a basis for its actual investments.⁵⁵ The benchmark index represents choices made explicitly by the Ministry as well choices made more implicitly by the index providers. Two main trends emerge: a growing allocation to equities and a broader universe for both equities and fixed income.

Asset allocation

The decision on how much to invest in different types of assets – the asset allocation – is the most important any asset owner makes. The asset allocation needs to be tailored to the investor's risk tolerance and investment horizon.

From 0 to 40 percent equities

The first inflows into the fund were managed as part of Norway's foreign exchange reserves. In 1996, when the first transfer was received, the currency reserves were invested exclusively in government bonds issued in developed-market currencies. The currency composition of the reserves, and thus the fund, mirrored Norwegian imports, heavily tilted towards Europe. Around 75 percent was invested in Europe, with about a quarter in Sweden and Denmark.

The Jagland government's Long-term Programme in 1997 brought updated forecasts for public finances. It was clear that the fund would grow larger and last for longer than originally predicted.⁵⁶ More money to invest and a longer investment horizon suggested that the asset owner could take on more risk than previously assumed. In April 1997, Norges Bank suggested an equity share of at least 30 percent.⁵⁷ Following debate in the Storting, the Ministry of Finance settled on 40 percent.⁵⁸

The decision to introduce a 40 percent allocation to equities in the fund's benchmark index was a bold one. At the time, both the asset owner and the manager had limited experience of global equity investments. A 40 percent equity share signalled that the asset owner was willing to accept a fair amount of variation in returns from year to year in exchange for higher expected returns in the longer term. As the fund was still relatively small at the time, Norges Bank was able to establish this new asset allocation over a brief transition period of five months.⁵⁹

The 40 percent allocation to equities in the benchmark index was reviewed periodically over the next decade. In both 2001 and 2003, the conclusion was that no changes were warranted.^{60,61} It is worth mentioning that negative fund returns in 2002 did not trigger any questioning of the fund's strategy by key stakeholders.

From 40 to 60 percent equities

Norges Bank, in its capacity as the Ministry's strategic advisor, continued to undertake regular assessments of the fund's investment strategy. In its 2005 review, Norges Bank assessed the case for a higher equity share and concluded that there were arguments in favour of a further increase. The Ministry later announced that the equity share should be re-assessed and asked Norges Bank to provide a concrete recommendation. In February 2006, Norges Bank advised the Ministry of Finance to increase the equity share to 50 or even 60 percent, focusing on the prospect of higher returns.⁶² Data going back more than a century supported this conclusion. Norges Bank also pointed out the associated increase in risk. After discussions in the Storting, the Ministry concluded that the additional risk was justified by higher expected returns and decided to increase the equity share to 60 percent.⁶³ The transition was implemented over a 20-month period from the end of June 2007 to early 2009.⁶⁴ This coincided with the global financial crisis.

The 60 percent allocation to equities in the fund's benchmark index was left unchanged until 2017, when a review of the regulatory framework for the fund's investments in real estate triggered a minor adjustment of the equity share to 62.5 percent.⁶⁵ The increase from 60 to 62.5 percent has to be seen in relation to the 2010 decision that the 5 percent target allocation to real estate should be matched by a similar reduction in the strategic allocation to fixed income. The ambition was to keep the equity risk in the benchmark index at the same level as implied by the previous 60/35/5 mix of equities, fixed income and real estate.⁶⁶

Moving to 70 percent equities

A decade on from the 2006 review of the equity share, the Ministry initiated an updated assessment of this important question. Norges Bank was asked to evaluate whether developments in financial markets or the fund's characteristics over this period warranted a change in the allocation to equities.⁶⁷ Norges Bank recommended an increase in the equity share to 75 percent. A key argument was that the fund had a higher risk-bearing capacity than in 2006, as the transition from petroleum wealth to a less volatile portfolio of financial assets had progressed. Based on an overall assessment of prospective returns, risks and risk-bearing capacity, the Ministry concluded that a 70 percent equity share was appropriate. This was in line with the recommendation the Ministry had received from a public commission asked to advise on the equity share.⁶⁸ The transition towards the new strategic target was implemented over a 20-month period from September 2017 to April 2019. The decision to change the equity share to 70 percent in February 2017 was the first time the Ministry opted for a lower equity share than recommended by Norges Bank. On both previous occasions, in 1997 and 2006, the Ministry went for a higher equity share than recommended by Norges Bank.

The return implications for the fund of introducing equities have been substantial. The total return on the fund's benchmark index is estimated to be 110 percentage points higher than it would have been with a benchmark consisting only of fixed income.

Rebalancing the benchmark index

The asset allocation in the benchmark index has always been expressed in terms of fixed weights. As prices of equities and bonds tend to move at different speeds and in different directions, maintaining fixed weights requires frequent trading. There is no such thing as a free trade, so maintaining fixed weights would incur large transaction costs. The Ministry of Finance has therefore allowed the weights in the actual benchmark index to drift away from the strategic weights as a result of these return differences.

The rules for adjusting the benchmark index back to the fixed weights, known as rebalancing, have changed over time.⁶⁹ How far the weights in the actual benchmark index are allowed to move away from the strategic weights, as well as how quickly they are brought back to the strategic weights, has varied. The use of inflows into the fund as part of the rebalancing regime has also changed over the years.

From 1998 to 2001, the fund was rebalanced back to the strategic weights quarterly in conjunction with transfers from the Ministry to the fund. In 2001, it was decided to move from quarterly to monthly transfers, and a new rebalancing regime was introduced. In the new regime, inflows were used to bring the actual benchmark index closer to the strategic weights on a monthly basis (partial monthly rebalancing). In addition, Norges Bank was required to advise the Ministry on how to proceed if the strategic weights had drifted more than 3 percentage points away from their targets (full rebalancing). This regime lasted until 2012. From 1998 to 2012, the use of inflows to rebalance back to the strategic weights helped ensure that the actual benchmark weights did not stray too far from the

strategic weights. During the large drawdowns in equity prices during the dot-com crash and the global financial crisis, however, inflows were not sufficient to keep the actual benchmark weights close to the strategic weights, and a full rebalancing was triggered.

The rebalancing rule was revisited in 2012 following the abolition of fixed regional weights. At this point, the fund had grown to around 3,500 billion kroner, and inflows into the fund were expected to decline. Partial monthly rebalancing was discontinued that October, and a trigger-based rule for rebalancing the equity share in the benchmark was included in the mandate. For the first time since inception, the mandate included a public rule for when rebalancing back to the strategic weights should be triggered.

There has been extensive discussion around the threshold for rebalancing, centring on the trade-off between the cost of deviating from the strategic weights and transaction costs. It has also been debated whether rebalancing could help increase the fund's return by exploiting any time variation in the equity risk premium by selling when market pricing is high and buying when prices are low. To what extent this can be captured through a simple return-based rule for rebalancing has been discussed. For now, the rebalancing rule reflects only the trade-off between deviation from the strategic weights and transaction costs.⁷⁰

Chart 7 Asset allocation in the benchmark index. Percent.

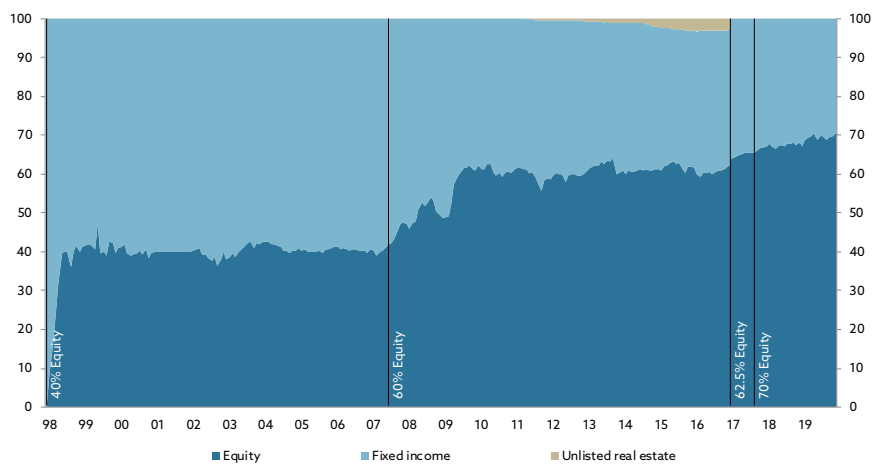


Chart 8 Equity share in the benchmark index and the investable market. Percent.

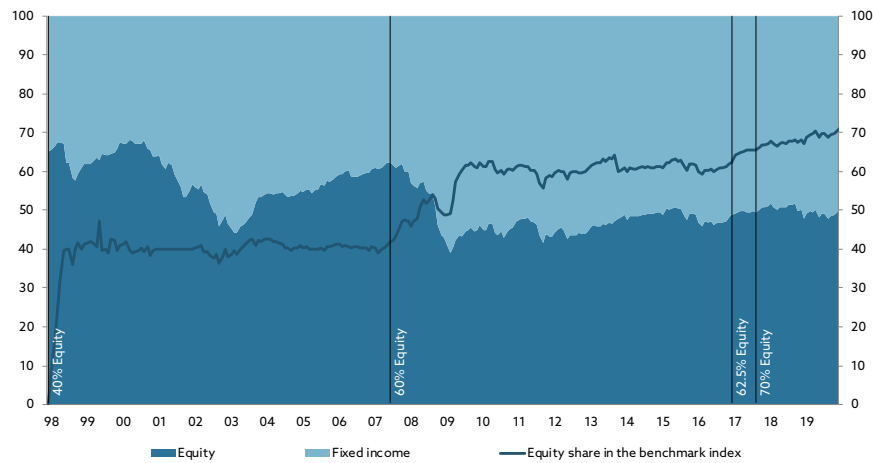


Chart 9 Estimated return impact of introducing equities. Percentage points.

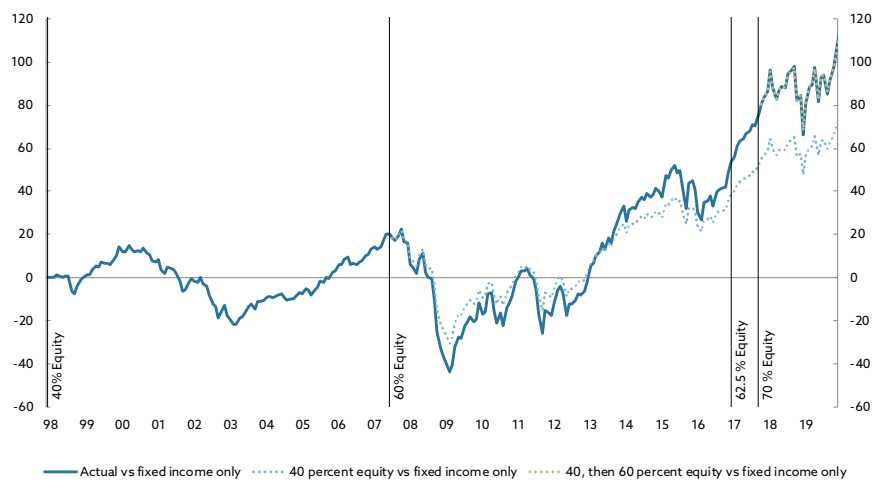
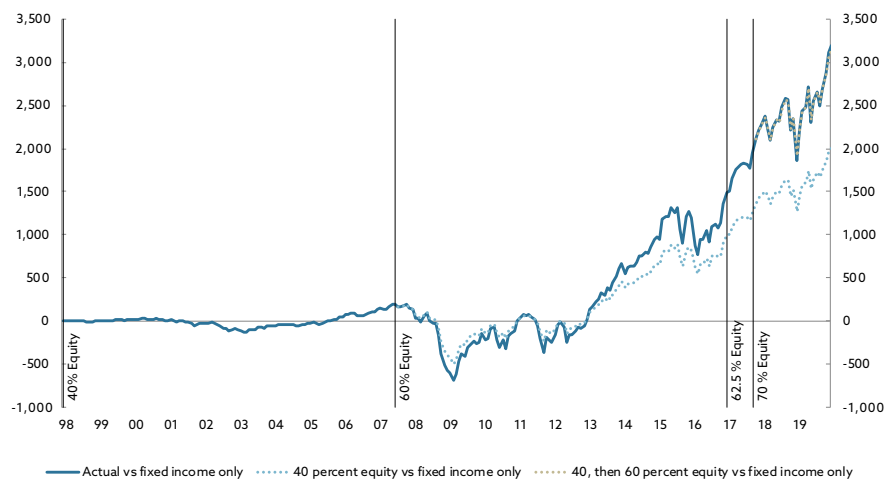


Chart 10 Estimated return impact of introducing equities. Billion kroner.





Asset composition

After deciding on an asset allocation, an investor will normally start thinking about how the assets should be distributed within the different asset classes. The benchmark index reflects both choices made explicitly by the asset owner and choices made more implicitly through the choice of index provider. Changes to the composition of the benchmark index have normally been implemented gradually. The index has therefore been in transition mode for prolonged periods.

At first, equities and fixed income were assigned the same fixed regional weights of 50 percent Europe, 30 percent Americas and 20 percent Asia-Pacific. The weight assigned to European investments was higher than the region's weight in broad market indices, as it was designed to limit the fund's currency risk in relation to future imports to Norway. European countries are by far Norway's most important trading partner.

In April 2010, the Ministry undertook a new assessment of the fund's currency risk. It concluded that this risk appeared to be smaller than previously assumed, and there was less of a basis for such a strong concentration of investments in Europe.⁷¹ Nonetheless, the geographical composition of the equity benchmark still deviates significantly from market weights, underscoring the importance of decisions made at an early stage in the fund's history. These decisions have had a significant impact on returns over time.

From a conservative starting point focusing on developed-market equities and government bonds, the benchmark index has gradually been expanded to include new markets and segments. For equities, the discussions have centred on which countries and which types of companies to include in the index. Today, the benchmark index for equities includes all markets and companies eligible for inclusion in the FTSE Global All Cap index, or close to 9,000 companies from 47 different countries.

The evolution of the fixed-income benchmark followed a similar path to the equity benchmark for a long period, as additional segments and new currencies were added. The ambition was that the benchmark index should include all available investment opportunities. The 2007–2009 financial crisis triggered a rethink of the role of fixed-income investments in general, and in particular how this role could best be reflected in the benchmark index. Over the past decade, the fixed-income benchmark has gradually become narrower to better support the key role of fixed income in the fund, which is to reduce the volatility in total fund returns and provide liquidity for rebalancing and any outflows.

Transitions

The composition of the fund's benchmark index has changed over time, and the approach has been to implement any changes gradually. However, the definition of gradual has evolved over time. During the early years, when the fund was fairly small, most strategic changes could be implemented using only a few months' inflows. The use of inflows kept the costs associated with the strategic changes to a minimum. As the fund has grown in size, changes to the benchmark index have needed to be implemented over longer time periods. Now that inflows have declined as a share of the fund's value, Norges Bank is often required to both buy and sell assets in order to adjust the portfolio to a new benchmark index. In parallel with these changes in fund characteristics (size and inflows), we have also witnessed a change in market dynamics. It has generally become more costly to trade large volumes over short time periods, further underlining the need for gradual implementation of any changes to the benchmark index.

Chart 11 Number of countries in the fund's equity benchmark index.

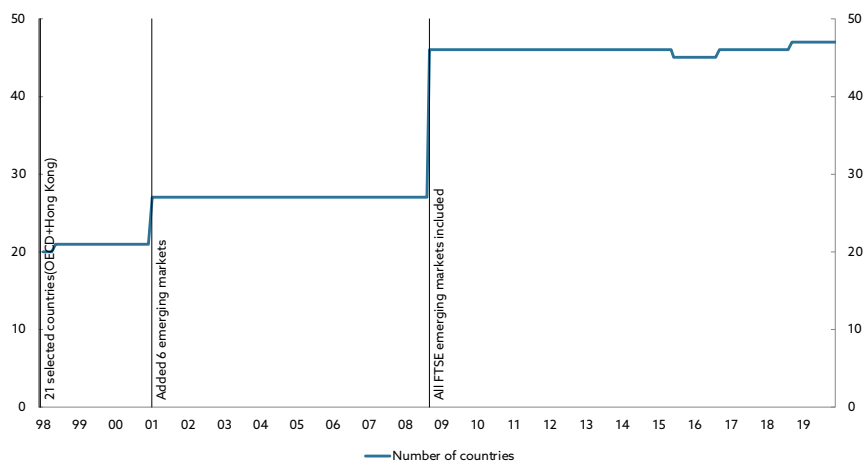


Chart 12 Number of stocks in the fund's equity benchmark index.

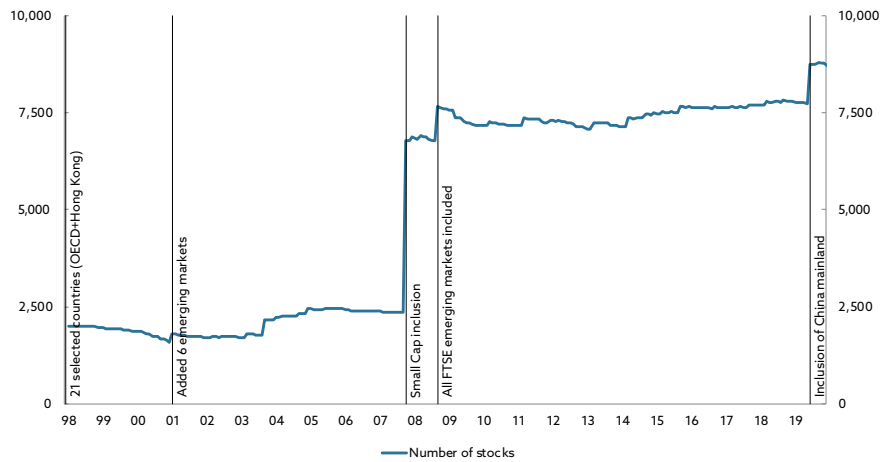


Chart 13 Number of currencies in the fund's fixed-income benchmark index.

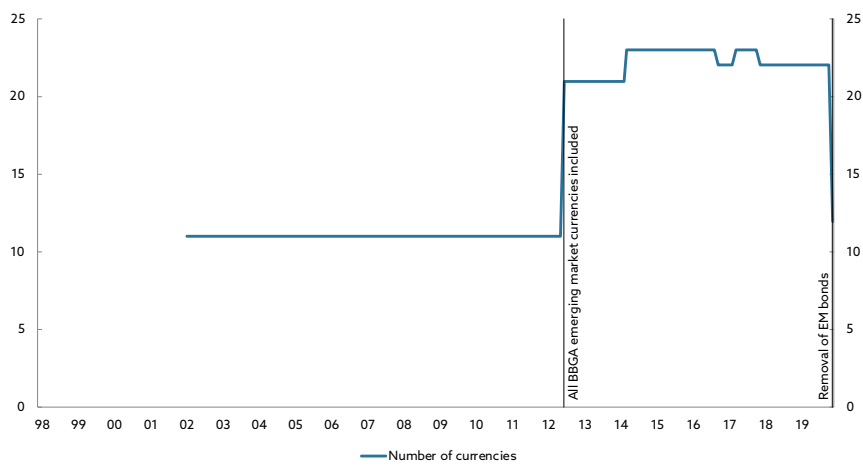
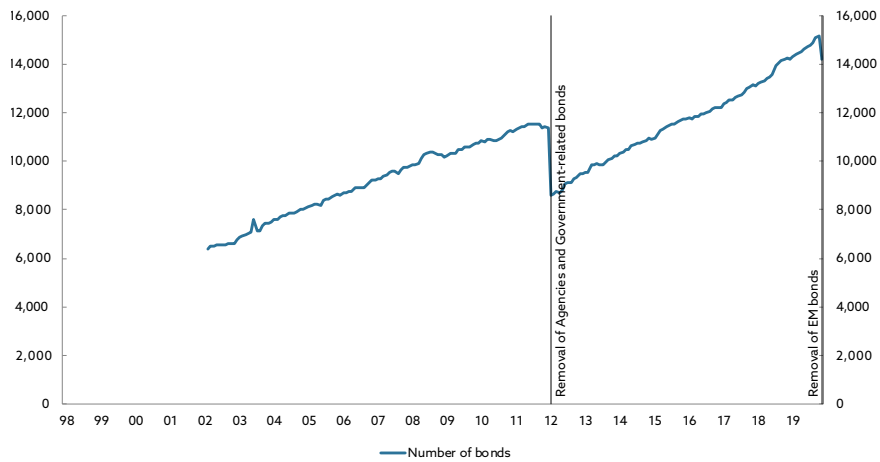


Chart 14 Number of bonds in the fund's fixed-income benchmark index.



The equity index

The fund's benchmark index for equities is the result of a set of choices shaped by numerous considerations and decades of discussion. Ultimately, however, it reflects three key decisions. How much capital should be invested in different parts of the world? In which countries should we invest? And within these countries, in how many companies and with which weights?

The composition of the benchmark index for equities is to a large extent a result of choices made in the early days of the fund. This is particularly true for the geographical composition. The higher ownership level in European equities has been a recurring topic of discussion.

Regions

Fixed regional weights

The 1998 investment mandate established three broad geographical regions: Europe, the Americas and Asia-Pacific. The allocation between them was set at 50, 30 and 20 percent respectively. Compared to the relative sizes of these markets, the chosen distribution of capital was heavily skewed towards Europe. This meant that the fund had much larger holdings in European companies than in the rest of the world.

In 2002, the combination of fixed asset weights and long-term underperformance by Japanese equities had resulted in ownership levels in Japanese companies three times higher than in the Americas. No good arguments could be found for having significantly larger stakes in Japanese companies than in US companies. Norges Bank proposed adjusting the regional distribution of the benchmark index by moving the allocation between the Americas and Asia-Pacific towards market weights.⁷² The Ministry concurred, and the regional weights were changed accordingly.⁷³ The implication was that capital was shifted from Asia to the Americas.

However, after only three years, the topic of Japan was back on the agenda, and the principle of market weights for allocating equity investments between the Americas and Asia-Pacific was partly abandoned in 2005. This change was sparked by a letter from Norges Bank in August 2005 where it proposed shifting 5 percent of the regional allocation to the Asia-Pacific region from fixed income to equities.⁷⁴ Low expected returns on Japanese government bonds relative to bonds in other regions, and low correlation between the Japanese equity market and global fixed-income markets, were the main arguments put forward. The Ministry decided to implement the proposed changes in March 2006.^{75,76} The 5 percent reduction in Asian fixed income was balanced with a similar increase in European fixed income, while the 5 percent increase in Asian equities was balanced with a similar reduction in North American equities. The re-allocation of assets within the Asia-Pacific region thus also impacted the allocations to other regions, as exposure was shifted away from the North American equity markets to the European fixed-income markets.

From fixed weights to adjustment factors

In February 2012, Norges Bank recommended abolishing the fixed regional weights altogether and gradually moving the geographical distribution of the benchmark index in the direction of market weights. This would significantly reduce the weight of European equities. Before shifting completely to market

weights, however, Norges Bank suggested that consideration should be given to whether differences in investor protection and corporate governance standards might warrant a somewhat higher allocation to European equity markets than implied by market weights.⁷⁷ The Ministry agreed to move away from the fixed regional allocation and tilt the equity benchmark index more towards global market weights.

Global market weights would mean reducing the allocation to Europe by more than 20 percentage points, and a similarly sharp increase in the allocation to the US equity market. In the end, it was decided to aim for a reduction of about 10 percentage points in Europe and to implement this by assigning adjustment factors to the stocks in the benchmark index depending on their country of origin.⁷⁸

At this point in time, the US stock market amounted to roughly 50 percent of the FTSE Global All Cap. To reduce concentration risk in the largest market, US companies were assigned a lower adjustment factor, meaning that the fund's holdings in European companies would be roughly 2.5 times as high as those in US companies.⁷⁹ The adjustment factors for other developed markets and emerging markets were set to target market weights in these two regions. The introduction of these adjustment factors had two important implications. First, it served to reduce transactions in the benchmark index, as it was no longer necessary to rebalance back to any fixed regional weights. Second, it meant that the geographical index weights would then move with market capitalisation. The 2012 decision marked the final farewell to the fixed regional weights that had been a key feature of the equity benchmark index since 1998.

The transition to this new geographical distribution started in September 2012 and was completed in September 2014.⁸⁰ At that time, inflows of new capital into the fund had dried up as a result of lower oil prices. In order to reach the new target allocation, Norges Bank therefore had to sell a significant amount of European equities and buy US stocks.

History has shown that regional equity returns can deviate substantially for prolonged periods. Since 1998, the dominant relative position in the benchmark index compared to market capitalisation has been a large overweight in European equities and a substantial underweight in the US and Canada. Europe and Asia-Pacific outperformed the Americas significantly in the 2003–2008 period, but their subsequent decline during the global financial crisis was more severe. Since the financial crisis, a key development has been a substantial outperformance by the US equity market. This trend has been even more pronounced in recent years.

The geographical distribution of the fund's equity benchmark index has gradually moved in the direction of market weights. As of end of 2019, this has increased the value of the fund, corresponding to an estimated positive return on the equity benchmark index of about five percentage points. Had the geographical composition of the fund's equity benchmark index been allocated according to market weights from the outset, the value of the fund would have been higher at the end of 2019 than it actually was, corresponding to an estimated negative return impact on the equity benchmark index of about 26 percentage points.

Chart 15 Regional composition of the equity benchmark index. Index weights in percent (left-hand axis) and relative to market weights in percentage points (right-hand axis).

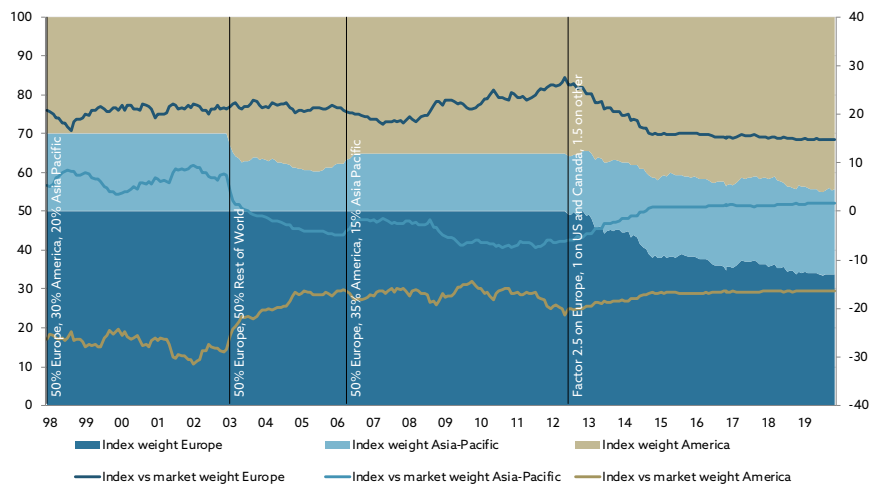


Chart 16 Total return by region in the equity benchmark index. Percent.

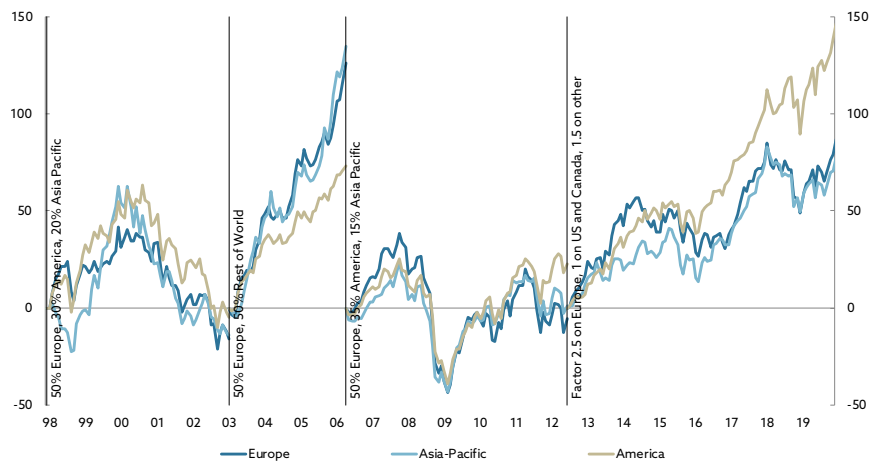


Chart 17 Estimated return impact of the regional composition of the equity benchmark index. Percentage points.

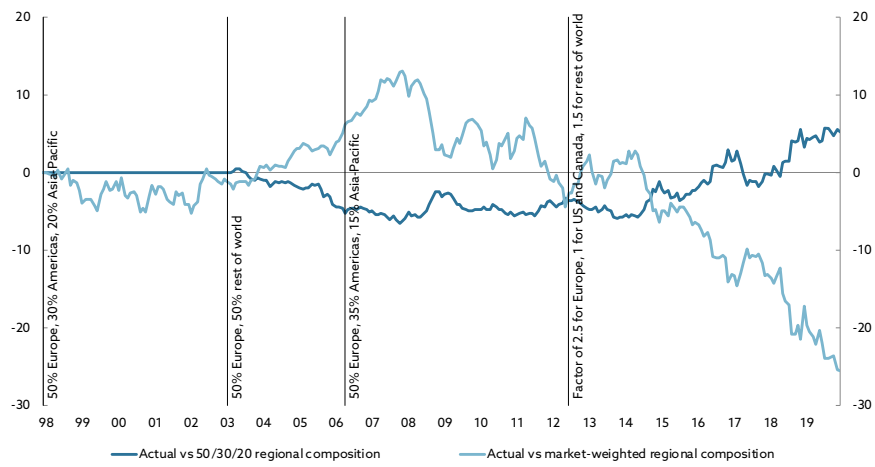
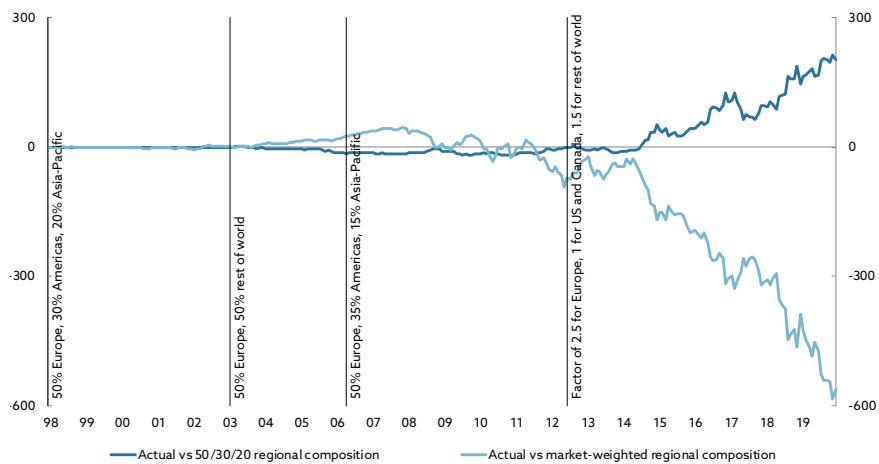
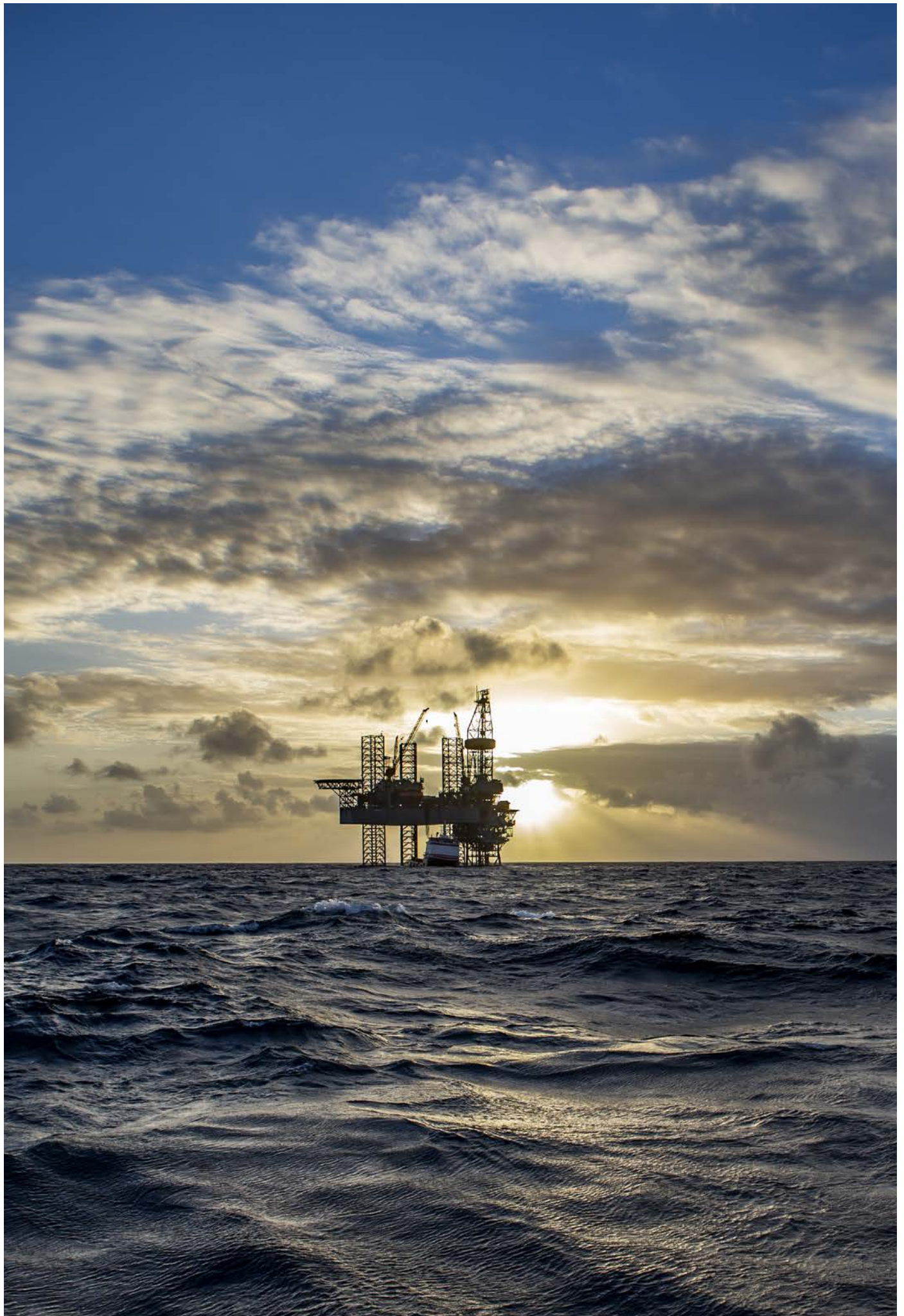


Chart 18 Estimated return impact of the chosen regional composition of the equity benchmark index. Billion kroner.





Countries

The equity benchmark index also specifies which countries to invest in within different parts of the world. The general trend since 1998, when the fund invested only in developed-market equities, has been a gradual inclusion of more markets.

Defined by the Ministry

When the fund started investing in equities, the Ministry of Finance maintained a list of countries eligible for benchmark inclusion. The initial equity benchmark index in 1998 consisted of equity markets in 21 developed OECD countries. Emerging markets were first included in the benchmark index at the end of January 2001, when Brazil, South Korea, Mexico, Taiwan and Turkey were added to the list of eligible markets. The settlement system and financial regulation in these markets were assessed to be sufficiently mature to warrant benchmark inclusion.^{81,82} An adjustment was made in January 2004, when the Ministry decided to add South Africa and remove Turkey.⁸³ The latter came as a direct result of the index provider's decision to remove stocks not readily available for trading from the calculation of the weights in the index. This free-float adjustment halved Turkey's market value, and the market was then considered too small to warrant inclusion in the benchmark.

Outsourced to the index provider

As the fund grew larger and Norges Bank gained more experience of managing equity risk in different markets, it was decided to aim for a broader representation of the global economy in order to improve the overall diversification of the fund.⁸⁴

In September 2008, the Ministry decided to outsource the decision on which countries to include to the index provider FTSE, and 19 new countries were added to the equity benchmark as a result. The index provider's assessments of the different markets were believed to be sufficiently robust and thorough to warrant delegation. Since then, the benchmark index has included all markets in the FTSE Global All Cap – developed, advanced emerging and secondary emerging.

The timing of the inclusion of these markets in 2008 coincided with the collapse of Lehman Brothers and ensuing turmoil in financial markets. This is another illustration of how changes to the fund's investment strategy have been followed through once the decision has been made, even in the most stressed market situations.

The decision to include emerging market equities in the benchmark has had a negative impact on fund value as these markets have underperformed developed markets in this period. We estimate that the inclusion of these markets in the benchmark index has reduced the total return on this index by about 7 percentage points.

Chart 19 Regional composition of the equity benchmark index, split between developed and emerging markets. Percent.

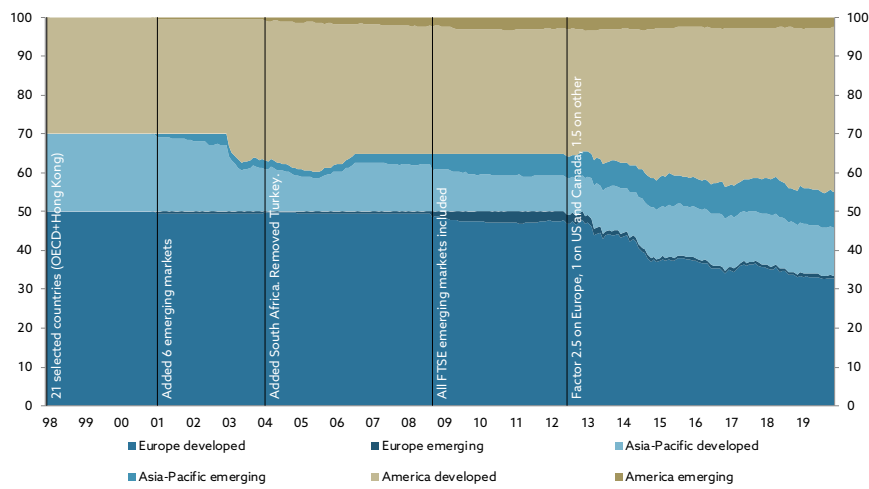


Chart 20 Return differences between market types in the equity benchmark index per region. Percentage points.

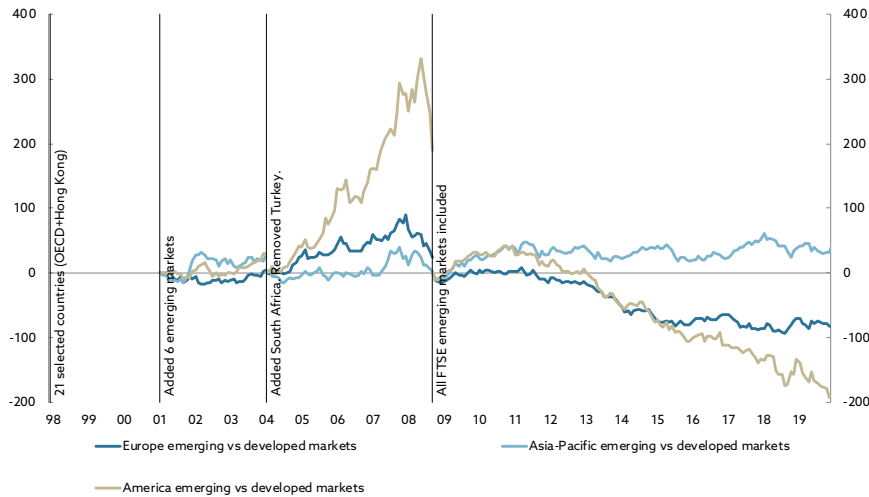


Chart 21 Estimated return impact of adding emerging markets to the equity benchmark index. Percentage points.

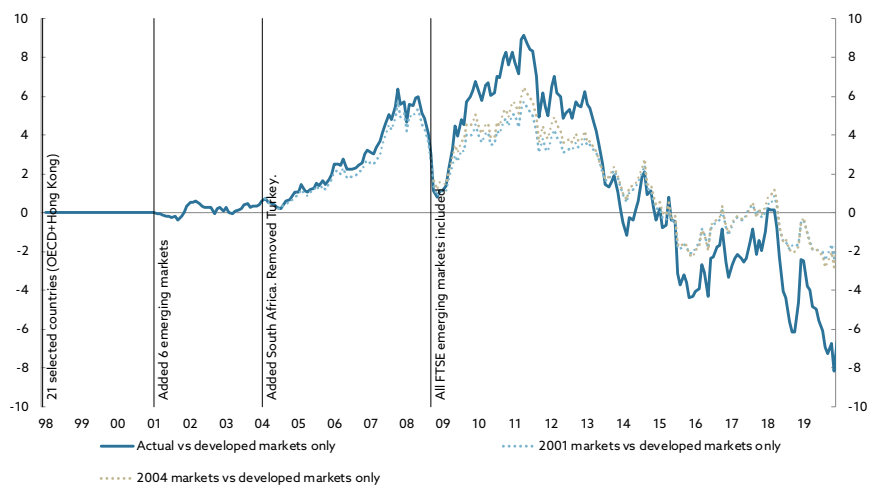
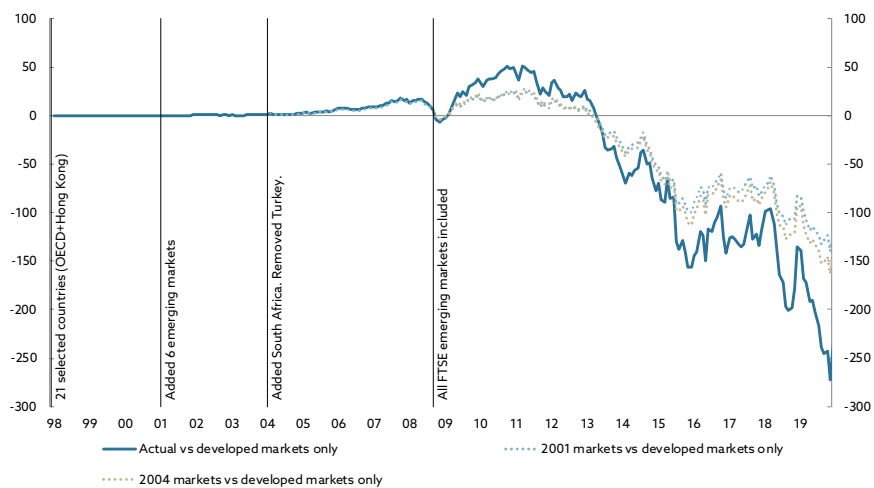
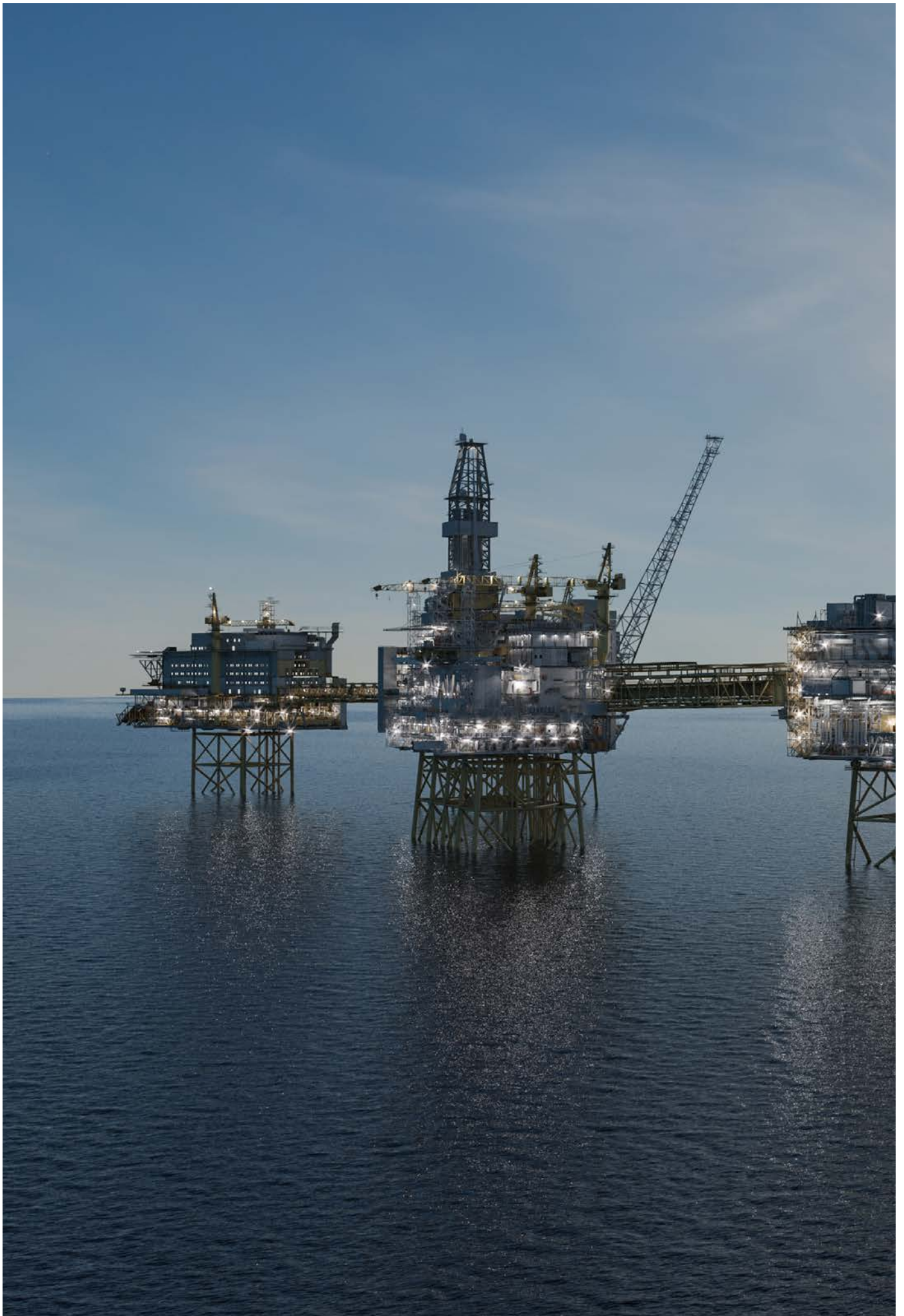


Chart 22 Estimated return impact of adding emerging markets to the equity benchmark index. Billion kroner.





Companies

With the choice of regions and countries made, the final step is to decide which types of companies to include in the benchmark index.

Size of companies in the benchmark index

Initially, the equity benchmark index included only large and medium-sized companies.⁸⁵

As the fund grew larger, Norges Bank proposed in April 2003 that the fund should be invested in a broader set of companies. At that time, the proposal implied an increase in the number of companies in the index from around 2,000 to almost 7,000. In response, the Ministry expressed some concerns about potential ownership challenges. Was the fund ready to have a stake in so many companies? How would a longer list of holdings fit in with the ongoing process of introducing ethical guidelines? Against this background, the Ministry chose to postpone a decision until after the debate about the fund's ethical guidelines and responsible investment sparked by the report from the Graver commission was concluded.⁸⁶

Three years later, Norges Bank again raised the issue of including small-cap companies in the benchmark index.⁸⁷ The Ministry now supported the expansion of the index and included the segment from the end of October 2007.^{88,89} The inclusion of small-cap stocks in the benchmark index almost quadrupled the number of constituents, despite them making up only about 10 percent of the benchmark's capitalisation. It is worth noting, however, that the methodologies and construction of equity indices vary between index providers. There is no common definition of a small-cap company, and even the same index provider may apply different thresholds for which companies to include in the segment from country to country.

The performance of large and medium-sized companies lagged that of the small-cap segment both before and after the decision to include these companies in the benchmark index.

The 2007 decision to include small companies in the index has had a positive impact on returns. Our estimates indicate that the return on the equity benchmark index has been almost 4 percentage points higher than it would have been when only including large- and mid-cap stocks.

Company types in the benchmark index

The fund is a global investor, and one ambition has been to own a small slice of all publicly traded companies. There are, however, some exceptions to this general rule. Since the fund's ethical guidelines were established in 2004, excluded companies have been removed from the benchmark index. At the end of 2019, 134 companies had been removed from the benchmark for this reason.

The fund's exposure to oil and gas companies has also been subject to extensive discussion. In one of the first letters submitted from Norges Bank to the Ministry of Finance on fund strategy in 1997, we stated that it might be appropriate to take petroleum wealth into account when defining the long-term investment strategy for the fund.^{90,91} One implication of a wider wealth perspective would be not to include oil and gas stocks in the fund's benchmark index. However, it was another 20 years before Norges Bank raised the issue of removing oil and gas companies from the benchmark.⁹²

In contrast to most of the other changes to the fund's benchmark index, the proposal led to some public debate.^{93,94} In a special white paper in March 2019, the Ministry concluded that only upstream companies (i.e. crude oil producers), a relatively small part of the industry, should be removed from the benchmark to reduce overall risk.^{95,96} The transition towards the new equity benchmark began in late 2019.

Chart 23 Capitalisation segments as a share of the equity benchmark index. Percent.

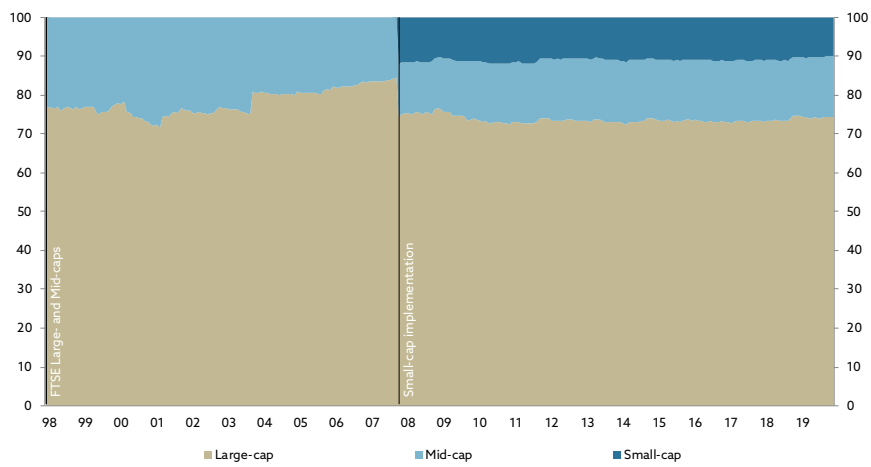


Chart 24 Absolute return on the equity benchmark index by capitalisation segment after inclusion of small-cap stocks. Percent.

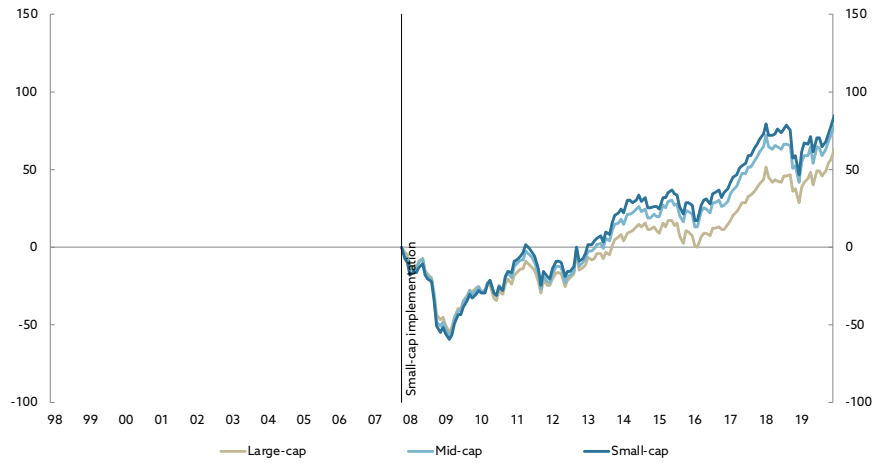


Chart 25 Estimated return impact of including small-cap stocks in the equity benchmark index. Percentage points.

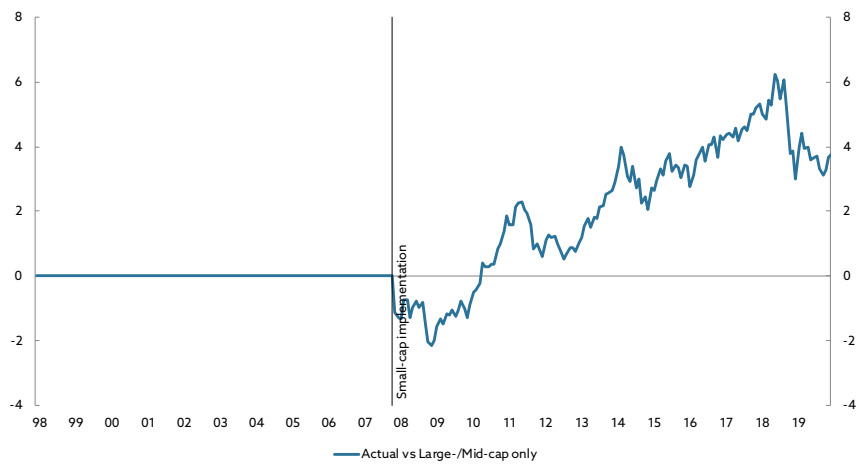
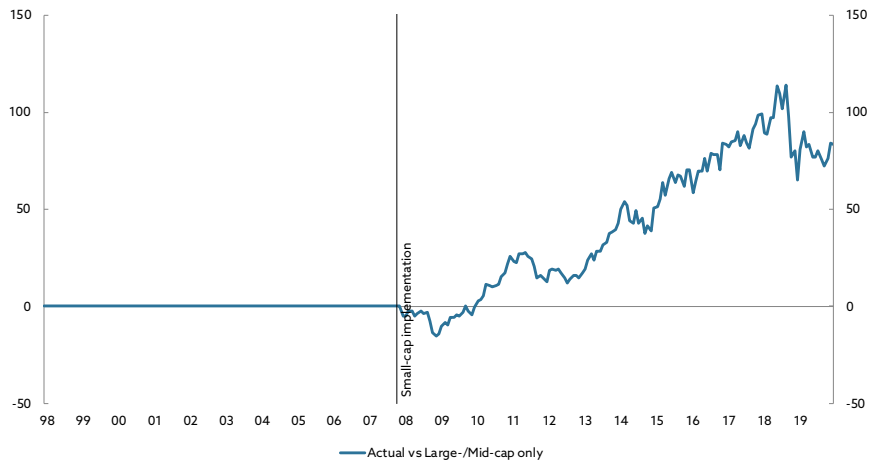


Chart 26 Estimated return impact of including small-cap stocks in the equity benchmark index. Billion kroner.



The fixed-income index

While the fund's benchmark index for equities aims to represent the broad global market, the benchmark index for fixed income has become much narrower. However, the questions discussed have often been similar. How much capital should be invested in different parts of the world? In which currencies should we lend? And to whom?

We have divided our discussion of the strategic evolution of the fixed-income benchmark into three key areas: geographical composition, the inclusion of investment-grade emerging market debt, and the introduction of other bond segments. It is worth noting that there are layers of interconnectivity between the various strategic decisions taken. The different segments included will, for instance, affect the currency composition and the total interest rate sensitivity of the index.

Regions

From import weights to fixed regional weights

For a brief period, the fund was managed as part of Norway's long-term foreign exchange reserves. The country weights were therefore based on Norwegian imports. Around 75 percent was invested in Europe, with about a quarter in Sweden and Denmark. In 1998, the investment mandate established three broad geographical regions – Europe, the Americas and Asia-Pacific – with a fixed allocation of capital to each. The weights assigned to the different regions were the same for fixed income and equities: 50 percent Europe, 30 percent Americas and 20 percent Asia-Pacific.

Within each region, the country weights were determined by the size of each country's economy as measured by GDP. In practice, this meant that more than 90 percent of the capital was split between four currencies: the dollar, the

yen, the pound and, once it was introduced in 2001, the euro. These four currencies also represented the largest and most developed fixed-income markets at that time, and these investments were generally expected to be both safe and liquid.

The initial geographical composition was first reassessed in December 2001. Norges Bank expressed concerns about the creditworthiness of Japan, which accounted for the bulk of the allocation to the Asia-Pacific region. In January 2002, Asia-Pacific's weight in the index was halved to 10 percent with the aim of reducing concentration risk in Japan.^{97,98} At the same time, the fixed weights for Europe and the Americas were both increased by 5 percentage points to 55 and 35 percent respectively. Following this change, the fixed geographical weights for the fixed-income and equity benchmarks were no longer identical. In February the same year, the use of GDP weights within these three regions was replaced with market weights.

The change of weighting principle has to be seen in relation to the decision to include non-government bonds in the benchmark index. The link between GDP and creditworthiness is less clear for non-government bonds. Fixed-income indices including both government and non-government debt, such as the one from Lehman Brothers, will normally therefore be constructed using market weights.

Norges Bank provided a new assessment of the geographical composition of the fixed-income benchmark index in August 2005.⁹⁹ The focus was again on Japan. Norges Bank proposed reducing the weight assigned to the Asia-Pacific region in the fixed-income benchmark by an additional 5 percentage points, and increasing the region's weight in the equity benchmark correspondingly. The recommendation to reduce the allocation to fixed income in Asia was motivated by a lower expected real return on these instruments in Japan than in other markets. In April 2006, the Ministry decided to follow the advice from Norges Bank, reducing the region's weight in the fixed-income benchmark by 5 percentage points and increasing Europe's weight to 60 percent.¹⁰⁰ The weight in Europe was considerably higher than that assigned to European markets in standard broad fixed-income indices.

Abolishing fixed regional weights

A new framework for the fixed-income benchmark index was introduced in January 2012. The new index had two components: 70 percent GDP-weighted government bonds from investment-grade issuers and 30 percent market-weighted corporate bonds in selected developed-market currencies.¹⁰¹ Both GDP weights and market weights were considered for the government bond sub-index. Since market weights would imply high exposure to countries with high government debt, it was considered a better approach to weight government bonds by the production capacity that would help service that debt. The main implication for the geographical composition of the fixed-income benchmark was a reduction in the European share from 60 to 40 percent and the abolition of fixed-regional weights.

The geographical composition of the fixed-income benchmark was reviewed again in 2017

following the decision to increase the equity share to 70 percent. Norges Bank's advice was to keep the GDP weights for government bonds, but at the same time to reduce the number of currencies in the benchmark and remove corporate bonds from the index.¹⁰² The Ministry decided in April 2019 to retain the principle of weighting government bonds according to GDP, but introduced a cap of two times market capitalisation to prevent high percentage ownership levels in smaller markets. It was also decided both to keep corporate bonds in the benchmark and to retain the existing weighting principle for these bonds.¹⁰³

The choice of geographical composition of the fixed-income benchmark index has had a positive impact on fund value. We estimate that, compared to the market-weighted alternative (Barclays Bloomberg Global Aggregate), the geographical choices have contributed almost 20 percentage points to the performance of the fixed-income benchmark index. Had the fund's fixed-income benchmark index kept the original geographical distribution from the outset, the corresponding estimated positive return impact on the fixed-income benchmark would only have been about two percentage points.

Chart 27 Regional composition of the fixed-income benchmark. Index weights in percent (left-hand axis) and relative to market weights in percentage points (right-hand axis).

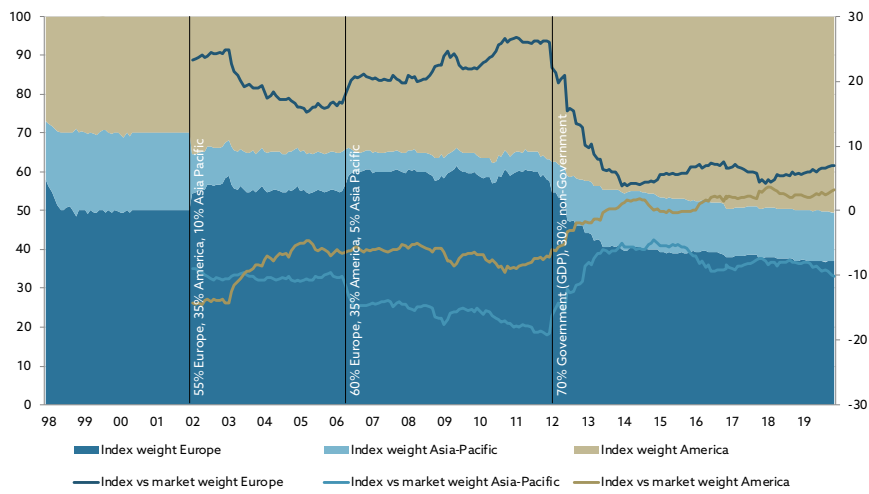


Chart 28 Total return by region in the fixed-income benchmark. Percent, cumulative.

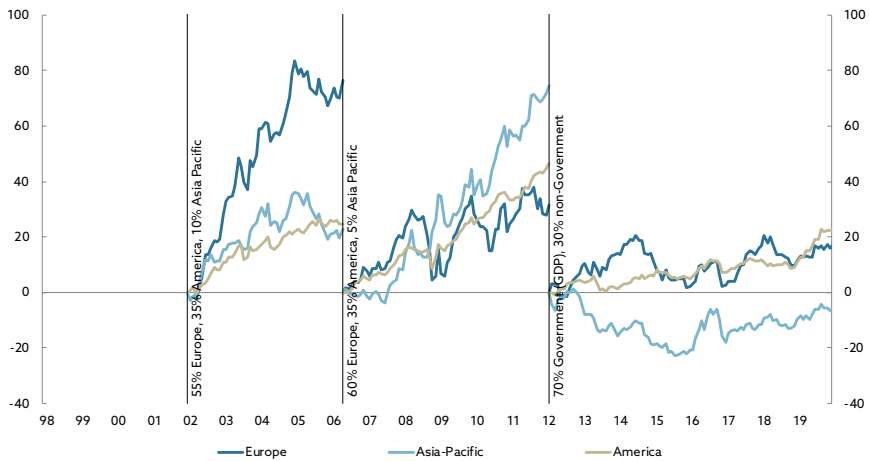
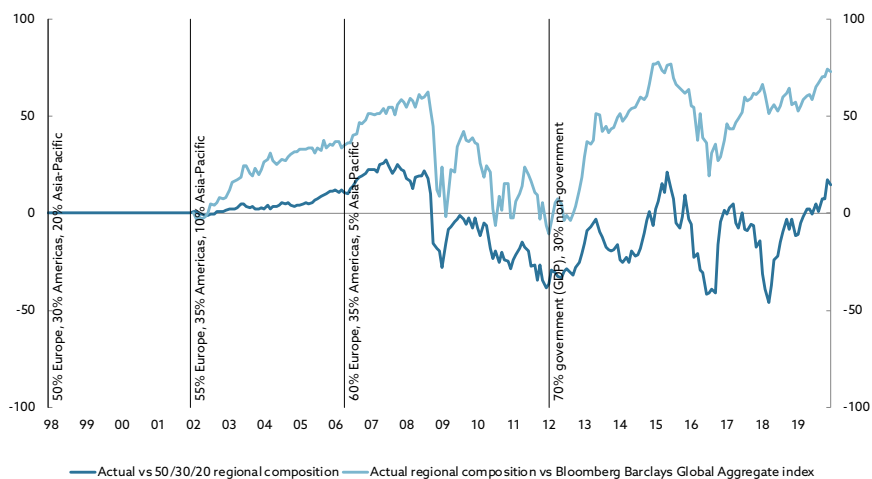


Chart 29 Estimated return impact of the chosen regional composition of the fixed-income benchmark index. Percentage points.



Chart 30 Estimated return impact of the chosen regional composition of the fixed-income benchmark index. Billion kroner.



Currencies

Inclusion of emerging market currencies

Lending in local currency to government issuers in emerging markets has been a recurring topic of discussion between Norges Bank and the Ministry of Finance. The Ministry first requested an assessment in September 2002 as part of a broad evaluation of emerging market investments, and again in June 2008.^{104,105}

On both occasions, Norges Bank advised against including emerging market debt in the fixed-income benchmark index. Arguments against adding further currencies included limited impact on portfolio properties and operational challenges.^{106,107}

In November 2011, the Ministry initiated a new assessment of emerging market local-currency debt.¹⁰⁸ This time, the question was framed somewhat differently. Rather than considering emerging market debt as a separate asset class, the focus was on expanding the list of eligible issuers within the 70 percent allocation to government bonds. The following year, it was decided to include all issuers of government bonds eligible for the Barclays Global Aggregate index. As a result, ten investment-grade emerging market issuers were added to the benchmark index.^{109,110} At that point, none of the largest emerging markets – including China, Brazil, India and Russia – qualified for the Global Aggregate index.

Index construction challenges

The inclusion of emerging market local-currency debt, and in particular the direct link between inclusion in the Global Aggregate and the fund's benchmark index, presented some operational challenges. One was how abruptly large emerging markets would enter and exit the benchmark index following decisions by the index provider. An example of a large country entering and exiting the Global Aggregate – and hence the fund's index – is Turkey. The index provider decided to include Turkey in the Global Aggregate from the end of March 2014, but 35 months later it was excluded from the same index after being downgraded to non-investment grade in September 2016.

Another less obvious challenge was the decision to use GDP weights, which resulted in very high percentage ownership where the local bond market was small compared to the size of the economy. Russia is one example. The country was included in the Global Aggregate from the end of March 2014. Left unadjusted, the benchmark index would have ended up holding close to 40 percent of the local Russian bond market. To counter this, it was decided in 2014 to introduce "investability" factors, effectively capping the benchmark allocation to selected emerging markets where the fund faced the same challenges as in Russia.¹¹¹ The investability factors served to move the benchmark weights in these markets closer to market weights and therefore closer to a strategy that could be followed.

Removal of emerging market currencies

As part of a broader review of the fixed-income framework in 2017, it was decided to remove emerging market debt from the benchmark index.¹¹² One of the reasons was the operational challenges Norges Bank had been facing since 2012. Corporate bonds from emerging market issuers were removed from the benchmark index, and the removal of emerging market government bonds issuers from the benchmark index began at the end of November 2019. Emerging market debt has not, however, been removed from the fund's investment universe: Norges Bank can still choose to lend up to 5 percent of the fixed-income portfolio to issuers in emerging markets.¹¹³

The decision to include emerging market local-currency debt in the fixed-income benchmark

from 2012 to 2019 had a positive impact on fund value. We estimate that these investments increased the return on the fixed-income benchmark index by almost 1 percentage point.

Chart 31 Regional composition of the fixed-income benchmark index, split between developed and emerging markets. Percent.

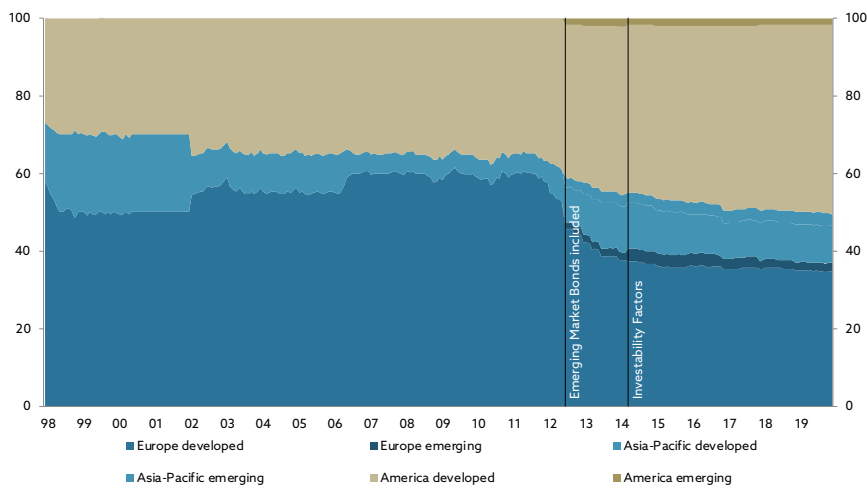


Chart 32 Return differences between market types in the fixed-income benchmark index by region. Percentage points.

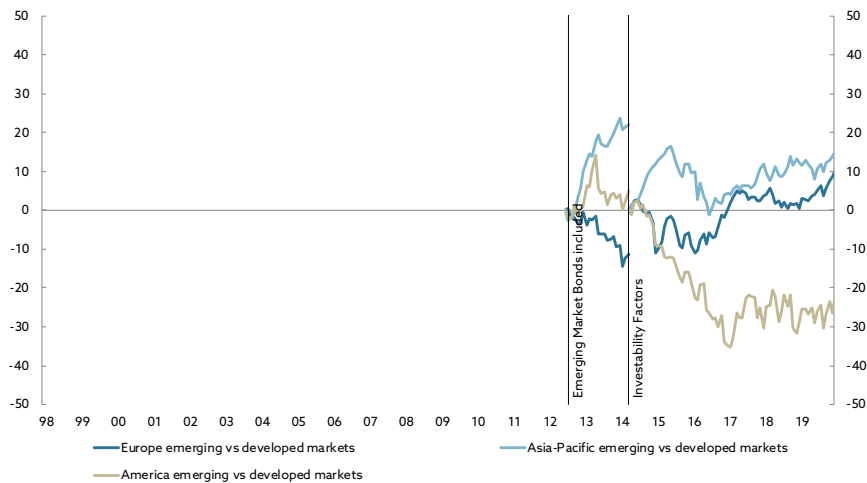


Chart 33 Estimated return impact of adding emerging market currencies to the fixed-income benchmark index. Percentage points.

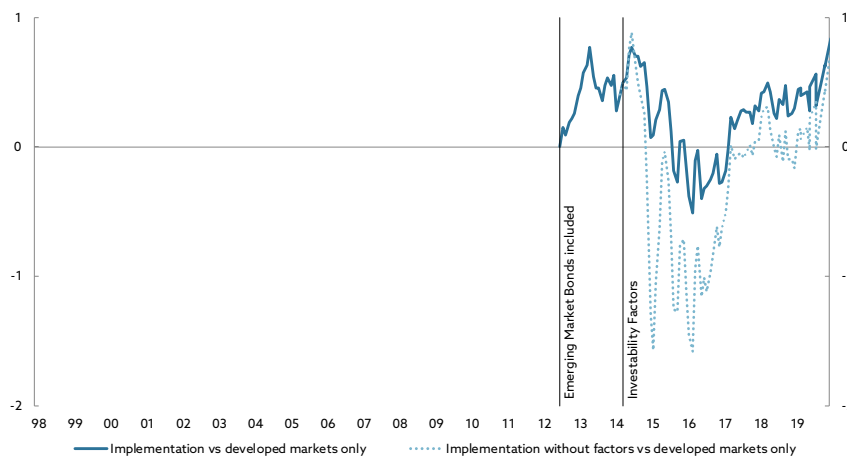
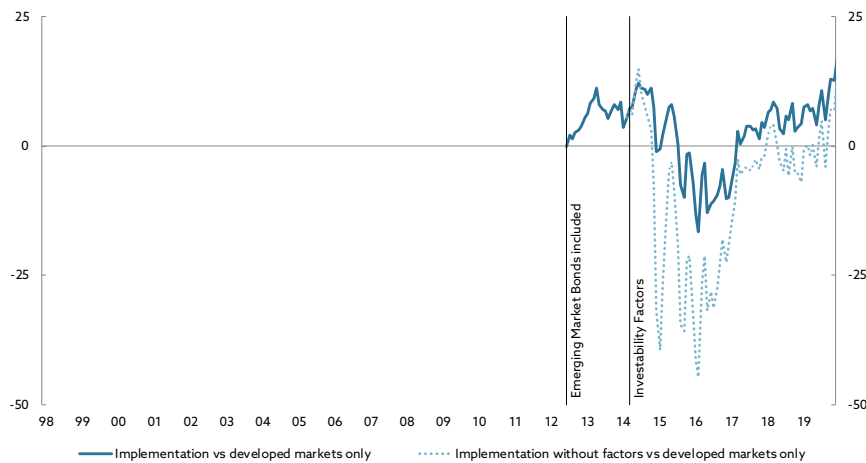


Chart 34 Estimated return impact of adding emerging market currencies to the fixed-income benchmark index. Billion kroner.



Issuers

Safe and liquid

When the fund started investing in fixed income, the emphasis was on the liquidity and safety of these investments. We did not want to lend to borrowers where there was a risk that we would not get our money back. We also wanted to be sure that we could sell our investments in all types of market conditions. As a result, the fixed-income benchmark index included only nominal government bonds from selected developed markets.

Adding risk

In March 2001, Norges Bank advised the Ministry to extend the benchmark index to include other types of bonds.^{114,115} In effect, this meant corporate bonds, bonds issued by other government-related or international entities, and securitised bonds from investment-grade issuers. A move in this direction would change the profile of the benchmark index for fixed-income investments by increasing its exposure to types of risk other than interest rate risk, most notably liquidity and credit risk. The Ministry decided to follow Norges Bank's advice, and the transition towards this new index based on the Lehman Global Aggregate index started in February 2002.¹¹⁶

As part of this process, the US market for asset-backed securities received particular attention, as it was dominated by two government-related, albeit not explicitly government-guaranteed, mortgage institutions: Fannie Mae and Freddie Mac. In the 2002 national budget, the Ministry concluded that these agencies should be included at a quarter of their market weight due to concerns about concentration risk. In May 2005, Norges Bank was asked to review this specific weighting principle and advised that index adjustments should await a broader review of the investment strategy planned for 2006.^{117,118}

The Ministry concluded in November 2006 that the whole securitised sector and the agencies sub-sector should be included at half their market weight.¹¹⁹

In March 2002, Norges Bank advised the Ministry of Finance to broaden the government universe to include inflation-linked bonds, which pay coupons that are adjusted for inflation. The Ministry discussed this in the 2004 national budget, indicating that it would consider asset classes that could protect the real value of the fund, and inflation-linked bonds in particular.^{120, 121} In February 2005, it was decided to include inflation-linked bonds from developed markets in the fixed-income benchmark index.^{122,123} The decision increased the index's exposure to the liquidity premium, as these bonds tend to be less liquid than nominal bonds from the same issuer.

The decision in 2002 to extend the fixed-income benchmark index to include non-government bonds has enhanced the overall return on the fixed-income benchmark, but at the cost of increased volatility during the global financial crisis. It is worth noting that the fixed-income benchmark index has always been limited to investment-grade issuers. The inclusion of more risky issuers (high-yield or "junk" bonds) was considered in both October 2006 and November 2008.^{124,125} The conclusion was that these bonds would be less suited to index inclusion due to high correlation to equity markets, limited liquidity and some operational challenges.

Reducing risk

Norges Bank's advice in March 2011 began a move towards a narrower index, bringing it back closer to where it started.¹²⁶ The thinking was that, rather than representing the broad fixed-income markets, the benchmark index should reflect the strategic role of fixed income – to reduce fluctuations in the fund's overall return and provide liquidity. Against this background, Norges Bank proposed removing bonds that did not necessarily serve this strategic purpose in the same way as nominal government bonds.¹²⁷ The Ministry decided to adjust the composition of the benchmark index in the direction suggested. Most government-related issuers and US asset-backed securities were removed from the benchmark index, but corporate bonds, covered bonds and inflation-linked bonds were retained. The transition towards the new fixed-income benchmark index started in January 2012.

Following the decision to move to 70 percent equities in 2017, Norges Bank was asked to reassess the composition of the fund's fixed-income index. Using the same approach as in 2011, focusing on the strategic role of the fixed-income benchmark, Norges Bank recommended going all the way back to a benchmark consisting entirely of nominal government bonds.¹²⁸ The most radical implications were that inflation-linked, corporate and covered bonds would be removed from the index. In April 2019, however, the Ministry decided to keep all these segments in the index, putting more emphasis on broad market representation than on the role of fixed income as a return stabiliser and liquidity provider.¹²⁹

The decision to include new segments in the fixed-income benchmark has contributed positively to the fund's value. The fixed-income benchmark index is estimated to have returned 6 percentage points more than a benchmark consisting only of government bonds.

Chart 35 Segment composition of the fixed-income benchmark index. Percent.

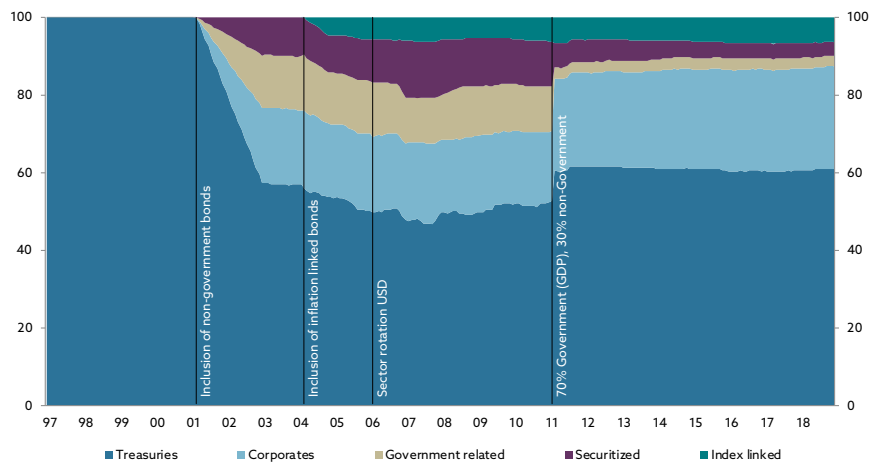


Chart 36 Total return by segment in the fixed-income benchmark index. Percent.

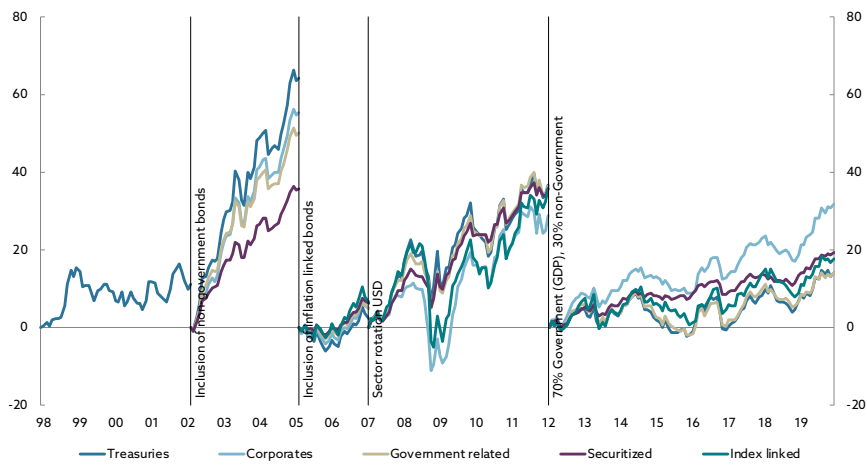


Chart 37 Estimated return impact of adding segments to the fixed-income benchmark index. Percentage points.

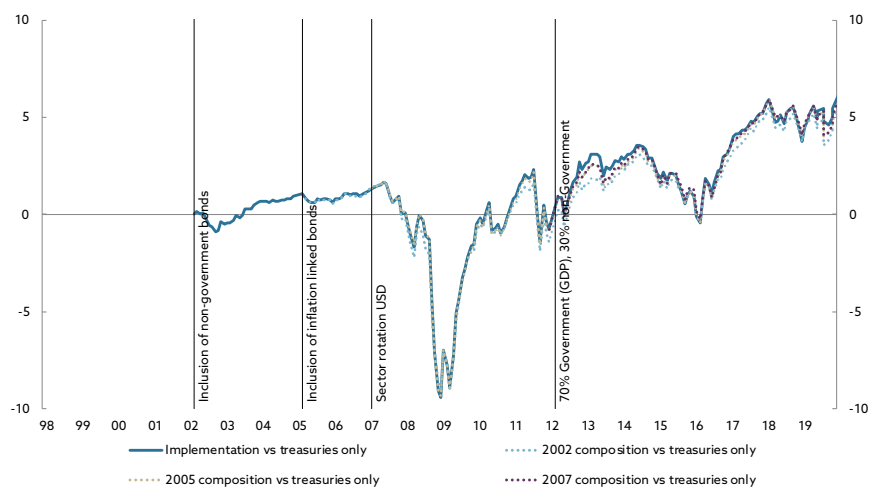
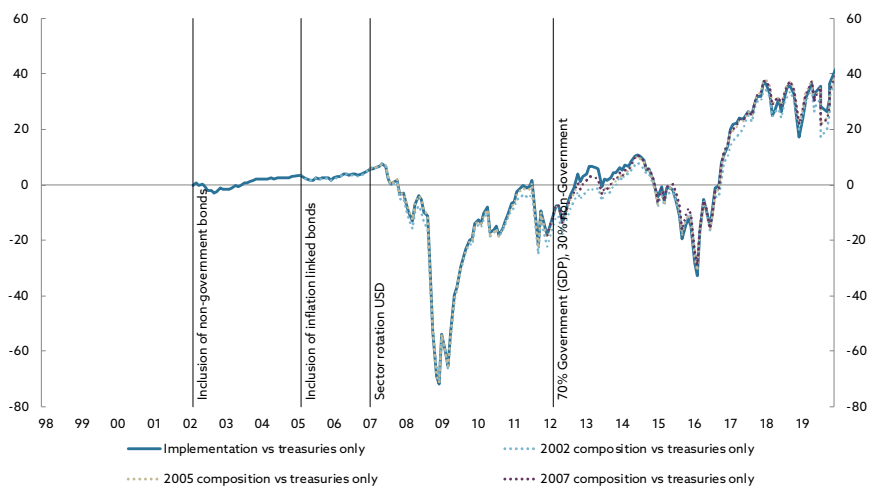


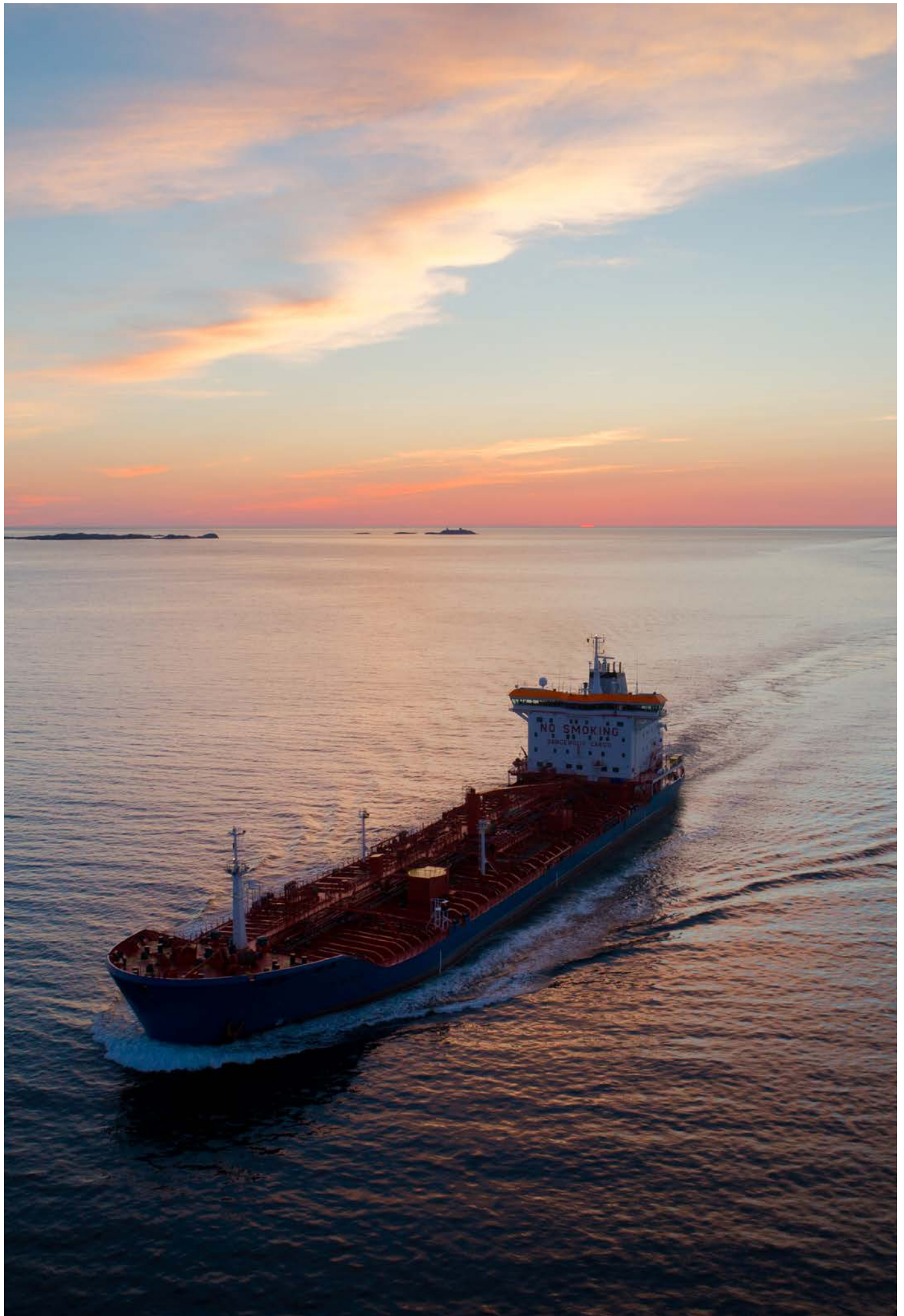
Chart 38 Estimated return impact of adding segments to the fixed-income benchmark index. Billion kroner.



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A global investor

As the fund has grown in size and importance, new requirements and investment opportunities have been added to the management mandate to take advantage of the fund's characteristics as a global, responsible and long-term investor. For various reasons, however, some of these requirements and opportunities are not suitable for inclusion in the benchmark index. The fund's investment strategy can therefore no longer be defined by the benchmark index alone. Our mandate is broader.

As a global investor, our approach is that we should, in principle, include all markets where it is possible for the fund to invest in an efficient, responsible way without exposing it to undesirable risk, be it financial or non-financial. We therefore invest in a broader set of markets and asset classes than the benchmark index, but also choose not to invest in some markets included in the benchmark.

There are investment opportunities available that will improve the diversification of the fund beyond what can be achieved through the benchmark index. The investment universe for the fund is defined in the management mandate, and includes all equities listed on a regulated and recognised marketplace as well as almost all tradable debt instruments. In addition, we are allowed to invest in unlisted real estate and unlisted renewable energy infrastructure.

Equity markets

We are required to approve all markets and financial instruments we invest in. This requirement is laid down in the management mandate and applies to all markets and instruments regardless of whether they are part of the benchmark index or not.

The first step in the approval process is to assess the market or instrument in relation to the fund's investment strategy. This is followed by a broad review of the various risks. In terms of market approval, we look at the legal system, investment protection and other market structure issues in the country. We use information from recognised international organisations and external data providers and may supplement this with information or opinions obtained from legal advisors. The aim of this approval process is to ensure that relevant risks are identified, evaluated and accepted, that all operational issues can be managed, and that the decision to approve a new market, instrument or issuer is consistent with the fund's overall investment strategy.

Historically, we have approved all markets in the equity benchmark index except for Pakistan and Argentina.¹³⁰ In addition, we started investing in the local Chinese equity market several years before it was included in the benchmark index. We have also expanded the list of equity markets to include some less mature markets, known as frontier markets.

2005: Accessing the Chinese equity market

The Chinese equity market is now similar in size to that of Japan and makes up a meaningful part of the global equity market. It is a relatively young stock market, reopened in 1990 after being closed since 1949. Foreign investors have been able to access the local market since 2002, when the Qualified Foreign Institutional Investor (QFII) programme was launched. Only institutions meeting strict criteria were approved. At first, only large global investment banks were granted a quota, but the list of eligible institutional investors was later expanded to include large asset managers and insurance companies. Due to these restrictions on foreign investors' access, the local equity market in China was not part of the fund's benchmark index until 2019, when these restrictions were lifted.

The fund started investing in the local Chinese equity market in 2005. To begin with, we had to borrow part of a quota from Morgan Stanley. In October 2006, Norges Bank was approved as a QFII in its own right, and we obtained our first quota of 200 million dollars in early 2008. This quota was gradually increased, reaching 2.5 billion dollars in early 2010. The decision to invest in the local Chinese market served to broaden the scope of the equity portfolio but pushed the composition of the fund away from that of the benchmark index. Until 2013, our investments in local Chinese equities were financed by selling dollars, but they have since been funded by selling global equities.

During the time we have been investing in local Chinese stocks, the market has seen further liberalisation. The Stock Connect scheme opened up the local Chinese equity market further for foreign investors, as it allowed them to buy local Chinese stocks through the Hong Kong exchange, effectively removing the need for a separate QFII quota. The launch of Stock

Connect and subsequent improvements served as an important catalyst for FTSE's decision to include the local Chinese equity market in its Global All Cap index in June 2019. This meant that the local Chinese equity market was also added to the fund's benchmark index for equities, more than a decade after the fund made its first investments in this market.

Since 2005, the decision to invest in local Chinese stocks has had a positive impact on the fund's relative return. We estimate that these investments have increased the relative return on the portfolio by around 0.20 percentage point.

2012: Adding frontier markets

Not all markets are suitable for benchmark inclusion. Frontier markets fall within this category. These are a group of less mature markets that may be too small, too illiquid or perceived as too risky to be generally considered an emerging market. The Ministry of Finance discussed the possible inclusion of frontier markets in the 2013 white paper on the management of the fund, and it concluded that these markets were not suitable for benchmark inclusion since they require specialist expertise and proximity to each local market. The assessment of whether or not to invest in these markets should therefore be left to Norges Bank.¹³¹ Norges Bank agreed with this view and have invested in these markets since 2012 using external managers with local presence and expertise.

Frontier equity markets offer a different investment environment and opportunity set to other, more mature equity markets. These markets will often be on course for reclassification by the index provider and so for inclusion in the fund's equity benchmark. Rather than waiting for the countries to be included,

Chart 39 Exposure to local equity markets in China. Percent of the fund's market value.

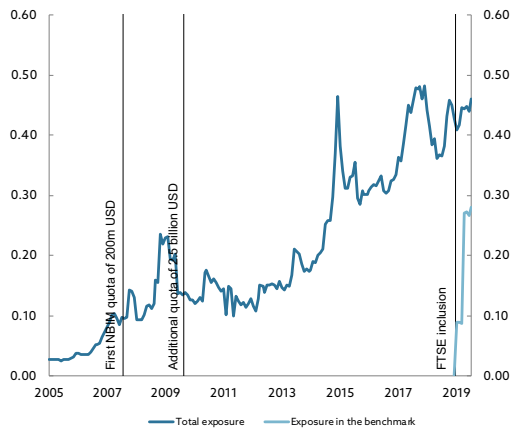


Chart 40 Return contribution from adding local equity markets in China to the portfolio. Percentage points.



Chart 41 Exposure to frontier equity markets. Percent of the fund's market value.

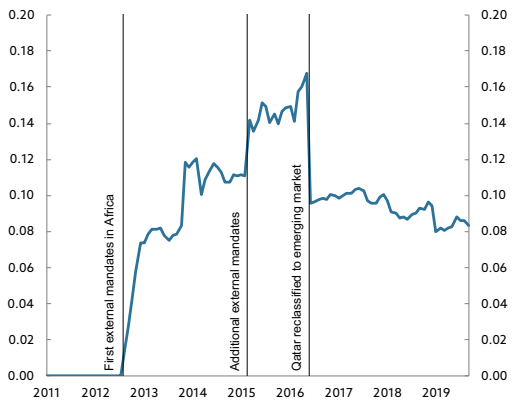
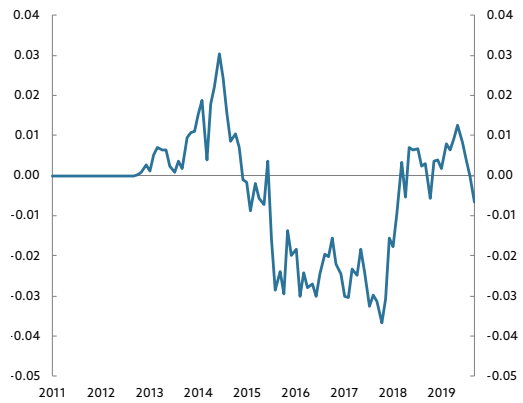


Chart 42 Return contribution from adding frontier equity markets to the portfolio. Percentage points.



we have decided to invest in anticipation of inclusion. In this initial phase, we will often aim for a higher weight than the expected index weight. Investing in anticipation of index inclusion has its advantages. It reduces the total costs for the fund: prices are often higher once a market is included in the benchmark, as many institutional funds buy at the time of announcement of index inclusion or at the actual point of inclusion. By targeting a higher weight than the expected index weight, it also represents a potential source of returns.

The size of the frontier market investments in the fund has varied over time. One reason is that markets have been reclassified from frontier to emerging markets and subsequently become part of the benchmark index. The total exposure to frontier markets can also change based on the existence and capacity of external managers in each market.

Since 2013, the decision to invest in frontier markets has had a minor impact on the fund's relative return. We estimate the contribution to relative return at less than minus 0.01 percentage point.

Fixed-income markets

Fixed-income instruments are not generally traded on regulated exchanges. We therefore define the markets for these instruments using the currencies in which they are issued. The process for approving a given market is the same whether it is an equity market or a fixed-income market (currency). The discussion about which fixed-income markets to approve has mainly been a discussion about emerging market currencies.

Since 2018, the Executive Board has also been required to approve issuers of government bonds. The fund is currently permitted to lend money to 54 different governments. The bonds we invest in must be issued in one of the approved currencies.

2011: Emerging market debt

There are a number of emerging market bond indices available from different index providers. These index products are designed to cater to a wide variety of investors, and the broad indices are not necessarily representative of the entire opportunity set for a single investor.

We did not start to pursue opportunities in emerging markets in a systematic manner until 2011, when we started in the largest emerging markets as measured by their GDP. At this time, the benchmark index did not include emerging market debt issued in local market currencies. This changed in 2012, when investment-grade emerging market bonds were included in the benchmark index. These issuers were removed from the benchmark index again in 2019, due primarily to challenges associated with benchmark dynamics.

In some markets, some foreign investors come up against regulations that limit participation in the local market. Index providers will normally

not include government bonds issued in these countries in their broad indices. One example is India, which has restricted foreign investors' access to its domestic bond market for many years, due to worries about large and potentially unstable capital flows. India's quota regime does not, however, apply to all investors, and it has a separate tranche for sovereign wealth funds. The fund's investment opportunities are therefore different from those of the typical index user.

Another example is Taiwan, which requires foreign investors to own Taiwanese equities to be able to buy local-currency government bonds. As a result, these bonds are not included in indices designed for the typical fixed-income investor. A global multi-asset investor such as the fund, however, is likely to meet the criteria for investing in these bonds.

The timing of an issuer's entry into or exit from the index is decided by the index provider. The main criterion for inclusion in the fund's fixed-income benchmark is that local-currency government debt must be rated investment grade or higher using the middle rating of Moody's, S&P and Fitch. The ratings of sovereign issuers in emerging markets, and hence their eligibility for inclusion in the index, are less stable than for developed-market issuers. As a result, issuers in emerging markets enter and exit the index frequently under rules defined by the index providers.

One example is the Turkish lira, which entered the fund's benchmark index on 31 March 2014 following an upgrade of Turkey's credit rating. At the end of September 2016, however, Turkey was downgraded to non-investment grade and removed from the index.

Another example is South Africa, which was downgraded on 24 November 2017 and removed

from the benchmark index the same month. For a large fund, it was a challenge to adjust the portfolio to sudden changes of this kind in a cost-effective manner.

In October 2013, the fund's index provider announced that Russia would be included in the index on 31 March 2014. In February/March 2014, Russia annexed the Crimean peninsula, causing the rouble to depreciate significantly following inclusion in the index. As expected, this kind of geopolitical event did not alter the index provider's decision to include Russia.

The case of the inclusion of Russia in the benchmark revealed some other challenges relating to the use of GDP weights in emerging markets. The fund's benchmark index for government bonds is weighted according to the size of a country's GDP. In markets where GDP is high relative to the size of the local bond market, it will be challenging for a large investor such as the fund to invest in line with the benchmark. If the fund had invested in line with the benchmark at the time Russia was included in 2014, the fund would have owned close to 40 percent of the Russian government bond market. To ensure an investable benchmark for the fund, the Ministry therefore decided, based on advice from Norges Bank, to introduce investability factors prior to the inclusion of Russia. These investability factors reduced the benchmark allocation to the Russian government bond market to a quarter of the size otherwise indicated by the benchmark index.

Challenges related to index construction – regulation, rating dynamics and investability – were a key reason why the Ministry decided in 2019, on the advice of Norges Bank, to remove emerging market debt from the benchmark index. Investments in emerging market debt expose the fund to a different set of risks to



investments in government bonds from developed markets. They are typically less liquid and come with a higher credit risk.

Today, we invest in bonds issued by selected emerging market issuers within an overall limit of 5 percent of the fund's fixed-income portfolio, corresponding to roughly 1.5 percent of the value of the fund. We invest in both investment-grade and non-investment-grade issuers. To finance these investments, we sell government bonds denominated in dollars, euros, yen and pounds sterling. This serves to push the currency composition of the fund away from the benchmark index.

Since 2011, our investments in emerging market debt have contributed negatively to the fund's relative return. We estimate that these investments have reduced the relative return by around 0.45 percentage point. A significant share of this can be explained by the Russia inclusion and factor adjustment in 2014.

Chart 43 Exposure to emerging market local-currency debt. Percent of the fund's market value.

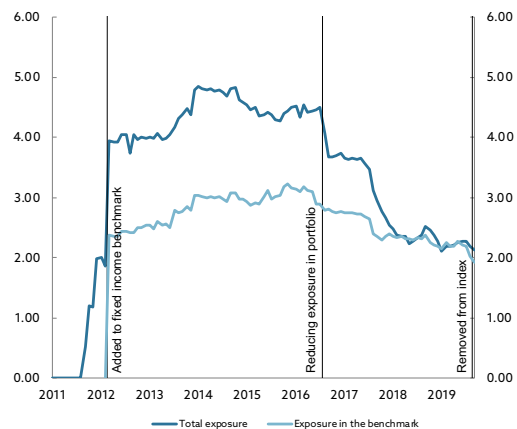
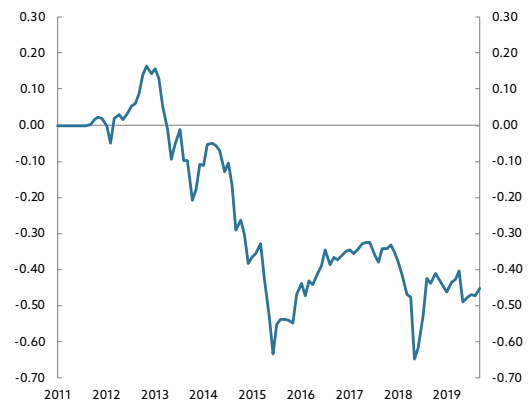


Chart 44 Return contribution from adding and changing the composition of emerging market local-currency debt to the portfolio. Percentage points.



Other asset classes

The fund is also permitted to invest in unlisted real estate and unlisted renewable energy infrastructure. Discussions about infrastructure investments in the fund date back to 2006, but it was not until November 2019 that the Ministry allowed investments in unlisted renewable energy infrastructure, as part of the environment-related mandates.

Real estate investments have been extensively discussed since the early days of the fund. The discussions have highlighted the potential diversification benefits and potential enhanced returns. The most challenging issue over the years, however, has been to come up with an appropriate management model, as the investment strategy for unlisted investments is difficult to define through an index. Although broad unlisted real estate indices are available, replication of such an index would require the fund to obtain small stakes in a huge number of properties, which would be impossible in practice.

2010: Introducing real estate

Real estate investments were first discussed by the Ministry of Finance in 2001 and then in more detail by Norges Bank in 2002.^{132,133} No concrete proposals were put forward until 2006, when Norges Bank recommended a 10 percent allocation to real estate and infrastructure.¹³⁴ These investments could improve the fund's diversification and enhance returns, but would require an adjustment of the governance model, Norges Bank argued. In 2007, the Ministry of Finance decided to explore Norges Bank's proposal, acknowledging both the potential diversification benefits and the challenges related to the governance model.¹³⁵

In March 2010, Norges Bank was given a mandate to invest up to 5 percent of the fund in real estate. The real estate portfolio was

included in the fund's benchmark index at its actual value, but it was not included in the calculation of the fund's tracking error relative to the benchmark. Under this mandate, the returns on the real estate portfolio were evaluated against the Investment Property Databank index. As the portfolio grew towards 2–3 percent, it became clear that this solution brought both operational challenges and inconsistencies at the fund level in terms of both risk management and performance measurement.

In 2015, the Ministry asked Norges Bank and a group of experts to evaluate the allocation to real estate and the regulatory framework.¹³⁶ Both responses recommended a larger allocation and a move towards a version of the "opportunity cost" model, where unlisted investments are managed as part of a holistic approach and more decisions rest with the asset manager.¹³⁷ The Ministry reached a decision on both the allocation and the regulatory framework in the 2016 white paper.¹³⁸ Real estate was removed from the fund's benchmark index, which has since included only listed equities and tradable bonds. Norges Bank's scope to invest part of the fund in real estate has since been restricted by specific limits in the mandate, of which the overall limit for deviation from the benchmark index, or tracking error, has been the most important.

2017: A new framework for real estate

The fund bought its first property on Regent Street in London in 2010 and had built a sizeable allocation to the asset class by the time real estate was removed from the benchmark index. With the new holistic framework, Norges Bank needed a different set of systems and processes to manage existing and future real estate investments. When we buy a property, we need to sell other assets to finance the purchase, known as funding. From 2010 to 2016, the fund's

real estate investments were funded by selling a slice of the fixed-income benchmark, i.e. all securities in the fixed-income index. The new regulatory framework for real estate was introduced in 2017. The new framework served to improve the Ministry's control over total and relative risk in the fund and has made it easier to measure the long-term allocation impact of the fund's real estate investments. From 2017, real estate investments have been funded by selling a tailored mix of equities and fixed-income assets.

Historically, real estate returns have moved differently to those on equities and fixed income, although the correlations have varied over time. The composition of the funding is chosen with the aim of keeping market risk and currency risk in line with the benchmark index, to avoid increasing the fund's total risk. To address market risk, we sell a mix of equity and

fixed-income assets tailored to the specific property investment. The funding mix will, for instance, reflect differences in sector composition and leverage. To limit currency risk, we sell equities and fixed income in the same currency as the real estate investment. We manage our unlisted investments and selected large strategic investments in listed real estate trusts and companies under a combined strategy. Over the long term, our combined real estate investments are expected to outperform their respective funding without increasing the fund's total risk. On the other hand, we also have to expect periods of significant under-performance.

The decision to invest in real estate has had a positive impact on the fund's return. Since 2011, our listed and unlisted real estate investments have contributed around 0.88 percentage point to the return on the fund.

Chart 45 Exposure to unlisted and listed real estate. Percent of the fund's market value.

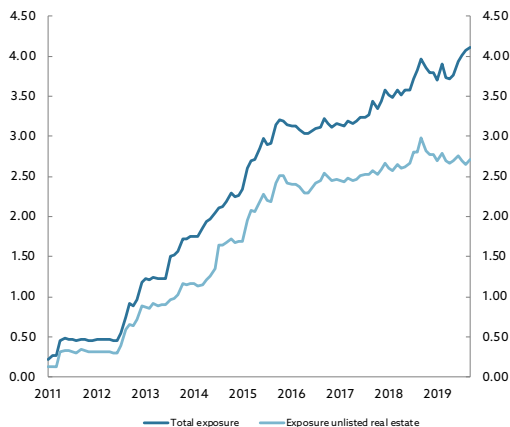
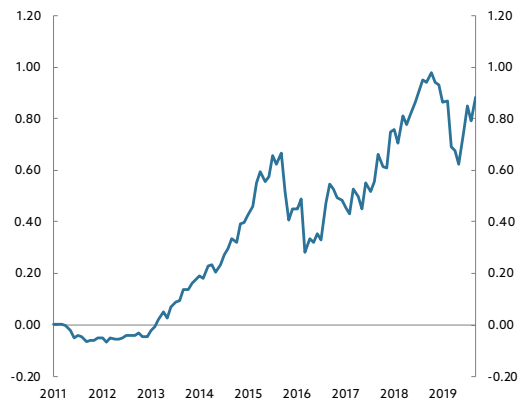
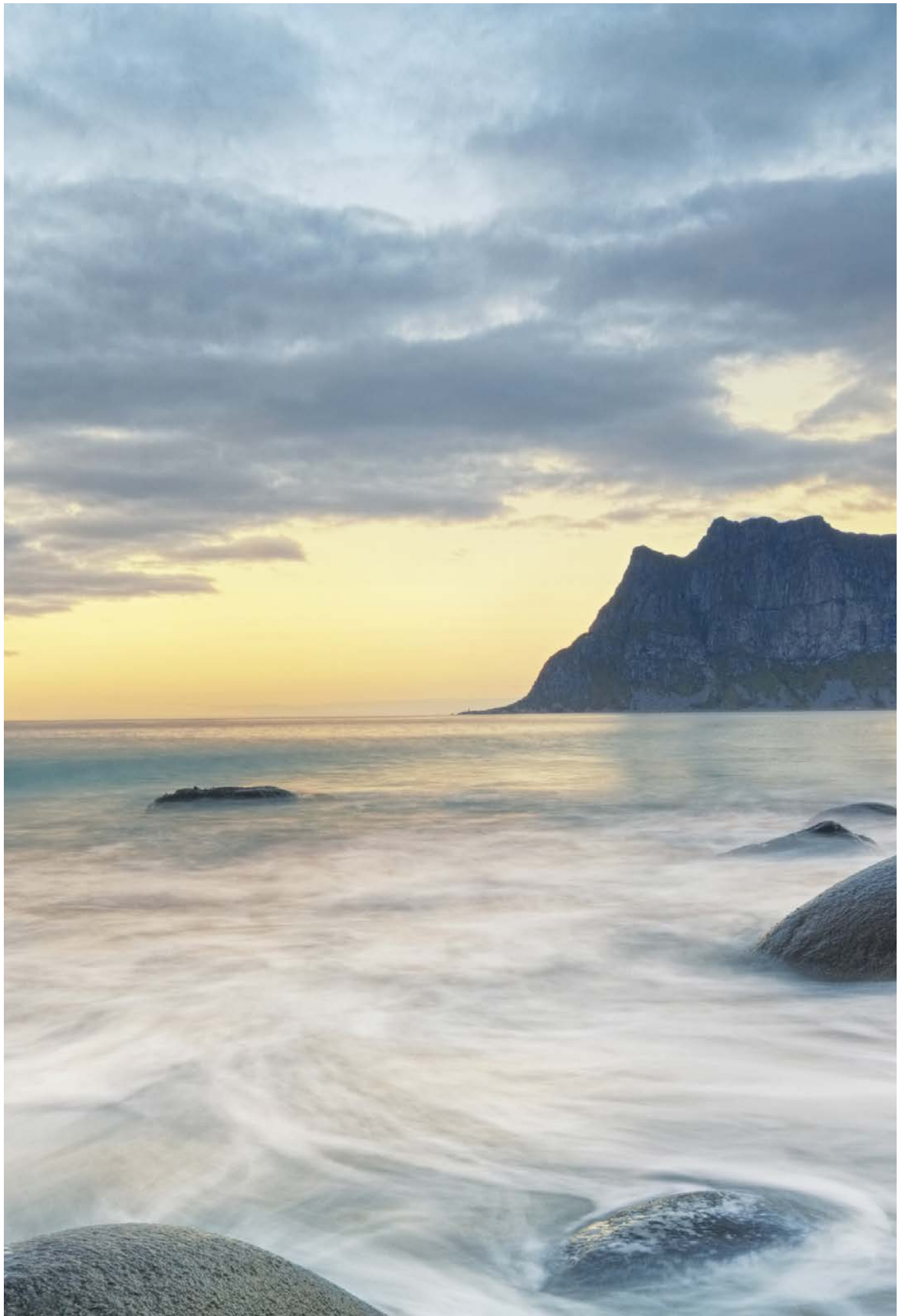


Chart 46 Absolute return impact from adding real estate relative to equities and fixed income sold to finance purchases. Percentage points.





A responsible investor

Expectations as to how we manage the fund have evolved over time. We are expected to be a responsible investor and to tilt the portfolio towards environmental investments. This results in a portfolio that is compelled to deviate from the benchmark index, but the objective is still to achieve the highest possible return within the constraints imposed by the management mandate. Two examples describe our approach to being responsible in practice: company divestments and environmental investments.

Under our mandate, responsible investment is to be an integral part of our management of the fund, and we are required to establish a chain of measures for this work. Our work on responsible investment can be divided into three pillars: establishing principles, exercising ownership rights and investing sustainably. We aim to invest sustainably by assessing how companies impact the environment and society, and see opportunities in companies that enable more environmentally friendly economic activity. There are also companies we choose not to invest in for sustainability reasons, and companies we are not allowed to invest in based on the guidelines for observation and exclusion. The companies excluded under the guidelines for observation and exclusion are also excluded from the fund's benchmark index, while the companies we choose to divest from remain in the benchmark index.

2012: Company divestments

We may decide to divest from companies that impose substantial costs on other companies and on society as a whole. We refer to this category as risk-based divestments. The companies we divest from are viewed as unsustainable over the longer term and will often have business models that conflict with prevailing technological, regulatory or environmental trends.

The first risk-based divestments were made in the first quarter of 2012, when we sold our stakes in 23 companies that produced palm oil unsustainably, based on our internal evaluation. Before reaching this decision, we reviewed a large number of companies contributing to tropical deforestation through their involvement in the palm oil industry in Malaysia and Indonesia.

By December 2019, we had divested from a total of 282 companies. This includes company divestments based on climate change, corruption, water management and human rights. Each risk-based divestment is matched with an overweight in other equities from the same country. The performance of these companies can be volatile and result in significant over- and underperformance relative to the benchmark index.

Since 2012, risk-based divestments have had a positive impact on the fund's relative return. We estimate that the decision to divest from certain companies has increased the relative return on the portfolio by around 0.13 percentage point, the main contributors being divestments linked to climate change and human rights.

1999/2009/2019: Environmental investments

Ever since the late 1990s, there have been extensive discussions around whether the fund's portfolio should be tilted towards environmentally friendly investments. Throughout, Norges Bank's position has been that it is challenging to reflect such requirements in the benchmark index. For one thing, it is difficult to define precisely which investments fall into this category, and definitions could change over time.

1999: The environmental fund

In the revised national budget for 1999, the government decided to create a separate environmental portfolio to address ethical and environmental considerations in the management of the oil fund. The environmental fund, as it was known, was established on 1 January 2001 and managed as a separate portfolio within the main fund. The investment universe, decided by the Ministry of Finance, was based on positive selection criteria defined by the Ethical Investment Research and Information Service. The environmental fund invested exclusively in developed-market equities and was managed as an index fund. It was wound down in 2004 on account of poor performance and the introduction of the ethical guidelines for the fund that year.

2009: Active investment mandates

Following a public review of the ethical guidelines in 2008, the Ministry of Finance recommended creating a special investment programme focusing on eco-friendly activities or technologies expected to have clear environmental benefits.¹³⁹ At that time, the Ministry was considering defining a separate investment universe for environmental investments that also included unlisted equities and infrastructure.

In the national budget for 2010, it was decided that Norges Bank should establish dedicated environment-related mandates within the fund's existing investment universe.¹⁴⁰ From 2010 to 2012, this was reflected in the management mandate as a reporting requirement. In 2012, the Ministry decided to specify a range for these investments. Initially set at between 20 and 30 billion kroner, it has subsequently been increased three times and currently stands at between 30 and 120 billion kroner. This mandate requirement compels the composition of the portfolio to deviate from the benchmark index.

Norges Bank established the first environment-related mandates in December 2009, a few months ahead of the new mandate requirement. The mandates have been managed both internally and externally. We decided in 2018 to manage all environment-related mandates internally. Based on the requirements set out by the Ministry, the fund's environment-related equity investments have concentrated on companies in low-emission energy and alternative fuels, clean energy and energy efficiency technology, and technology and services for the management of natural resources.¹⁴¹

The environment-related mandates have had a positive impact on the fund's relative return. Since 2010, we estimate that they have increased the relative return on the portfolio by around 0.37 percentage point.

2019: Infrastructure for renewable energy

Discussions about infrastructure investments in the fund date back to 2006. Norges Bank has argued throughout that these investments should be part of the fund's investment universe, acknowledging the need to approach new investment opportunities gradually as the

market matured. The Ministry, however, exercised caution and decided against including them in the fund.

Following discussions in 2018, the parliamentary finance committee asked the Ministry to present the Storting with a specific proposal for investments in unlisted renewable energy infrastructure as part of the environment-related mandates. In the 2019 white paper, the Ministry concluded that the fund should be allowed to invest in unlisted renewable energy infrastructure, and investments in the segment were duly included in the fund's investment universe under the environment-related mandates late that year. The upper limit for the environment-related mandates was also doubled from 60 to 120 billion kroner. The focus of these investments will initially be on European and North American wind and solar power generation. Over time, we expect our renewable investments to diversify the fund and generate higher returns than the assets we sell to finance them.

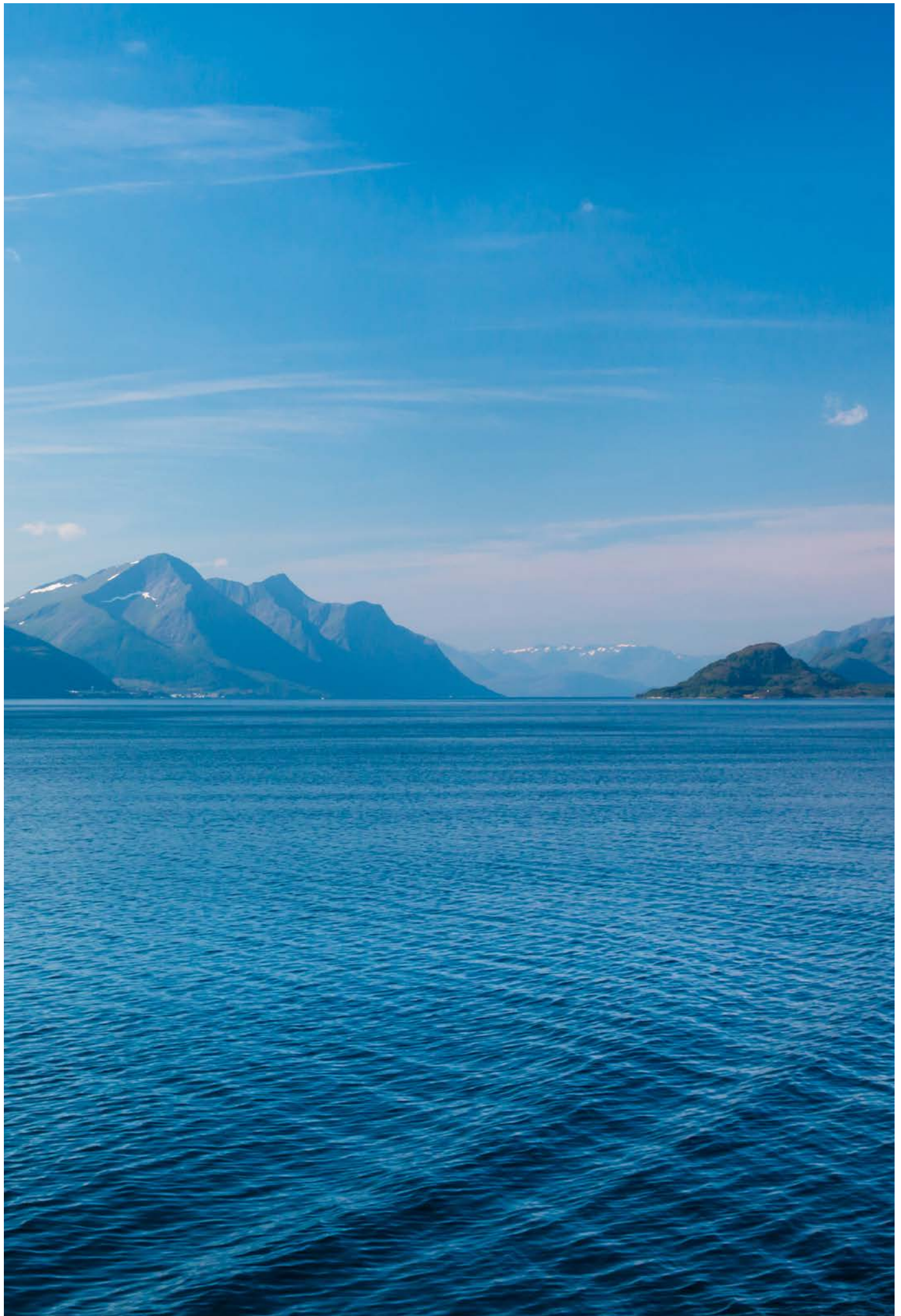


Chart 47 Size of company divestments. Percent of the fund's market value.

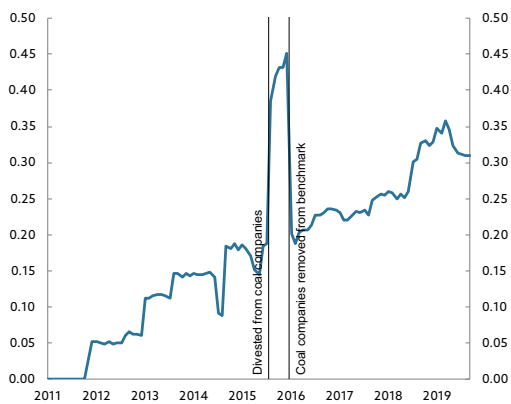


Chart 48 Return contribution from company divestments in the portfolio. Percentage points.

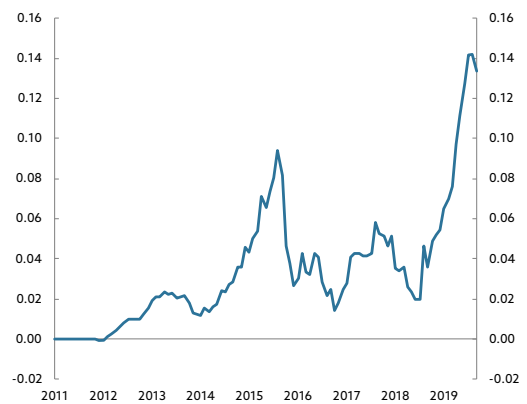


Chart 49 Size of the fund's environment-related investment mandates. Percent of the fund's market value.

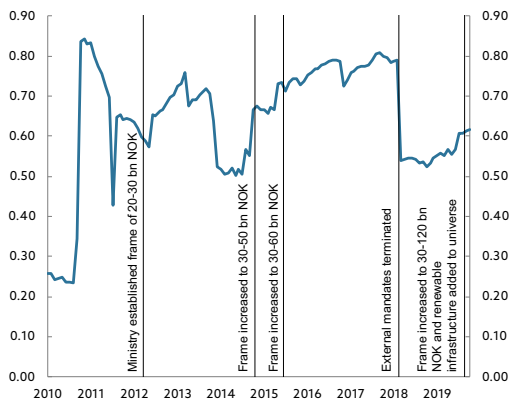
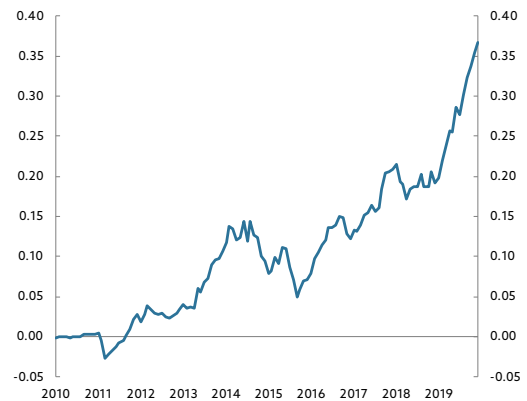


Chart 50 Return contribution from adding environment-related investment mandates to the portfolio. Percentage points.





A long-term investor

The fund is a long-term investor. This has implications for the appropriate level of risk in the fund. A long-term investor will typically have a high capacity for risk and so an ability to ride out periods of short-term market volatility. There may also be certain types of risk we are less suited to take on. The appropriate risk level will depend on the owner's specific risk preferences.

Our management mandate requires us to construct the portfolio in such a way that the expected excess return is exposed to various risk factors. We are also required to take account of the fiscal strength of the governments to which we lend.

2012: Equity risk factors

The negative relative performance in 2008 triggered a discussion about Norges Bank's active management, and the Ministry commissioned an independent expert review the following year.¹⁴² The report showed that a significant component of the fund's relative performance could be explained by exposure to systematic factors that had fared very poorly during the financial crisis. The experts did, however, believe exposure to such factors to be appropriate for a long-term investor such as the fund. The recommendation was to move towards a more top-down, explicit approach to strategic and dynamic factor exposures, rather than treating them as the implicit by-product of other active management strategies.

Risk factor strategies need to evolve over time and require discretionary assessments and frequent trading. These types of strategies also need to be tailored to fund specifics to ensure investability.¹⁴³ They are not therefore well suited to benchmark inclusion, despite the availability of different risk factor products from a range of index providers. The Ministry concluded in the

2012 white paper that tilts towards systematic equity risk factors would best be achieved as part of operational management, and decided that the responsibility for exposure to equity risk factors should be delegated to Norges Bank.¹⁴⁴ It was emphasised that a tilt towards systematic risk factors may result in consecutive negative excess returns over periods of several years, and increased losses during periods of major stock market slumps, but that the fund seemed well positioned to take on this type of risk.

In late 2012, risk factor strategies were introduced into the fund's portfolio in a systematic manner with exposure to the value and size factors. Exposure to the quality factor followed in 2015. Due to frequent factor rebalancing, careful implementation is needed to minimise trading costs. Over time, we have adjusted the rules governing our exposure to avoid trading stocks that have not changed materially based on their value, size or quality metrics.

Since 2012, risk factor strategies have had a negative impact on the fund's relative return. We estimate that they have reduced the relative return on the portfolio by around 0.08 percentage point. In the longer term, we expect risk factor strategies to diversify the fund's equity market exposure and add to overall fund returns. The experience over the past decade has, however, confirmed that an investor

following these types of strategies must be prepared and able to ride out long periods of weak performance.

2011: Fiscal strength

The debt crisis in Europe that began in late 2009 led to growing concerns about the fiscal strength of some of the issuers in the benchmark index. These concerns were reflected in large increases in yield spreads between euro bond issuers with weak and strong government finances. The Ministry of Finance therefore decided in 2012 to introduce a new restriction in the mandate that required Norges Bank to take fiscal strength into account in the composition of the fund's fixed-income portfolio. This requirement is not, however, reflected in the benchmark index.

To fulfil the fiscal strength requirement in the mandate, we adjust the weights assigned to different countries from the euro area in the benchmark index. This effectively results in an underweight in bonds issued by countries deemed to have weaker government finances, and a corresponding overweight in bonds from those considered to have stronger finances. To evaluate fiscal strength across countries, we use indicators based on a range of economic variables, including the ratio of government debt to GDP, budget balance, debt-servicing costs and the maturity profile of outstanding government debt.

The fiscal strength adjustment typically improves the fixed-income portfolio's ability to reduce fund volatility during times of fiscal stress, especially in the euro countries. Furthermore, it increases the liquidity of our holdings. However, this insurance-type return profile comes at a cost. Viewed in isolation, the fiscal strength adjustment results in a lower expected return for the portfolio.

Since 2012, the fiscal strength adjustment has had a negative impact on the fund's relative return. We estimate that it has reduced the relative return on the portfolio by around 0.22 percentage point.

We need to construct a portfolio that deviates from the benchmark index in order to fulfil the obligations in our management mandate. In addition to meeting these requirements, we aim to pursue investment opportunities that are difficult to capture in the benchmark. Not all markets and assets are suited to benchmark index inclusion. The adjustments we make have significantly less impact on the fund's overall return than the decisions made in the construction of the benchmark index. Nonetheless, with a large fund under management, seemingly minor decisions may have important implications for the value of the fund. Through to the end of 2019, these adjustments taken together contributed positively to the fund's relative return, and we expect them to continue to do so over the long term.

Chart 51 Exposure to systematic equity risk factors.
Percent of the fund's market value.

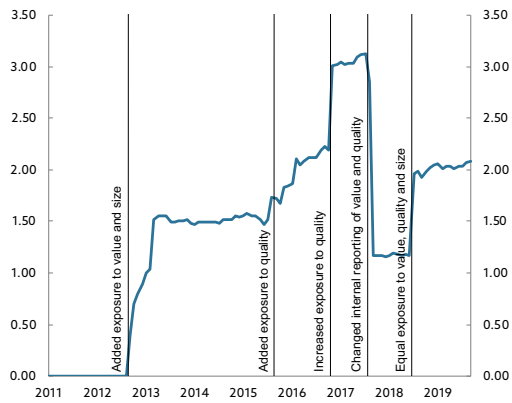


Chart 52 Return contribution from adding systematic equity risk factors to the portfolio. Percentage points.

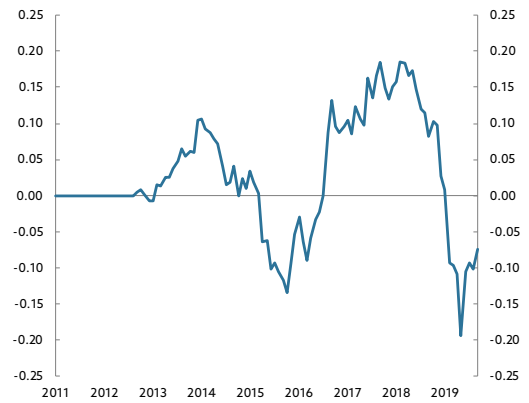


Chart 53 Size of the fiscal strength adjustment.
Percent of the fund's market value.

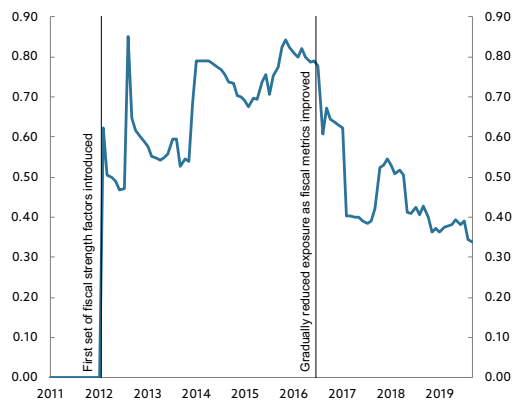
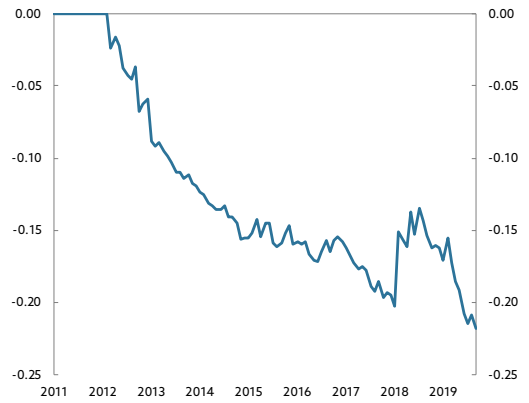


Chart 54 Return contribution from the fiscal strength adjustment. Percentage point.



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Endnotes

1 The fund

The history

- ¹ Official Norwegian Reports NOU 1983:27: The future extent of petroleum activities on the Norwegian Continental Shelf
- ² Report to the Storting No. 25 (1973–74): The role of petroleum activity in Norwegian society
- ³ Proposition to the Odelsting No. 26 (1974–75): Act relating to the taxation of subsea petroleum deposits etc.
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- ⁶ Proposition to the Odelsting No. 29 (1989–90): Act relating to the Government Petroleum Fund
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- ⁹ Report to the Storting No. 3 (1995–96): Central government accounts for 1995
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- ¹³ Proposition to the Odelsting No. 2 (2005–2006): Act relating to the Government Pension Fund
- ¹⁴ Proposition 97L (2018–2019): Act relating to Norges Bank and the monetary system etc. (the Central Bank Act)
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- ¹⁶ Proposition to the Odelsting No. 29 (1989–90): Act relating to the Government Petroleum Fund
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- ¹⁸ Regulation on the management of the Government Petroleum Fund of 10 May 1996
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- ²⁰ Regulation on the management of the Government Petroleum Fund of 3 October 1997
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- ²² Recommendation 165 S (2018–2019): Organisation of Norges Bank and the management of the GPFG
- ²³ Report to the Storting No. 10 (2009–2010): The management of the Government Pension Fund in 2009
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- ²⁹ Letter from Norges Bank of 22 August 1997: Proposals for guidelines for the Government Petroleum Fund
- ³⁰ Report to the Storting No. 1 (1997–98): National budget for 1998
- ³¹ Management agreement between the Ministry of Finance and Norges Bank of 12 February 2001
- ³² Agreement between the Ministry of Finance and Norges Bank on strategic advice for the Petroleum Fund of 21 June 2004
- ³³ Report to the Storting No. 24 (2006–2007): The management of the Government Pension Fund in 2006

The mandate

- ³⁴ Letter from Norges Bank of 8 January 2018: Government Pension Fund Global – unlisted equity investments
- ³⁵ Letter from Norges Bank of 22 August 1997: Proposal for guidelines for the Government Petroleum Fund
- ³⁶ From 1998 to 2005, the mandate included a requirement that the duration should be kept between three and seven years
- ³⁷ Report to the Storting No. 1 (1997–98): National budget for 1998
- ³⁸ Report to the Storting No. 16 (2007–2008): The management of the Government Pension Fund in 2007
- ³⁹ Letter from Norges Bank of 11 March 2005: Proposed changes to the framework for the operational management of the Petroleum Fund
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- 54 Letter from Norges Bank of 21 October 2009: Hearing on new rules for the management of the Government Pension Fund Global

2 The index

The fund index

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- 56 Report to the Storting No. 4 (1996–97): The long-term programme 1998–2001
- 57 Letter from Norges Bank of 10 April 1997: Future management of the Government Petroleum Fund
- 58 Report to the Storting No. 3 (1996–1997): Revised national budget for 1997
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- 63 Report to the Storting No. 24 (2006–2007): The management of the Government Pension Fund in 2006
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- 68 Letter from the Ministry of Finance of 12 February 2016: The benchmark index for the Government Pension Fund Global
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- 71 Report to the Storting No. 15 (2010–2011): The management of the Government Pension Fund in 2010

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The fixed-income index

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121 Letter from Norges Bank of 21 March 2002: Expanding the Petroleum Fund’s investment universe
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- ¹²⁹ Report to the Storting No. 20 (2018–2019): The Government Pension Fund 2019

3 The mandate

A global investor

- ¹³⁰ Argentina was part of the FTSE Global All Cap and hence the fund's benchmark index for equities from October 2008 to December 2010
- ¹³¹ Report to the Storting No. 19 (2013–2014): The management of the Government Pension Fund in 2013
- ¹³² Report to the Storting No. 2 (2000–2001): Revised national budget for 2001
- ¹³³ Letter from Norges Bank of 21 March 2002: Expanding the Petroleum Fund's investment universe
- ¹³⁴ Letter from Norges Bank of 20 October 2006: Advice on the investment strategy for the Government Pension Fund Global
- ¹³⁵ Report to the Storting No. 24 (2006–2007): The management of the Government Pension Fund in 2006
- ¹³⁶ Letter from the Ministry of Finance of 26 March 2015: Investments in real estate and infrastructure in the Government Pension Fund Global (GPFGL)
- ¹³⁷ Letter from Norges Bank of 25 November 2015: Government Pension Fund Global – investments in real estate; letter from Norges Bank of 26 November 2015: The framework for the management of the Government Pension Fund Global
- ¹³⁸ Report to the Storting No. 23 (2015–2016): The management of the Government Pension Fund in 2015

A responsible investor

- ¹³⁹ Report to the Storting No. 20 (2008–2009): The management of the Government Pension Fund in 2008
- ¹⁴⁰ Report to the Storting No. 1 (2009–2010): National budget for 2010
- ¹⁴¹ Report to the Storting No. 20 (2008–2009): The management of the Government Pension Fund in 2008; letter from Norges Bank of 30 October 2018: The Government Pension Fund Global's environment-related investment mandates

A long-term investor

- ¹⁴² Ang, A., Goetzmann, W. and Schaefer, S. (2009): Evaluation of active management of the Norwegian Government Pension Fund Global
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Methodology of calculations

Quantifying the impact of specifications in the fund's benchmark index poses several challenges. Going far back in time, data are not always available in the quality and resolution required for precise calculations. The methodologies for alternative index definitions are not always obvious from first principles. Finally, the elements of the index methodology do not exist as separate and independent parts, and changes to one may have consequences for other parts of the specifications.

Consequently, attempts at quantification will be of an approximative and analytical nature, and results will be dependent on the assumptions and modelling decisions made. In the following, we summarise the main assumptions and methods used in the calculations in Chapter 2. The general ambition has been to find a relatively simple and robust methodology which captures the main elements of the specification in question, and to be as consistent as possible in the approach when considering different questions.

General

- Calculations are based on monthly single-constituent data aggregated up to monthly returns. No tax adjustment has been applied.
- Filters and weights have been applied to the resolutions of country and size segment on the equity side, and country, currency and segment on the fixed-income side.
- All percentage return and percentage return impact figures are dollar-based.
- Absolute returns are aggregated geometrically from monthly returns.
- The percentage return impact is the arithmetic difference between the two absolute return series in question. "A vs B" indicates that the cumulative absolute returns of alternative B are subtracted from the cumulative absolute returns of alternative A.
- Return impact figures in kroner are calculated by comparing two emulated net asset value time series from the two underlying absolute return series. For each series, absolute returns in kroner are calculated at a monthly resolution. An emulated monthly net asset value series is then built by applying the return to the previous month-end's net asset value, and adding the monthly contribution or withdrawal. The arithmetic difference between these two emulated net asset value time series is then shown.
- Contribution and withdrawal figures are based on the fund's actual historical data at a monthly resolution.

The fund index

- All return calculations start on 1 January 1998. Previous assets are treated as an initial contribution.
- In the return calculations, the asset class returns are based on index returns:
 - Equities: FTSE Russell All World until September 2003, FTSE Global All Cap from October 2003
 - Fixed income: Bloomberg Barclays Global Aggregate Total Return Index Value Unhedged

- The asset class weights used for the return calculations are set to strategic weights each quarter-end and float with performance within each quarter, with the exception of the following periods when the equity share in the benchmark index was in transition:
 - Introduction of equities from January to May 1998
 - Transition from 40 to 60 percent from June 2007 until January 2009
 - Transition from 60 to 70 percent from May 2019
- Chart 2 “Asset allocation in the benchmark index” shows the actual asset class benchmark weight in the index. For the period from 31 March 2011 to 31 December 2016, investments in unlisted real estate have been included in the index based on their net asset value.
- Chart 3 “Equity share in the benchmark index and the investable market” shows the relative investable market capitalisation weight of the underlying equity and fixed-income indices, compared with the actual equity weight of the fund’s benchmark index.

The equity index

- All return calculations start on 1 February 1998.
- The regional weights are based on strategic weights in the periods from 1 January 1998 to 31 December 2002 and 31 July 2006 to 31 May 2012. Between and after these periods, the actual regional weights/country factors have been used.
- Alternative benchmark returns are based on changing only the indicated specification. For instance, when considering a benchmark consisting only of large/mid-cap stocks after 2007, the regional composition has been left unchanged.
- The market classification shown in Charts 15–18 on the inclusion of new markets is based on their classification before entering the index. For instance, the weight of European emerging markets includes Greece even after FTSE Russell reclassified Greece as a developed market.

The fixed-income index

- Return calculations and most comparisons start on 1 January 2002. An exception are Charts 29 and 30 on the return impact of emerging market inclusion, which start on 20 June 2012.
- The regional and segment weights shown are based on actual benchmark index weights. Return calculations are based on strategic weights.
- Alternative benchmark returns are based on changing only the indicated specification. For instance, when considering a benchmark consisting only of government bonds after 2001, the regional composition has been left unchanged.
- Chart 8 “Number of currencies in the fund’s fixed-income benchmark index” and Chart 9 “Number of bonds in the fund’s fixed-income benchmark index” reflect the decision to remove emerging market currencies only for illustrative purposes, as the transition towards this new strategic benchmark is still ongoing.

Glossary

Allocation:

Allocation refers to how an investment portfolio is divided between different asset classes (e.g. equities and bonds). We differentiate between the fund's strategic allocation and its actual allocation. The strategic allocation is expressed by the composition of the benchmark index and is an expression of the Ministry of Finance's fundamental risk tolerance and return expectations. The actual allocation is expressed by the composition of the portfolio.

Benchmark index:

The strategic benchmark index defines a set allocation between equities and bonds and contains a given number of securities determined by the criteria used by the index provider for inclusion in the index. The values of different asset classes will move differently over time, however, which means that the benchmark index's asset allocation will move away from the strategic weights. To avoid it from straying too far, the Ministry of Finance has issued rules on the rebalancing of the equity share in the benchmark index.

Correlation:

The correlation shows the strength and direction of the relationship between two variables. If the correlation is perfectly positive, or equal to 1, this means that the two variables always move in unison. If it is 0, there is no relationship at all between how they move. A perfectly negative correlation, or -1, means that the two variables always move in the exact opposite way. Unless there is a perfectly positive correlation between the returns on individual investments, the risk in a portfolio can be reduced by spreading investments across more assets (diversification).

Credit risk:

Credit risk is the risk of loss as a result of the issuer of a security, or counterparty in a transaction, failing to fulfil its obligations, e.g. due to bankruptcy.

Diversification:

The risk in a portfolio can normally be reduced by including different types of assets. The value of the portfolio will then be less sensitive to fluctuations in the value of a particular security, sector or market. Spreading the risk in this way can improve the trade-off between expected return and risk. The potential benefits of diversification are the reason why the fund's benchmark index spans different asset classes, a vast number of countries, sectors and companies.

Duration:

Duration is a measure of the average time remaining until all the cash flows on a bond are paid – both the coupon (interest) and the principal (the actual loan). The value of a bond is sensitive to movements in interest rates, and this sensitivity increases with duration.

Expected relative volatility:

The owner of a portfolio will normally set limits on how much risk the manager may take. One approach is to define a benchmark index together with limits on how much the return on the actual portfolio can be expected to deviate from the return on the benchmark. In the management mandate for the fund, the Ministry of Finance has set a limit for expected relative volatility (also known as tracking error), which is the expected standard deviation in the difference between the expected return on the portfolio and the expected return on the actual benchmark index.

Index:

An index is a set of securities selected on the basis of criteria defined by the index provider. The index return is the average return on the securities included in the index. If it is possible to invest a portfolio in line with the composition of an index, the index is referred to as investable. When an index is used as a yardstick for the return on a particular portfolio, it is called a benchmark index.

Investment universe:

The investment universe consists of all of the assets, sectors and countries in which the fund may be invested, and includes more securities than the benchmark index.

Liquidity premium:

A liquid security can be sold relatively quickly and for a relatively predictable price. The liquidity premium is the expected compensation for investing in securities that are not liquid.

Market risk:

This is the risk of the value of a security or portfolio changing as a result of broad movements in market prices. Higher market risk is normally assumed to mean higher expected returns.

Market weights:

A portfolio or index is market-weighted when each individual security or asset is included with a weight that reflects its share of the total value of the market (also known as market capitalisation).

Portfolio:

The fund's investment portfolio is the sum of its investments. The composition of the portfolio will normally differ from the benchmark index.

Risk factors:

Risk factors affect the return on a broad set of investments. Investors may require an expected return over and above the risk-free interest rate to compensate for exposure to systematic risk factors, which means that the risk from these factors cannot be reduced through diversification. This excess return is known as a factor premium. Exposure to one or more factors is referred to as factor risk. Known systematic factors in equity markets include market risk, size, value, momentum and volatility. Important systematic factors in the bond market include duration and credit.

Risk premium:

Investors will normally require an expected return over and above the risk-free interest rate for any risk exposure that cannot be eliminated through diversification. This excess return is known as a risk premium.

Unlisted investments:

Unlisted investments are assets that are not traded in an open and regulated marketplace.







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