Norwegian Ministry of Finance
Boks 8008 Dep.
0030 Oslo

Date: 21.08.2019

Geographical distribution of the benchmark index for equities

The management objective for the Government Pension Fund Global (GPFG) is the highest possible return after costs measured in international purchasing power, given an acceptable level of risk. Within this overall financial objective, the fund is to be a responsible investor. As the Ministry wrote in Report to the Storting No. 17 (2011-2012), the geographical distribution of the fund's investments is to support this objective by contributing to the best possible trade-off between expected return and risk. The Ministry also wrote that the geographical distribution of the benchmark index for equities should help diversify risk in the fund in both the short and the long term, and that the fund's long-term investment horizon indicates that the emphasis should be on long-term considerations.

The benchmark index for equities is based on, but differs somewhat from, a global float-adjusted market-weighted index from the index provider FTSE Russell.[1] The biggest differences are due to the decision to assign equities adjustment factors according to their country of origin. Equities in European developed markets have been assigned a factor of 2.5, North American equities a factor of 1, and equities in other developed markets and in emerging markets a factor of 1.5. As a result, the fund has a much larger ownership share in companies in European developed markets than in North America. Since the sector distribution varies between countries and regions, these adjustment factors impact on the index's sector composition. For example, the fund is invested more

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[1] See Tables 1 and 2 and Figure 1 in the enclosure, where the choices made in the design of the benchmark index result in a distribution between regions, countries and sectors that departs from both full and float-adjusted market weights.

POSTADRESSE
PB 1179 Sentrum,
0107 Oslo

BESØKSADRESSE
Bankplassen 2,
Oslo

Tel. 22 31 60 00
Faks 22 41 31 05
www.norges-bank.no
central.bank@norges-bank.no

Organisasjons-nummer
NO 937 884 117 MVA

in financials and health care, and less in consumer services, technology and utilities, than a float-adjusted market-weighted index.

In its letter of 6 November 2018, the Ministry asks for Norges Bank's assessment of the geographical distribution and composition of the benchmark index for equities for the GPFG. We have decided to respond to the Ministry in two separate letters. In this letter, we discuss developments, weighting principles and other factors with a bearing on the choice of geographical distribution. Drawing on this discussion, we then consider the need for changes to the adjustment factors.[2] The Ministry has also asked the Bank to report on its experience of, and the framework for, equity investments in emerging markets. These topics are covered in a separate letter.

Developments relevant to the geographical distribution of the benchmark index
The Ministry has asked the Bank to assess developments with a bearing on the geographical distribution of the benchmark index.

We have looked at how the return and risk characteristics of equity investments have varied between the different regions in the benchmark index. In keeping with the letter from the Ministry, emerging equity markets have been considered separately. We have also analysed the extent to which differences in equity returns can be explained by country and sector affiliation, and the extent to which this has changed over time.

Regions
The benchmark index for equities has had a high weight of European developed markets ever since the fund began investing in equities in 1998. Historically, this was justified by the fund's overall currency risk. Norway imports most from Europe, making it natural to assume that the fund's purchasing power can be better protected against currency risk by investing more in European markets. In Report to the Storting No. 15 (2010-2011), the Ministry concluded that the fund's currency risk appeared to be smaller than previously assumed, and there was no longer a basis for such a strong concentration of investments in Europe.

It was therefore decided in 2012 to reduce the weight of European equities in the benchmark index.[3] At that time, the allocation to equities was set at 50 percent Europe, 35 percent North America and 15 percent Asia/Oceania. These fixed regional weights were then replaced with today's adjustment factors. The changes decided on in 2012 meant that the regional distribution of the benchmark index for equities would no longer be fixed but vary with market developments.

There have been relatively large differences in regional returns since then, and so the current regional distribution is different to that in 2012. Stronger returns in North America

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[2] The discussion is based on the fund in isolation rather than Norway's overall national wealth.
[3] The weight of European bonds in the benchmark index for bonds was reduced at the same time and for the same reasons.

than in European developed markets have meant that the weight of the former has risen from 35 to 41 percent, while the weight of the latter has fallen from 38 to 34 percent. The changes for other developed markets and emerging markets have been only minor.

In the enclosure, we show how return and risk characteristics have varied across the four regions and different time periods over the past 25 years.[4] In most of these periods, returns have been higher in developed equity markets than in emerging equity markets. This is due primarily to the performance of North American equities.

Over the past 25 years, North American equities have produced an annualised return of 9.9 percent, against 8.3 percent for European developed markets, 5.0 percent for other developed markets and 6.7 percent for emerging markets. Over the same period, volatility as measured by annualised standard deviation has been 14.8 percent in North America, 17.3 percent in European developed markets, 17.1 percent in other developed markets and 23.3 percent in emerging equity markets.

We have previously shown that a global investor with a 70 percent allocation to equities can achieve a substantial reduction in risk in the long term by diversifying these investments across numerous countries.[5] This applies even though short-term returns in different countries seem to be moving more closely together than in the past. In connection with this letter, we have performed calculations to identify any differences in the correlations between the four regions in the benchmark index. [6] We find that the correlations have varied over time but have been relatively similar in the period since the financial crisis. However, the returns in the different regions have not been perfectly correlated. Broad diversification of equity investments across these regions can therefore help reduce the expected volatility of equity returns.[7]

Emerging markets
Historically, returns on equities in emerging markets have fluctuated more than, but not entirely in line with, those in developed markets. Return volatility for the fund as a whole has not therefore increased as a result of the decision to invest part of it in emerging equity markets.[8]

Dimson, Marsh and Staunton (2019) discuss the diversification benefits of equity investments in emerging markets using data for the period from 1980 to 2018.[9] They find that equity investments in emerging markets offer diversification opportunities for a global equity investor, even though the reward in terms of risk reduction is somewhat smaller

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[4] See Table 3 in the enclosure. The estimates in the table are based on return data measured in US dollars.
[5] See the Bank's letter of 1 September 2017 and Discussion Note 1/2017, available at www.nbim.no.
[6] See Figure 2 in the enclosure.
[7] Further information on the Bank's long-term estimates of the return and risk characteristics of equity investments can be found in the Bank's letter of 1 December 2016.
[8] See Table 3 and Figures 2 and 3 in the enclosure.
[9] See Dimson E., Marsh P. and Staunton M. (2019) "Credit Suisse Global Investment Returns Yearbook 2019". A summary of the report is publicly available at https://www.credit-suisse.com/about-us/en/reports-research/studies-publications.html.

than in the past. This is partly a result of emerging equity markets having grown rapidly over the past 20 years in terms of number, trading volumes and maturity. Liquidity has gradually improved, and more and more emerging markets have been included in leading global stock indices. The reward of global diversification can thus be reaped at a lower cost than before.

Emerging equity markets have historically been associated with higher market risk than developed equity markets. Higher market risk can provide a basis for higher expected returns. Along with the diversification benefits of investing in emerging markets, this can help improve the trade-off between return and risk in the fund. However, the realised return over the past 25 years has been lower than could reasonably have been expected given the higher market risk in emerging equity markets.[10]

Since 2011, the fund has also invested in government bonds from emerging markets. We have looked at the correlation between returns on bonds and equities in emerging markets and found that bond prices have a tendency to rise when equity prices in these markets rise, and fall when equity prices fall. The sign for the correlation between equities and bonds is the opposite to what we have found in developed markets.[11] Bond investments in emerging markets thus increase the implied equity exposure of a portfolio of both equities and bonds. The Ministry decided in Report to the Storting No. 20 (2018-2019) to remove bonds from emerging markets from the benchmark index for bonds. Following this decision, the index's implied exposure to emerging equity markets would be somewhat reduced.[12]

Diversification benefits and higher expected returns are among the reasons why two of the funds with which the GPFG is often compared aim to have substantial investments in emerging markets. The Canada Pension Plan Investment Board (CPPIB) has set a target of having one-third of the fund invested in emerging markets by 2025.[13] Singapore's sovereign wealth fund, GIC, aims to have 15-20 percent of its capital invested in emerging equity markets. By way of comparison, only just over 10 percent of the GPFG was invested in emerging markets at the end of 2018.

Countries and sectors
Since the sector composition varies between countries, the decision to depart from market weights along the country dimension also impacts on the sector distribution. In the enclosure, we show that there have been substantial differences in the return and risk characteristics of different sectors over time.[14] Equity returns in specific sectors may rise or fall substantially further than the broad equity market at times.

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[10] See Table 3 in the enclosure.
[11] See, for example, the Bank's letter of 1 December 2016 and Discussion Note 2/2016, available at www.nbim.no.
[12] The Ministry envisages that the Bank is still able to invest up to 5 percent of the bond portfolio in emerging markets.
[13] See the Canada Pension Plan Investment Board's annual report for 2019.
[14] See Table 4 in the enclosure.

In connection with this letter, we have looked at the importance of country and sector affiliation in explaining equity returns. We find that both country and sector are important, but that the relative importance has varied over time and between regions.[15] In emerging markets, country has been more important than sector throughout the period.[16] In developed markets, the picture is not as clear-cut: country have historically been more important, but we find two periods where developments in individual sectors have been more important than country effects. These two periods coincide with episodes with major price movements: the dot.com crisis of the early 2000s and the financial crisis towards the end of the same decade. These episodes were both global events that originated largely in a specific sector. In more recent years, the relative importance of country and sector in developed markets has been more balanced.

Regional distribution with different weighting principles
The Ministry has asked the Bank to look at the regional distribution with different weighting principles. We have assessed the consequences of different weighting principles for the regional and sector distribution of the benchmark index, and how the return and risk characteristics vary between these different principles.

Full and float-adjusted market weights
An index based on full market weights reflects the capital that is available in the listed equity market. This capital is broadly distributed through equal percentage ownership of all the companies included in the index. However, not all shares included in the index will be readily available for purchase. The most widely used global stock indices allow for this by removing these shares from the index when a company's market weight is calculated. This is known as free-float adjustment.

A float-adjusted index is easier for typical users of the index to track. A float-adjusted market-weighted index can be implemented at low cost and is a good starting point for transparent and cost-effective equity management. There will, however, be some costs for tracking such an index. Those tracking the index will need to trade whenever the composition of the index changes. For example, this will happen when markets and companies move in and out of the index, and when the index provider amends its estimate of the percentage of a company's stock that is readily available.

A float-adjusted index will have a different company, sector, country and regional composition to one based on full market weights. Countries with a limited free float will have a lower weight in the index.[17] This applies to most emerging markets as well as to some developed markets in Europe and Asia. Countries with a high free float, such as the US, the UK, Australia, Canada and Switzerland, will have a higher weight in a float-

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[15] See NBIM Discussion Note 1/2019, available at www.nbim.no.
[16] See also Melas D. (2019) "The Future of Emerging Markets", a report from MSCI, for a discussion of the importance of country-specific factors in emerging equity markets.
[17] See Table 5 in the enclosure.

adjusted index. Sectors with high levels of government ownership and so limited free float, such as telecommunications and utilities, will have a lower weight in such an index. Sectors with a high free float, such as health care and technology, will have a higher weight. A float-adjusted index will also typically have lower weights of value stocks, small companies and infrequently traded stocks.[18]

In the enclosure, we show how free-float adjustment impacts on return and risk characteristics.[19] In the short and medium term, there has been a relatively big difference between the returns on a float-adjusted index and an index based on full market weights.[20] The differences in return and risk characteristics in the short and medium term can largely be explained by North America and emerging markets having different weights in a float-adjusted index and a non-float-adjusted index. Within the four regions, differences in free float between countries seem to have had less of an effect on overall return and risk characteristics.

Alternatives to market weights
The Ministry has also asked the Bank to assess the regional distribution with fundamental weights such as GDP and listed companies' capital and earnings, and weights based on the distribution of risk between the regions. We present the results in the enclosure.[21] None of the indices constructed on the basis of these alternative weighting principles produces a regional distribution similar to that of the current benchmark index.

These alternative indices can be complex to calculate. They will be adjusted more frequently and will therefore be more expensive to track in the management of the equity portfolio than a market-weighted index. Unlike a market-weighted index, an index constructed on the basis of these alternative principles will not necessarily be based on transparent, verifiable criteria. These alternative indices will also be less investable for the fund and so less suitable as a long-term yardstick for the choices made in its management.

Other factors
The discussion so far in this letter has been based on the situation of a typical global investor. There may be other factors, such as the fund's characteristics, which should be taken into account when choosing a geographical distribution.

The fund's investment horizon
Investors have different time horizons for their investments and different risk-bearing capacities. In Report to the Storting No. 20 (2018-2019), the Ministry writes that the

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[18] Further information can be found in NBIM Discussion Note 5/2014, available at www.nbim.no.
[19] See Table 6 and Figure 4 in the enclosure.
[20] Measured over the entire period in which the broad global stock indices have been adjusted for free float, the difference in returns has been limited. Float-adjusted indices did not become common until the early 2000s.
[21] See Tables 7-10 in the enclosure.

GPFG's long investment horizon makes it well placed to take on risks that require a long time horizon. A long-term investor does not necessarily need to worry about drops in value driven by factors considered to be temporary.

The relevant risk for long-term investors is the risk of permanent losses. These might arise as a result of changes in expected earnings. Should something happen that affects expected earnings for all companies in a market or sector with a high weight in the index, the permanent loss could be substantial. Prolonged economic crises, major natural disasters and wars are examples of events that can have such an effect, cf. the Ministry's discussion in Report to the Storting No. 17 (2011-2012). Permanent losses can also be triggered by events that affect individual investors in a market or sector, such as the expropriation of assets or introduction of special levies.

It is hard to quantify the probability of such events occurring or the extent to which this risk is reflected in market prices. If account is to be taken of such considerations, one possible approach would be to put a ceiling on the weight a specific country and/or sector may have in the index. Where such a limit should be set is uncertain and could vary with the countries and sectors that have a high weight in the index.[22] This may change over time. As with other deviations from market weights, this type of deviations would need to be evaluated against its purpose at regular intervals.

The fund's limited liquidity needs
The probability of large unexpected withdrawals from the fund is small. This means that, in principle, the fund is well placed to accept the risk, and harvest the potential reward, of investing in less liquid assets.

Free-float adjustment is performed to ensure that an index can be tracked closely by investors with ongoing liquidity needs. The fund is not such an investor. Free-float adjustment means that the index does not reflect all listed capital, only the capital that the index provider believes is available to a typical investor at the time. This is reflected in the market value of the float-adjusted index being around 20 percent below that of an index based on full market weights.[23]

Another issue is whether an index based on full market weights best reflects global capital, since a large share of economic activity takes place outside the listed market. There are no precise figures for the percentage of capital listed in different countries, but the ratio between the market value of the shares listed on an exchange in a country and

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[22] Table 11 and Figures 5 and 6 in the enclosure show the effects on return and risk characteristics. The benchmark index for equities is broadly diversified across countries and sectors, and only the largest countries and sectors would be affected by such a ceiling. In the period we have analysed, this applies primarily to two countries (Japan and the US) and two sectors (technology and financials). Little importance should therefore be attached to the empirical results.
[23] Measured as the difference in market capitalisation between the FTSE Global All Cap (which is float-adjusted) and a version of the same index that is not float-adjusted.

economic output in that country (GDP) can provide an indication.[24] In general, it appears that unlisted entities account for a larger share of output in emerging markets, while listed companies play a greater role in developed markets.

Emerging and frontier markets accounted for 55 percent of global GDP in 2018.[25] Dimson, Marsh and Staunton (2019) discuss possible reasons for the discrepancy between emerging markets' share of global output and their share of the global equity market. They conclude that this discrepancy can be explained in part by free-float adjustment and by index suppliers' liquidity requirements for individual stocks. Without restrictions imposed by index providers, the authors estimate that the weighting of emerging markets in a global equity index would be more than 20 percent. By way of comparison, these markets accounted for 10 percent of the fund's benchmark index for equities at the end of 2018.

Equity investments in emerging markets are less liquid than equity investments in developed markets. The fund may be well placed to invest in less liquid emerging equity markets and so achieve a more diversified total portfolio. In Report to the Storting No. 17 (2011-2012), the Ministry writes that the fund's special characteristics – such as its long investment horizon and limited need to realise assets quickly – might be considered to give the fund an advantage in emerging markets.

The fund's position in individual markets

The benchmark index consists of almost 8,000 companies. The fund's average ownership share in these companies is around 1.5 percent.[26] As a minority shareholder in these companies, we are dependent on good corporate governance, limited discrimination and the protection of the fund's rights in law and legal systems. In the Bank's letter of 2 February 2012, differences in governance practices were singled out as a possible argument for a higher weight in Europe than in other regions.

Based on indicators from the World Bank and MSCI, it appears that minority shareholders' rights are somewhat better protected in Europe than in other developed regions, although there are major variations between European countries.[27] To the extent that differences in governance practices from country to country impact on the return and risk characteristics of equities, it is reasonable to assume that general differences in these practices will be reflected in market prices.

The return on equity investments after costs will be affected by the fund's tax position in individual markets. Tax costs for equity investments consist mainly of taxes on dividends. In some countries where the fund is invested, however, taxes have also been introduced on capital gains. Capital gains taxes are often less standardised than dividend taxes and

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[24] See Figures 7 and 8 in the enclosure.
[25] See Dimson E., Marsh P. and Staunton M. (2019) "Credit Suisse Global Investment Returns Yearbook 2019".
[26] Measured as the percentage of float-adjusted capital.
[27] See Figures 9 and 10 in the enclosure.

may vary with the type of investor and with the size and duration of the investment. In most countries where the fund is invested, other than a few emerging and frontier markets, Norges Bank is exempted from taxes on capital gains in tax agreements between Norway and the countries in question.[28]

The fund's position in individual markets in areas such as tax and governance could, in principle, be taken into account in the choice of geographical distribution in the benchmark index if the fund's position in selected markets is permanently significantly different to that of the marginal investor. This is not easy to ascertain. The tax rules in each market can vary with the type of investor and with the value and duration of an investment. In addition, both tax rules and governance practices evolve over time.

The Bank's advice
The investment strategy for the GPFG means that the fund's return and risk characteristics largely mirror those of the benchmark index. The benchmark index therefore plays an important role in its management. To serve as a long-term yardstick for the choices made, the equity index needs to be constructed on the basis of transparent, verifiable criteria and be investable for the fund.

A float-adjusted market-weighted index such as the FTSE Global All Cap meets these criteria and is investable for the GPFG. As the Ministry writes in Report to the Storting No. 17 (2011-2012), such an index is a natural starting point for the geographical distribution of the fund. Any departures from a float-adjusted market-weighted index should be justified and have a concrete purpose.

The geographical distribution of the fund's benchmark index has been adjusted over time towards float-adjusted market weights, but still has a much higher weight of equities in European developed markets and a correspondingly lower weight of North American equities.[29] The weights of equities in other developed markets and equities in emerging markets are approximately the same as float-adjusted market weights. The fund may have characteristics that support a geographical distribution that departs to some extent from float-adjusted market weights. We are of the opinion, however, that the geographical distribution should be adjusted further towards float-adjusted market weights by increasing the weight of equities in North America and reducing the weight of equities in European developed markets. The gap to market weights will then be smaller than today. We assume that the Bank will be given an opportunity to return on the issue of how this adjustment to a new geographical distribution should be implemented.

The Executive Board approved the Bank's reply at its meeting of 14 August 2019, but one of its members, Kjetil Storesletten, had the following special remark:

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[28] One example of an emerging market where the fund currently pays tax on capital gains is India, which in April 2018 began applying this tax to shares held for more than a year. Previously the tax was applied only to shares held for less than a year. The rate of tax is lower for shares held for more than a year than for shares held for less than a year.
[29] See Tables 12-16 in the enclosure for a comparison of the current benchmark index and alternative indices.

"The starting point for the Executive Board's advice is the fund in isolation. I agree with the Board's assessment that this perspective indicates that the portfolio weights should be adjusted towards market weights. The Bank's analyses show that, if the fund is considered in isolation, indices based on FTSE full market weights and FTSE float-adjusted market weights would have given a better trade-off between return and risk than the regional adjustment weights the fund uses today.

"The conclusion changes, however, when viewed from a broader perspective of wealth. The very reason why Norway set up the oil fund was a broad view of national wealth, and it was this perspective that was behind the Mork Committee's advice on the equity share. This perspective indicates that higher weights should be assigned to countries and markets with a lower correlation with Norwegian government revenue and Norwegian economic output, and lower weights to countries and markets that move more closely in line with Norwegian income."

Yours faithfully

Jon Nicolaisen   Yngve Slyngstad

Enc

Enclosure

Table 1: Choices made in the composition of the equity benchmark, as at 31.12.2018

Regional distribution	FTSE full market weights	FTSE float-adjusted market weights	FTSE float-adjusted with ethical exclusions	Equity benchmark
European developed markets	19.4 %	18.9 %	19.0 %	33.7 %
North America	48.6 %	57.0 %	56.5 %	40.2 %
Emerging markets	16.7 %	10.1 %	10.2 %	10.9 %
Other developed markets	15.3 %	14.0 %	14.2 %	15.2 %
Industry distribution	**FTSE full market weights**	**FTSE float-adjusted market weights**	**FTSE float-adjusted with ethical exclusions**	**Equity benchmark**
Basic Materials	4.8 %	4.6 %	4.3 %	4.8 %
Cons. Goods	11.7 %	11.0 %	10.5 %	12.0 %
Cons. Services	12.1 %	11.5 %	11.6 %	10.6 %
Finance	22.1 %	21.9 %	22.7 %	23.0 %
Health	10.0 %	11.3 %	11.7 %	11.6 %
Industry	13.1 %	13.5 %	12.6 %	13.0 %
Energy	5.8 %	5.8 %	6.0 %	6.3 %
Technology	13.0 %	14.4 %	15.0 %	12.7 %
Telecom	3.7 %	2.8 %	2.9 %	3.1 %
Utilities	3.6 %	3.3 %	2.7 %	2.9 %
Return and risk characteristics*	**FTSE full market weights**	**FTSE float-adjusted market weights**	**FTSE float-adjusted with ethical exclusions**	**Equity benchmark**
Annualised return	9.71 %	10.36 %	10.37 %	9.72 %
Annualised standard deviation	9.15 %	9.24 %	9.32 %	9.47 %
Beta versus FTSE full market weights	1.000	1.005	1.013	1.025

* Measured in the fund's currency basket since 1 July 2012

Source: FTSE Russell and Norges Bank Investment Management.

Table 2: Country distribution, as at 31.12.2018

Country	Equity benchmark	FTSE full market weights	FTSE float-adjusted market weights	FTSE float-adjusted with ethical exclusions
US	38.07%	45.89%	53.99%	53.58%
UK	9.25%	4.66%	5.40%	5.21%
Japan	8.94%	8.52%	8.17%	8.38%
France	5.20%	3.56%	3.02%	2.92%
Germany	4.86%	2.87%	2.64%	2.74%
Switzerland	4.66%	2.33%	2.53%	2.62%
China	3.43%	5.35%	3.15%	3.22%
Australia	2.41%	1.95%	2.23%	2.26%
Canada	2.11%	2.70%	2.99%	2.97%
Netherlands	1.90%	1.02%	1.03%	1.07%
South Korea	1.73%	2.03%	1.64%	1.62%
Spain	1.72%	1.10%	0.94%	0.97%
Sweden	1.65%	0.93%	0.91%	0.93%
Taiwan	1.64%	1.56%	1.48%	1.53%
Italy	1.44%	0.95%	0.78%	0.81%
India	1.33%	2.80%	1.27%	1.25%
Hong Kong	1.30%	1.93%	1.22%	1.22%
Brazil	0.99%	1.34%	0.90%	0.93%
Denmark	0.98%	0.55%	0.53%	0.55%
South Africa	0.80%	0.75%	0.73%	0.75%
Finland	0.77%	0.41%	0.42%	0.44%
Belgium	0.60%	0.47%	0.33%	0.34%
Singapore	0.49%	0.58%	0.44%	0.46%
Thailand	0.45%	0.71%	0.41%	0.42%
Russia	0.41%	0.79%	0.39%	0.39%
Malaysia	0.33%	0.57%	0.34%	0.31%
Mexico	0.33%	0.51%	0.33%	0.31%
Indonesia	0.28%	0.58%	0.26%	0.26%
Poland	0.25%	0.21%	0.14%	0.14%
Austria	0.19%	0.17%	0.10%	0.11%
Israel	0.18%	0.20%	0.17%	0.17%
Ireland	0.16%	0.10%	0.09%	0.09%
Philippines	0.15%	0.29%	0.14%	0.14%
Chile	0.14%	0.27%	0.13%	0.13%
Qatar	0.14%	0.24%	0.12%	0.13%
New Zealand	0.13%	0.12%	0.12%	0.12%
Portugal	0.11%	0.10%	0.06%	0.06%
United Arab Emirates	0.10%	0.28%	0.09%	0.09%
Turkey	0.09%	0.19%	0.09%	0.09%
Kuwait	0.06%	0.09%	0.06%	0.06%
Colombia	0.05%	0.10%	0.04%	0.04%
Peru	0.04%	0.04%	0.04%	0.04%
Hungary	0.04%	0.04%	0.04%	0.04%
Greece	0.04%	0.05%	0.04%	0.04%
Egypt	0.03%	0.04%	0.02%	0.02%
Pakistan	0.02%	0.03%	0.02%	0.02%
Czech Republic	0.01%	0.05%	0.02%	0.01%

Source: FTSE Russell and Norges Bank Investment Management.

Figure 1: Average ownership share in companies across countries in the equity benchmark, in percent of full market capitalisation as at 31.12.2018
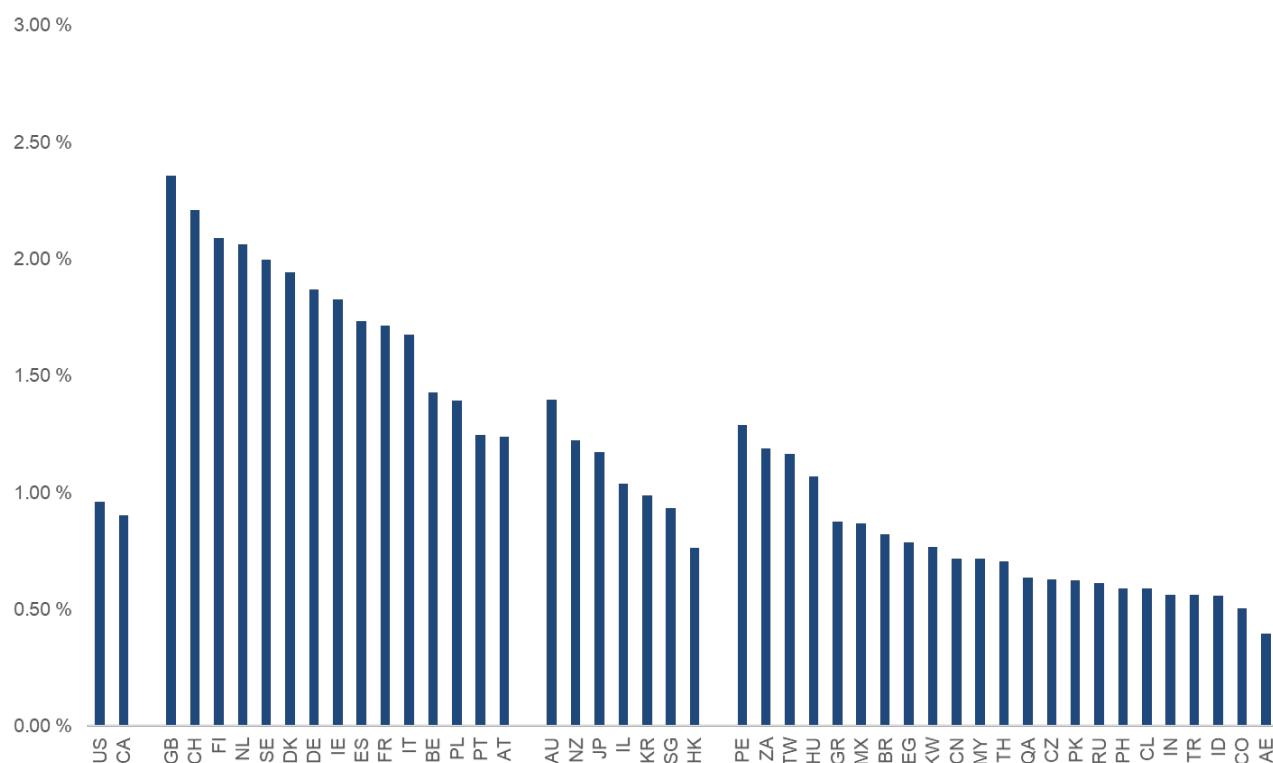
The combination of free-float adjustment and adjustment factors results in high ownership shares in companies in developed countries in Europe. This is particularly the case for the UK and Switzerland. These two countries made up 14 percent of the equity benchmark at the end of 2018, compared to around 8 percent of the float-adjusted index from FTSE and around 7 percent of the full capitalisation index from FTSE.

US: US, CA: Canada, GB: UK, CH: Switzerland, FI: Finland, NL: Netherlands, SE: Sweden, DK: Denmark, DE: Germany, IE: Ireland, ES: Spain, FR: France, IT: Italy, BE: Belgium, PL: Poland, PT: Portugal, AT: Austria, AU: Australia, NZ: New Zealand, JP: Japan, IL: Israel, KR: South Korea, SG: Singapore, HK: Hong Kong, PE: Peru, ZA: South Africa, TW: Taiwan, HU: Hungary, GR: Greece, MX: Mexico, BR: Brazil, EG: Egypt, KW: Kuwait, CN: China, MY: Malaysia, TH: Thailand, QA: Qatar, CZ: Czech Republic, PK: Pakistan, RU: Russia, PH: Philippines, CL: Chile, IN: India, TR: Turkey, ID: Indonesia, CO: Colombia, AE: United Arab Emirates

Source: FTSE Russell and Norges Bank Investment Management.

Table 3: Return and risk characteristics across regions

	Developed markets	Emerging markets	European developed markets	North America	Other developed markets
Past 25 years					
Annualised return, %	8.25	6.73	8.29	9.92	5.04
Annualised standard deviation, %	14.72	23.28	17.32	14.77	17.14
Beta	1.00	1.28	1.12	0.94	0.98
Sharpe ratio	0.40	0.19	0.34	0.51	0.16
Max drawdown, %	-53.89	-63.95	-59.11	-51.36	-51.27
1994-2003					
Annualised return, %	8.94	0.57	10.11	12.08	2.34
Annualised standard deviation, %	14.87	25.92	16.32	15.89	19.39
Beta	1.00	1.41	1.03	0.93	1.08
Sharpe ratio	0.33	-0.14	0.37	0.50	-0.09
Max drawdown, %	-44.20	-63.95	-43.92	-44.95	-49.35
2004-2008					
Annualised return, %	1.46	11.62	3.90	-0.23	4.00
Annualised standard deviation, %	14.77	25.14	17.57	13.81	16.98
Beta	1.00	1.51	1.16	0.94	0.92
Sharpe ratio	-0.10	0.34	0.05	-0.24	0.06
Max drawdown, %	-45.85	-59.51	-51.79	-42.04	-45.94
2009-2018					
Annualised return, %	10.95	10.44	8.66	12.85	8.26
Annualised standard deviation, %	14.58	19.27	18.26	13.99	14.76
Beta	1.00	1.12	1.18	0.94	0.93
Sharpe ratio	0.73	0.53	0.46	0.89	0.54
Max drawdown, %	-20.27	-27.49	-26.99	-17.98	-17.19
Since 2012					
Annualised return, %	9.68	5.09	7.28	11.42	7.14
Annualised standard deviation, %	11.03	15.29	13.83	10.81	12.50
Beta	0.99	1.04	1.15	0.93	0.98
Sharpe ratio	0.84	0.31	0.50	1.02	0.54
Max drawdown, %	-13.75	-27.49	-19.29	-14.23	-17.19

Return measured in US dollars. Annualised return measured as arithmetic mean. Market beta measured against Fama-French Global Market Factor. Excess return measured relative to Fama-French risk-free rate. Maximum drawdown shows the biggest percentage decline in the different regions. Data from 31/12/1993 to 30/12/2018. Norway is excluded from the universe. Source: FTSE Russell and Norges Bank Investment Management.

Figure 2: Five-year rolling correlation between the regions in the fund's equity benchmark and the global equity market
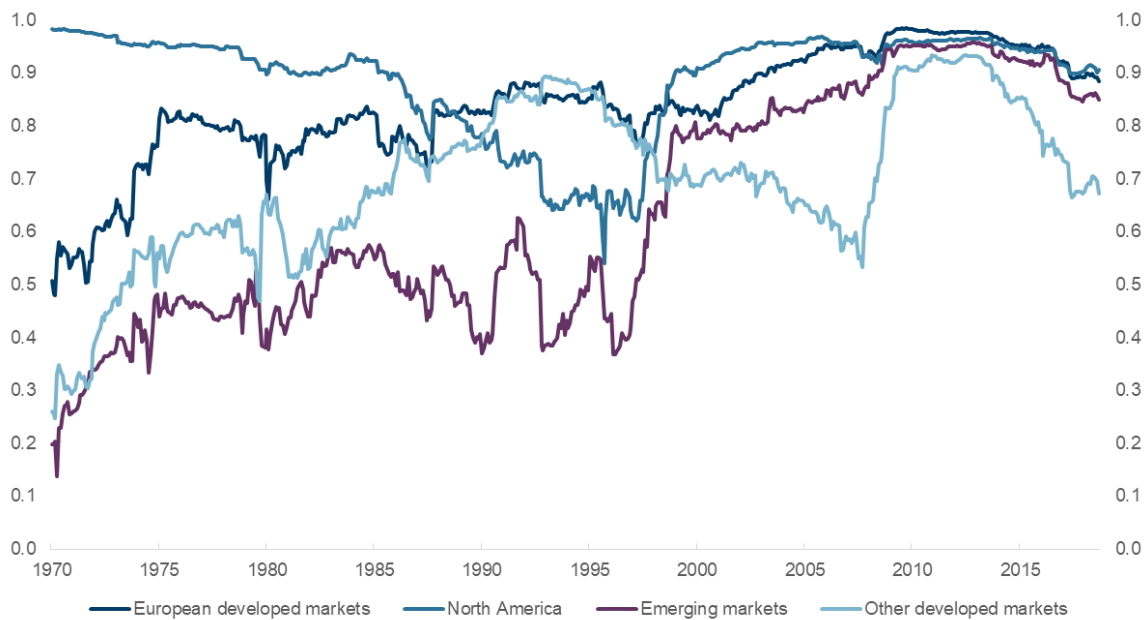
Five-year rolling correlation. Market weights within each region. Monthly return data measured in US dollars. Norway is excluded from the universe. Country classification according to MSCI.
Source: Global Financial Data, MSCI and Norges Bank Investment Management.

Figure 3: Three-year smoothed standard deviation for a portfolio with 70% equities and 30% bonds

Three-year smoothed standard deviation for a portfolio with and without emerging equity markets. The portfolios have 70% in equities and 30% in bonds. Rebalanced monthly. Return in US dollars.
Source: FTSE Russell, Bloomberg Barclays and Norges Bank Investment Management.

Table 4: Return and risk characteristics across sectors

Global	Basic Materials	Cons. Goods	Cons. Services	Energy	Finance	Health	Industry	Technology	Telecom	Utilities
Last 25 years										
Annualised return	8.93	8.72	8.05	9.49	7.48	11.75	8.30	12.33	7.21	7.12
Annualised standard deviation, %	20.86	12.73	14.31	19.29	18.66	13.14	17.11	24.05	16.87	12.50
Sharpe ratio	0.31	0.50	0.40	0.37	0.27	0.72	0.35	0.41	0.29	0.38
Share, %	6.02	11.99	10.64	7.54	22.30	9.07	12.69	10.83	4.93	3.98
1994-2003										
Annualised return	8.78	8.75	6.92	12.28	9.83	15.04	6.88	15.98	8.17	5.53
Annualised standard deviation, %	18.21	12.61	14.92	17.06	18.24	14.23	16.39	31.45	21.04	12.30
Sharpe ratio	0.26	0.37	0.19	0.48	0.31	0.77	0.17	0.38	0.19	0.12
Share, %	5.66	12.45	11.16	6.27	21.84	8.78	12.01	11.36	6.32	4.14
2004-2008										
Annualised return	8.95	3.57	-0.41	13.07	-3.06	2.55	3.34	-3.28	6.74	12.19
Annualised standard deviation, %	25.50	12.96	14.11	22.73	18.27	11.19	18.24	19.36	14.80	13.62
Sharpe ratio	0.23	0.04	-0.24	0.44	-0.33	-0.04	0.02	-0.33	0.25	0.68
Share, %	6.23	10.36	10.17	8.53	24.40	8.82	12.76	9.66	4.74	4.34
2009-2018										
Annualised return	9.07	11.27	13.40	4.90	10.41	13.06	12.20	16.49	6.48	6.18
Annualised standard deviation, %	20.97	12.78	13.70	19.61	19.27	12.82	17.30	16.31	12.78	12.15
Sharpe ratio	0.42	0.86	0.95	0.23	0.52	0.99	0.69	0.99	0.48	0.48
Share, %	6.28	12.34	10.36	8.33	21.70	9.49	13.34	10.90	3.64	3.63
Since 2012										
Annualised return	3.17	8.36	11.60	0.57	10.17	13.50	10.05	14.52	5.06	6.79
Annualised standard deviation, %	16.39	10.23	11.11	17.33	13.17	11.74	12.50	13.77	11.31	10.62
Sharpe ratio	0.17	0.77	1.00	0.01	0.74	1.11	0.77	1.02	0.41	0.60
Share, %	5.51	12.63	10.81	7.52	22.05	10.04	13.48	11.32	3.28	3.35

Developed markets	Basic Materials	Cons. Goods	Cons. Services	Energy	Finance	Health	Industry	Technology	Telecom	Utilities
Last 25 years										
Annualised return	8.63	8.68	8.21	9.37	7.33	11.75	8.39	12.38	7.41	7.42
Annualised standard deviation, %	20.50	12.58	14.20	19.15	18.69	13.16	16.89	24.15	17.05	12.42
Sharpe ratio	0.31	0.50	0.41	0.37	0.27	0.71	0.36	0.41	0.30	0.41
Share, %	5.58	12.18	10.90	7.45	22.07	9.58	12.74	10.86	4.63	4.00
1994-2003										
Annualised return	8.73	8.99	7.26	12.26	10.11	15.00	7.22	16.11	8.59	5.94
Annualised standard deviation, %	18.22	12.61	14.88	16.92	18.30	14.24	16.28	31.60	21.26	12.25
Sharpe ratio	0.25	0.39	0.21	0.48	0.33	0.77	0.19	0.38	0.21	0.15
Share, %	5.36	12.52	11.26	6.32	21.86	8.98	11.87	11.49	6.17	4.17
2004-2008										
Annualised return	7.45	3.31	-0.76	12.64	-4.13	2.44	2.66	-3.16	5.41	12.02
Annualised standard deviation, %	24.35	12.58	13.86	22.11	17.91	11.17	17.41	19.40	14.56	13.26
Sharpe ratio	0.18	0.03	-0.27	0.44	-0.40	-0.05	-0.02	-0.32	0.17	0.69
Share, %	5.53	10.54	10.53	8.56	24.60	9.34	12.77	9.36	4.36	4.42
2009-2018										
Annualised return	9.11	11.05	13.64	4.84	10.29	13.16	12.42	16.42	7.23	6.60
Annualised standard deviation, %	20.73	12.59	13.56	19.75	19.41	12.88	17.28	16.37	13.15	12.22
Sharpe ratio	0.42	0.85	0.98	0.23	0.51	1.00	0.70	0.98	0.53	0.51
Share, %	5.83	12.67	10.73	8.03	21.02	10.30	13.60	10.97	3.22	3.61
Since 2012										
Annualised return	3.71	8.68	12.26	0.38	10.63	13.68	10.48	14.63	6.46	7.70
Annualised standard deviation, %	16.21	10.23	11.12	17.55	13.20	11.85	12.58	14.03	11.70	10.71
Sharpe ratio	0.20	0.80	1.06	0.00	0.77	1.12	0.80	1.01	0.52	0.68
Share, %	5.23	12.92	11.11	7.29	21.34	10.82	13.75	11.33	2.92	3.31

Emerging markets	Basic Materials	Cons. Goods	Cons. Services	Energy	Finance	Health	Industry	Technology	Telecom	Utilities
Last 25 years										
Annualised return	11.68	7.43	4.91	15.36	7.95	8.46	6.37	4.35	6.24	2.88
Annualised standard deviation, %	27.29	21.17	25.05	34.43	25.01	40.51	27.32	36.03	23.78	31.08
Sharpe ratio	0.34	0.24	0.10	0.38	0.22	0.16	0.15	0.06	0.16	0.02
Share, %	13.83	9.53	6.85	7.77	24.08	1.92	13.61	9.30	10.11	3.55
1994-2003										
Annualised return	12.43	-0.34	-5.65	20.01	1.28	2.63	-1.27	-6.69	3.07	-5.71
Annualised standard deviation, %	28.31	23.75	29.37	43.08	26.91	66.02	31.57	51.74	31.18	42.81
Sharpe ratio	0.29	-0.19	-0.33	0.37	-0.10	-0.02	-0.17	-0.21	-0.03	-0.23
Share, %	17.20	10.25	7.16	4.47	21.57	1.18	16.69	5.72	13.30	3.28
2004-2008										
Annualised return	16.57	9.37	9.59	21.18	12.73	9.49	14.97	-1.41	16.84	16.26
Annualised standard deviation, %	31.95	22.02	23.05	33.56	26.69	19.96	30.12	24.62	20.62	22.73
Sharpe ratio	0.43	0.29	0.29	0.54	0.37	0.33	0.40	-0.18	0.67	0.59
Share, %	14.59	8.38	5.73	8.20	21.50	2.38	12.59	13.64	9.44	3.55
2009-2018										
Annualised return	8.49	14.23	13.14	7.79	12.23	12.26	9.70	17.25	4.12	4.78
Annualised standard deviation, %	23.71	17.66	20.85	23.59	22.11	16.51	20.49	19.66	15.22	18.00
Sharpe ratio	0.34	0.79	0.61	0.32	0.54	0.72	0.46	0.86	0.25	0.25
Share, %	10.07	9.39	7.09	10.84	27.88	2.23	11.04	10.39	7.25	3.81
Since 2012										
Annualised return	0.51	4.54	5.12	2.94	7.83	7.25	5.29	14.45	-0.16	-0.06
Annualised standard deviation, %	19.69	13.14	17.26	21.33	17.67	13.35	15.04	15.68	13.57	16.31
Sharpe ratio	0.01	0.31	0.27	0.12	0.42	0.51	0.32	0.89	-0.04	-0.03
Share, %	8.16	9.88	8.02	9.65	28.88	2.63	10.91	11.40	6.75	3.71

Return in US dollars. Annualised return measured as arithmetical mean. Excess return relative to Fama-French risk-free rate. Share measured as the average over the period. Data from 31/12/1993 to 30/12/2018. Norway is excluded from the universe. Source: FTSE Russell and Norges Bank Investment Management.

Table 5: Free-float adjustment, April 2019

	Free-float adjustment		Free-float adjustment
US	93.6 %	Greece	57.4 %
UK	91.5 %	Mexico	57.3 %
Australia	89.9 %	Belgium	55.9 %
Canada	87.6 %	Poland	54.5 %
Switzerland	85.8 %	Brazil	52.8 %
Peru	83.5 %	Egypt	52.7 %
Finland	80.0 %	Hong Kong	50.2 %
Netherlands	79.8 %	Austria	48.4 %
New Zealand	78.9 %	Portugal	48.0 %
Sweden	77.8 %	China	47.2 %
South Africa	77.3 %	Malaysia	46.4 %
Japan	76.4 %	Thailand	45.6 %
Taiwan	76.0 %	Czech Republic	42.0 %
Denamrk	75.9 %	Qatar	41.9 %
Germany	73.6 %	Russia	40.6 %
Ireland	71.5 %	Pakistan	39.4 %
Hungary	69.4 %	Chile	38.1 %
Spain	67.5 %	India	36.8 %
Israel	67.2 %	Indonesia	36.4 %
France	66.1 %	Turkey	36.2 %
Italy	65.5 %	Philippines	35.8 %
South Korea	64.5 %	Colombia	33.6 %
Kuwait	63.9 %	United Arab Emirates	26.0 %
Singapore	60.2 %		

Source: FTSE Russell and Norges Bank Investment Management.

Table 6: Return and risk characteristics for different indices that are adjusted for differences in free float along different dimensions

	Annualised return, %	Annualised standard deviation, %	Max drawdown, %	Sharpe ratio	Market beta	Value	Size
Regional adjustment factors	9.2	15.6	-55.9	0.52	1.04**	0.03	-0.01
Float-adjusted index	9.3	14.9	-54.6	0.55	1.00**	0.00	0.00
Full cap index	9.4	15.2	-55.1	0.54	1.02**	-0.02	0.06**
Full cap on countries	9.4	15.3	-55.4	0.54	1.02**	-0.01	0.04**
Full cap on regions	9.4	14.9	-54.5	0.55	1.00**	-0,01*	0.01**
Full cap across developed and emerging markets	9.3	15.0	-54.6	0.54	1.00**	-0.01	0.03**

Monthly return in US dollars. (**, *) denote significance at the 1% and 5% levels respectively, based on Newey-West standard errors with six-month lag length. Annualised return measured as arithmetic mean. Excess return relative to Fama-French risk-free rate. Factor exposure measured against Fama-French Global Factors. The starting point for the different indices is free float at a company level, but they adjust for differences in free float at company level (full cap), country level (full cap on countries), regional level (full cap on regions) and for the difference in free float between emerging and developed markets (full cap across developed and emerging markets). Regional adjustment factors shows the historical development for an index with the same adjustment factors as the equity benchmark since 2003. Norway is excluded from the universe.
Source: MSCI and Norges Bank Investment Management. Data from 2003 to 2018.

Figure 4: Cumulated return relative to a global float-adjusted market-weighted index

The figure shows relative return against a float-adjusted index. The starting point for the different indices is free float at a company level, but they adjust for differences in free float at company level (full cap), country level (full cap on countries), regional level (full cap on regions) and for the difference in free float between emerging and developed markets (full cap across developed and emerging markets). Regional adjustment factors shows the historical development for an index with the same adjustment factors as the equity benchmark since 2003. Norway is excluded from the universe.
Source: MSCI and Norges Bank Investment Management. Data from 2003 to 2018.

Table 7: Regional distribution with different weighting principles, as at 31.12.2018

	Equity benchmark	Float-adjusted market cap	Full market cap	GDP weights	Equal weights	Equal risk weights	Book value weights
Developed Europe	33.7 %	19.0 %	19.6 %	23.3 %	25.0 %	24.9 %	22.1 %
US & Canada	40.2 %	56.5 %	48.1 %	29.9 %	25.0 %	27.9 %	33.9 %
Emerging markets	10.9 %	10.2 %	16.7 %	34.6 %	25.0 %	21.5 %	19.1 %
Other developed	15.2 %	14.2 %	15.6 %	12.3 %	25.0 %	25.7 %	24.9 %

Weights as at end-2018. The different weighting principles are applied to the regional distribution in the Fund's equity benchmark. Free float and full market cap are adjusted for companies excluded from the investment universe due to ethical exclusions. Norway is excluded from the universe. Book value is calculated using book to price for every company in the universe. The ratio is weighted at a regional level. The risk weights are calculated using 36-month rolling standard deviation at a regional level and weighted such that high (low) volatility gives a lower (higher) weight in the index. For more information, see NBIM Discussion Note 7/12.
Source: FTSE Russell, Global Financial Data, Bloomberg, World Bank and Norges Bank Investment Management.

Table 8: Return and risk characteristics with different weighting principles

	Annualised return, %	Annualised standard deviation, %	Max drawdown, %	Sharpe ratio	Turnover, % per annum	Alpha	Beta	Value	Size
Regional adjustment factors	7.51	16.03	-56.01	0.34	1.16	-0.5	1.05**	0.1**	-0.1**
Float-adjusted market cap	7.68	15.58	-54.69	0.36	0.00	0.0	1.02**	0.05**	-0.13**
Full market cap	7.63	15.73	-55.07	0.36	0.93	-0.2	1.03**	0.05**	-0.1**
GDP weights	7.68	16.54	-56.60	0.34	5.09	-0.5	1.07**	0.08	-0.02**
Equal weights	7.35	16.86	-55.72	0.32	6.34	-1.0	1.08**	0.06**	0.11*
Equal risk weights	7.63	16.26	-54.76	0.34	7.10	-0.5	1.05**	0.07	0.05**
Book value weights	7.27	15.86	-55.00	0.33	6.18	-0.7	1.04**	0.07	-0.04**

Return measured in US dollars. Data from 1996 to 2018. Annualised return measured as arithmetic mean. Excess return relative to Fama-French risk-free rate. Factor exposure measured against Fama-French Global Factors. (**, *) denote significance at the 1% and 5% levels respectively, based on Newey-West standard errors with six-month lag length. Turnover is measured in percent of total market value. We disregard natural index turnover and measure turnover relative to the float-adjusted index. In NBIM Discussion Note 7/12, we found large return and risk differences across different weighting principles. The reason is that the calculations in NBIM Discussion Note 7/12 were performed at the company level. In the table above, the calculations have been performed on the basis of the four regions in the equity benchmark. Regional adjustment factors shows the historical development for an index with the same adjustment factors as the equity benchmark since 2003. Norway is excluded from the universe
Source: FTSE Russell, Global Financial Data, Bloomberg, World Bank and Norges Bank Investment Management.

Table 9: Maximum ownership share with different weighting principles, as at 31.12.2018

	Equity benchmark	Float-adjusted market cap	Full market cap	GDP weights	Equal weights	Equal risk weights	Book value weights
Developed Europe	2.7 %	1.5 %	1.5 %	1.8 %	2.0 %	2.0 %	1.7 %
US & Canada	1.1 %	1.5 %	1.3 %	0.8 %	0.7 %	0.7 %	0.9 %
Emerging markets	1.6 %	1.5 %	2.5 %	5.1 %	3.7 %	3.2 %	2.8 %
Other developed	1.6 %	1.5 %	1.6 %	1.3 %	2.6 %	2.7 %	2.6 %

Max ownership share in percent of a float-adjusted index at the end of 2018. Ownership share is calculated as the product of a share's weight within a region, the regional weight and the value of the fund's equity investments relative to the float-adjusted market value. Assumes fund NAV of 1,000 billion US dollars and an equity share of 70%.
Source: FTSE Russell, Global Financial Data, Bloomberg, World Bank and Norges Bank Investment Management.

Table 10: Sector distribution with different weighting principles

	Equity benchmark	Float-adjusted market cap	Full market cap	GDP weights	Equal weights	Equal risk weights	Book value weights
Basic Materials	6.8 %	6.3 %	6.7 %	7.6 %	8.3 %	7.6 %	7.0 %
Cons. Goods	12.7 %	11.9 %	12.0 %	11.9 %	12.8 %	12.6 %	12.6 %
Cons. Services	9.8 %	10.5 %	10.2 %	9.4 %	9.3 %	9.6 %	10.0 %
Finance	23.4 %	22.6 %	22.9 %	23.8 %	23.8 %	23.7 %	23.4 %
Health	9.1 %	9.3 %	8.8 %	7.6 %	7.1 %	7.6 %	8.3 %
Industry	13.1 %	13.0 %	13.1 %	12.9 %	13.7 %	13.6 %	13.4 %
Energy	8.1 %	8.2 %	8.1 %	8.4 %	7.4 %	7.5 %	7.6 %
Technology	8.7 %	10.6 %	10.3 %	9.6 %	8.9 %	9.2 %	9.5 %
Telecom	5.1 %	4.6 %	4.9 %	5.7 %	5.8 %	5.5 %	5.0 %
Utilities	4.1 %	3.9 %	3.9 %	4.0 %	3.9 %	3.9 %	4.0 %

Average sector distribution from 1996 to 2018.
Source: FTSE Russell, Global Financial Data, Bloomberg, World Bank and Norges Bank Investment Management.

Table 11: Return and risk characteristics for different indices with cap on the maximum share that can be invested in a single country and a single sector

Cap on country, X percent	Annualised return, %	Annualised standard deviation, %	Max drawdown, %	Sharpe ratio
5 %	10.8	16.6	-58.4	0.37
10 %	10.7	15.8	-56.7	0.39
20 %	10.7	15.3	-56.2	0.40
30 %	10.8	15.0	-55.6	0.41
40 %	10.7	14.8	-55.0	0.42
50 %	10.7	14.8	-55.0	0.41
Free float	10.6	14.8	-54.9	0.41

Cap on sector, X percent	Annualised return, %	Annualised standard deviation, %	Max drawdown, %	Sharpe ratio
15 %	10.8	14.5	-53.4	0.43
20 %	10.7	14.7	-54.6	0.42
25 %	10.6	14.8	-55.0	0.41
30 %	10.6	14.8	-55.0	0.41
Free float	10.6	14.8	-54.9	0.41

Monthly return in US dollars from 1975 to 2018. Annualised return measured as arithmetic mean. Excess return relative to US T-Bills. The different indices are rebalanced monthly. If the cap is breached, remaining sectors and countries are weighted up according to market weights. Norway is excluded from the universe.
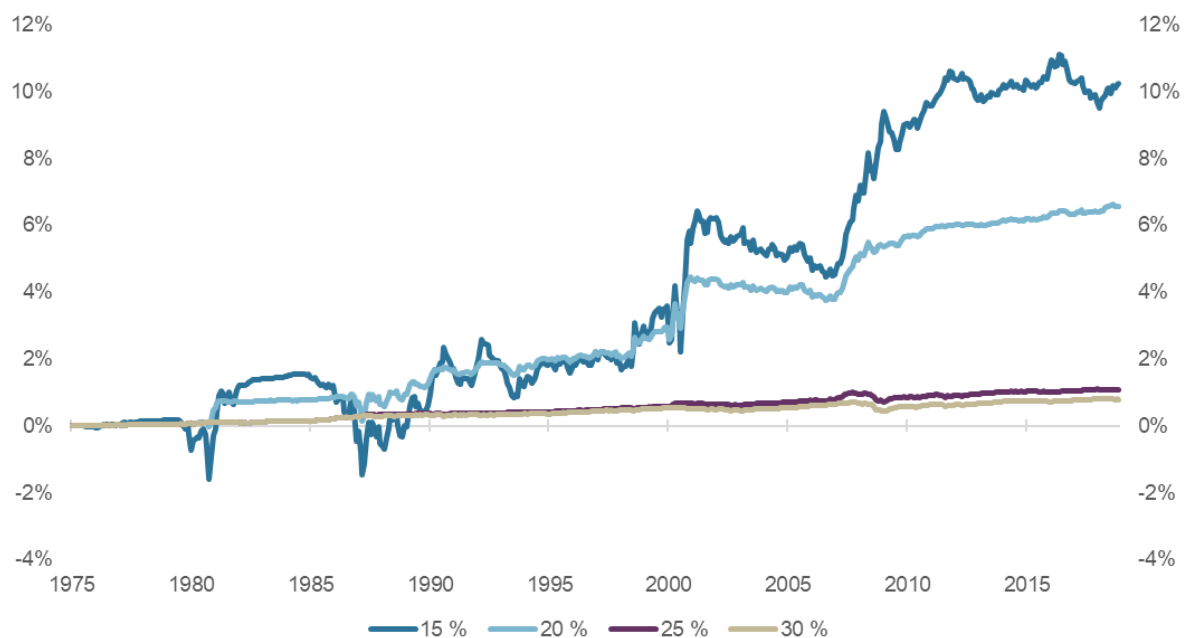Source: MSCI and Norges Bank Investment Management.

Figure 5: Return relative to a global float-adjusted market-weighted index, cap on countries
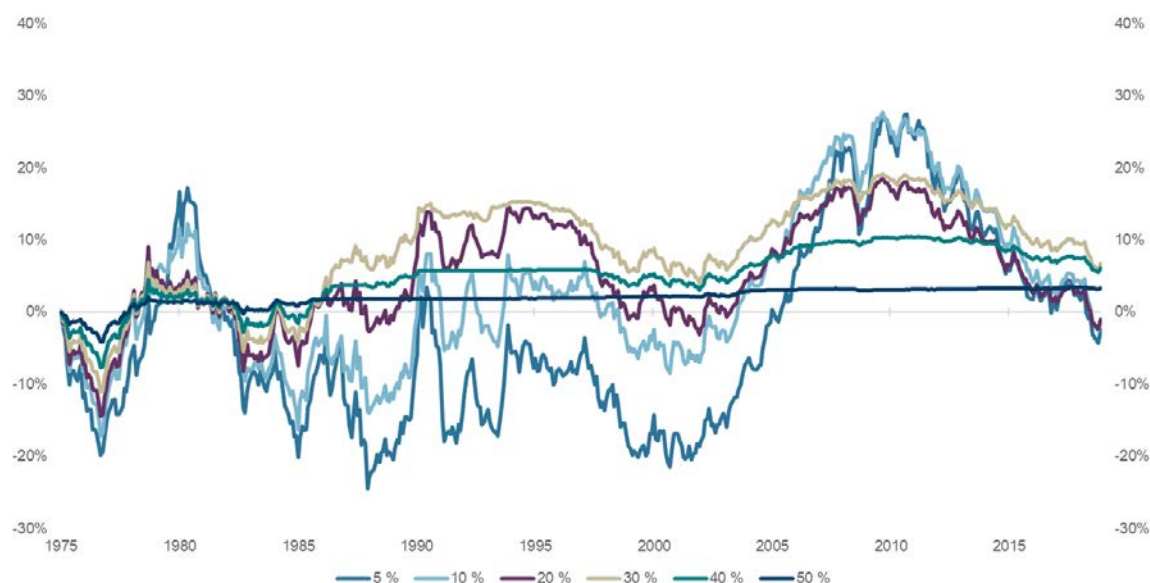
Monthly return in US dollars from 1975 to 2018. Annualised return measured as arithmetic mean. Excess return relative to US T-Bills. The different indices are rebalanced monthly. If the cap is breached, other countries are weighted up according to market weights. Norway is excluded from the universe.
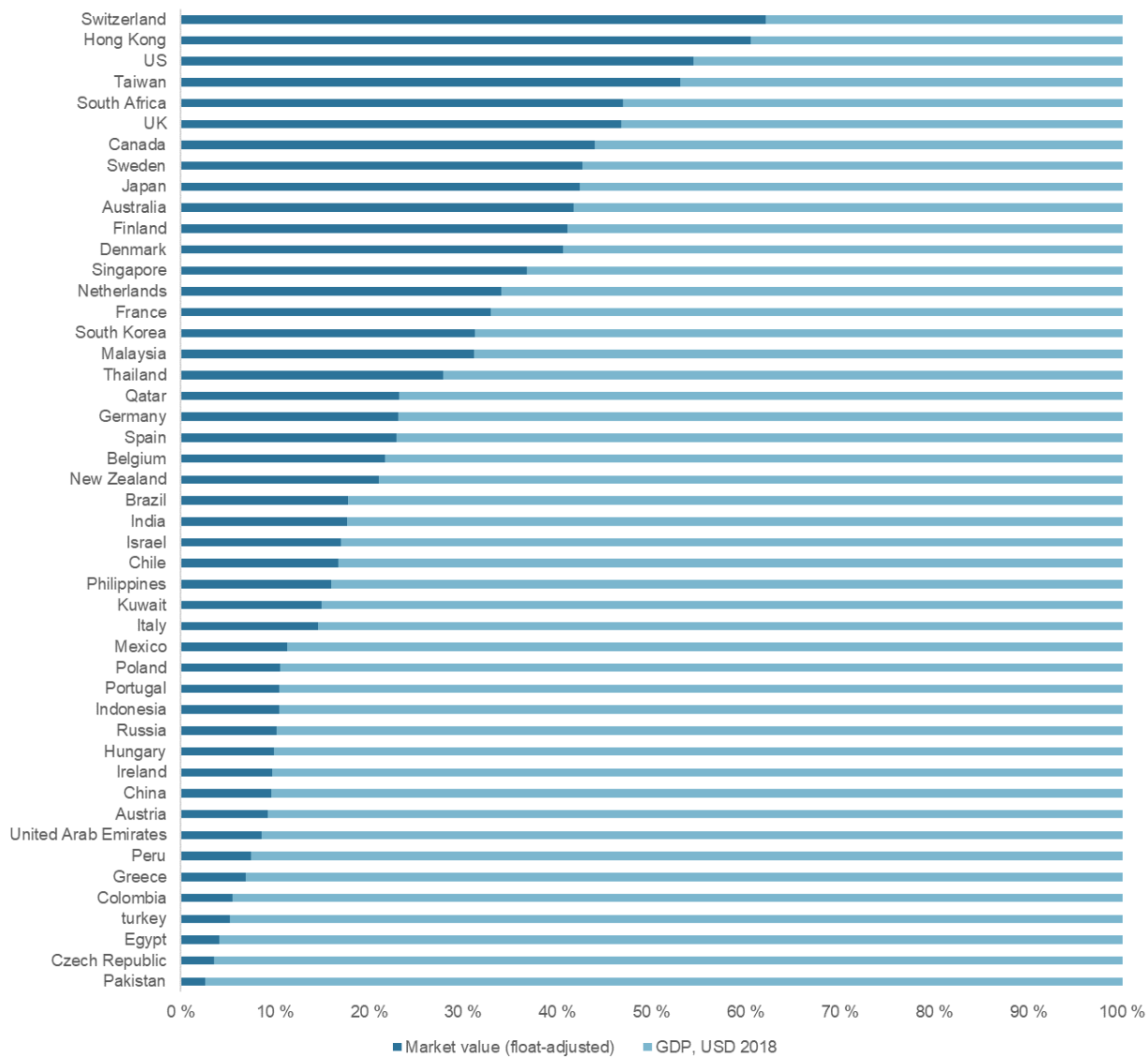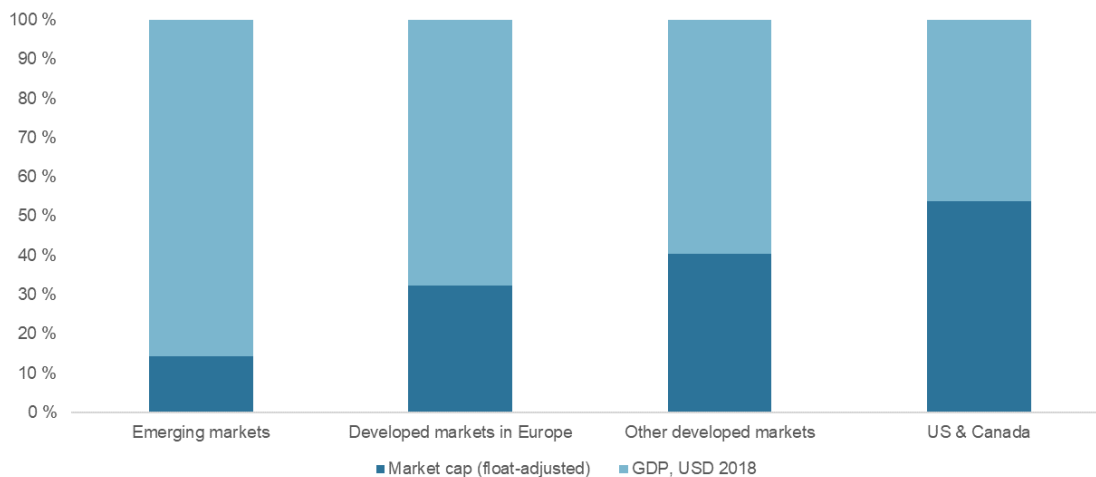Source: MSCI and Norges Bank Investment Management.

Figure 6: Return relative to a global float-adjusted market-weighted index, cap on sectors

Monthly return in US dollars from 1975 to 2018. Annualised return measured as arithmetic mean. Excess return relative to US T-Bills. The different indices are rebalanced monthly. If the cap is breached, other sectors are weighted up according to market weights. Norway is excluded from the universe.
Source: MSCI and Norges Bank Investment Management.

**Figure 7:** Relationship between country's GDP and market value

Source: FTSE Russell, IMF World Economic Outlook database and Norges Bank Investment Management.

Figure 8: Relationship between region's GDP and market value

Source: FTSE Russell, IMF World Economic Outlook database and Norges Bank Investment Management.

Figure 9: Minority shareholder protection, MSCI
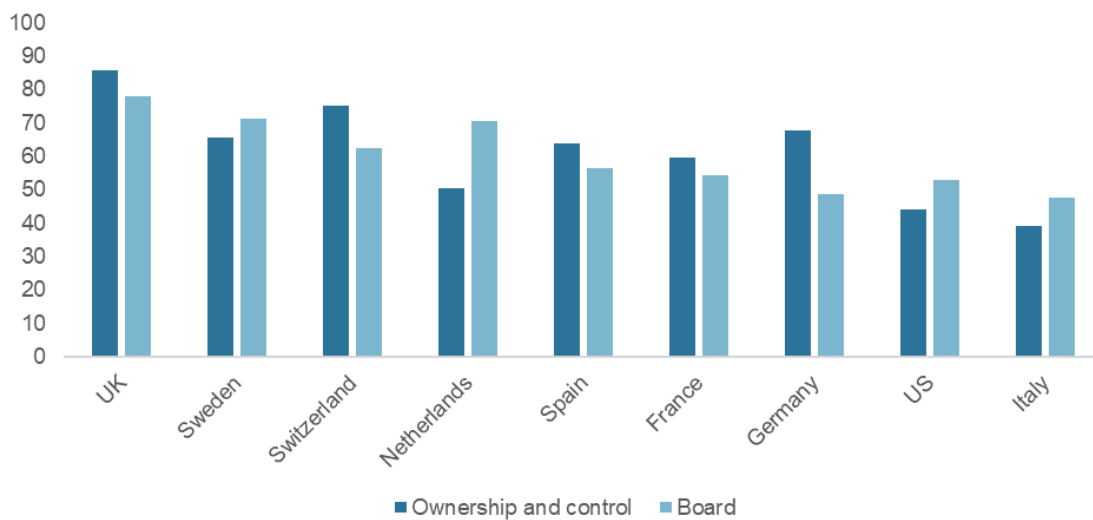
The figure shows two indicators from MSCI's broad database on ESG factors. MSCI assigns a score to single companies. These scores are weighted by the fund's company holdings as at October 2018.
Source: MSCI.

Figure 10: Minority shareholder protection, World Bank
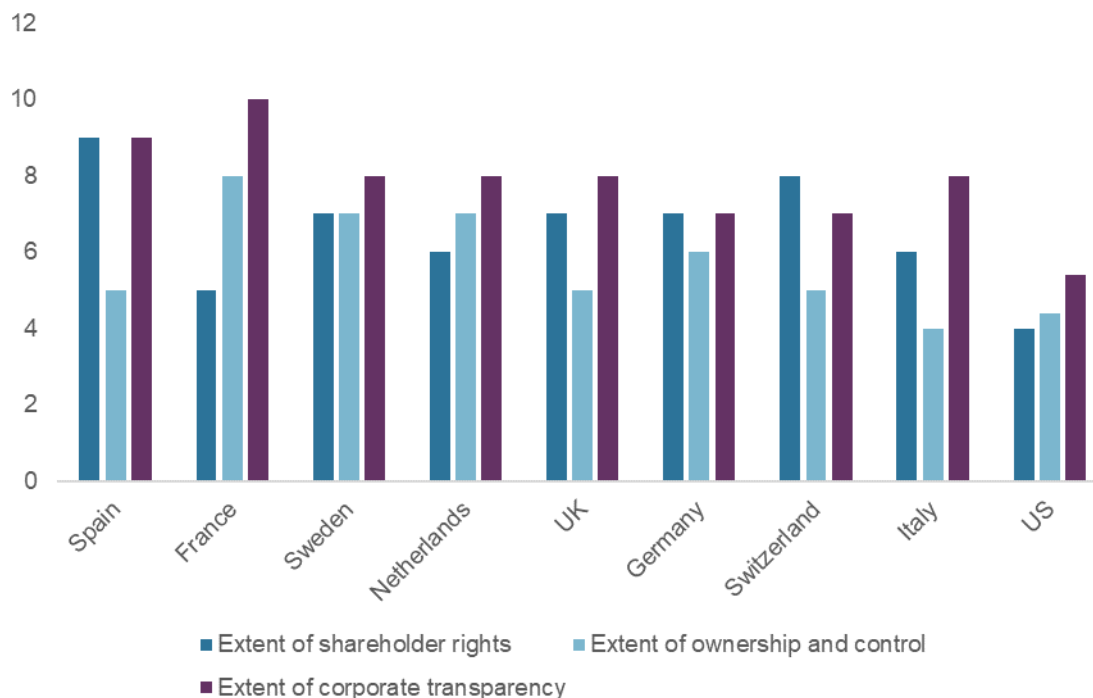
The figure shows three indicators from the World Bank's "Ease of doing business" database. See
https://www.doingbusiness.org/ for more information.
Source: World Bank.

Table 12: Regional distribution of different equity indices, as at 31.12.2018

Equity benchmark			
	Today	Float-adjusted market weights	Full market weights
Developed Europe	33.7 %	19.0 %	19.6 %
North America	40.2 %	56.5 %	48.1 %
Other developed markets	15.2 %	14.2 %	15.6 %
Emerging markets	10.9 %	10.2 %	16.7 %

The table shows the regional distribution for different adjustment factors at the end of 2018. All countries are assigned an
adjustment factor of 1.0 in the free-float market weights alternative. In the full market weights alternative, countries are assigned
an adjustment factor that brings the geographical distribution close to the one that follows from full market capitalisation. Norway
is excluded from the universe.
Source: FTSE Russell and Norges Bank Investment Management.

Table 13: Sector distribution of different equity indices, as at 31.12.2018

Equity benchmark	Today	Float-adjusted market weights	Full market weights
Basic Materials	4.83 %	4.34 %	4.65 %
Cons. Goods	12.03 %	10.54 %	10.77 %
Cons. Services	10.65 %	11.59 %	11.42 %
Finance	22.97 %	22.69 %	23.33 %
Health	11.57 %	11.69 %	10.91 %
Industry	13.02 %	12.65 %	12.61 %
Energy	6.28 %	6.01 %	6.13 %
Technology	12.65 %	14.98 %	14.47 %
Telecom	3.08 %	2.85 %	3.05 %
Utilities	2.92 %	2.65 %	2.66 %

The table shows the sector distribution for different adjustment factors at the end of 2018. All countries are assigned an adjustment factor of 1.0 in the free-float market weights alternative. In the full market weights alternative, countries are assigned an adjustment factor that brings the geographical distribution close to the one that follows from full market capitalisation. Norway is excluded from the universe.
Source: FTSE Russell and Norges Bank Investment Management.

Table 14: Country distribution of different equity indices, as at 31.12.2018

Equity benchmark	Today	Float-adjusted market weights	Full market weights
US	38.07 %	53.58 %	45.57 %
UK	9.25 %	5.21 %	5.37 %
Japan	8.94 %	8.38 %	9.19 %
France	5.20 %	2.92 %	3.02 %
Germany	4.86 %	2.74 %	2.82 %
Switzerland	4.66 %	2.62 %	2.71 %
China	3.43 %	3.22 %	5.26 %
Australia	2.41 %	2.26 %	2.47 %
Canada	2.11 %	2.97 %	2.52 %
Netherland	1.90 %	1.07 %	1.10 %
South Korea	1.73 %	1.62 %	1.78 %
Spain	1.72 %	0.97 %	1.00 %
Sweden	1.65 %	0.93 %	0.96 %
Taiwan	1.64 %	1.53 %	2.51 %
Italy	1.44 %	0.81 %	0.83 %
India	1.33 %	1.25 %	2.04 %
Hong Kong	1.30 %	1.22 %	1.33 %
Brazil	0.99 %	0.93 %	1.51 %
Denmark	0.98 %	0.55 %	0.57 %
South Africa	0.80 %	0.75 %	1.23 %
Finland	0.77 %	0.44 %	0.45 %
Belgium	0.60 %	0.34 %	0.35 %
Singapore	0.49 %	0.46 %	0.50 %
Thailand	0.45 %	0.42 %	0.69 %
Russia	0.41 %	0.39 %	0.63 %
Malaysia	0.33 %	0.31 %	0.51 %
Mexico	0.33 %	0.31 %	0.51 %
Indonesia	0.28 %	0.26 %	0.43 %
Poland	0.25 %	0.14 %	0.14 %
Austria	0.19 %	0.11 %	0.11 %
Israel	0.18 %	0.17 %	0.18 %
Ireland	0.16 %	0.09 %	0.09 %
Philippines	0.15 %	0.14 %	0.23 %
Chile	0.14 %	0.13 %	0.22 %
Qatar	0.14 %	0.13 %	0.21 %
New Zealand	0.13 %	0.12 %	0.14 %
Portugal	0.11 %	0.06 %	0.07 %
United Arab Emirates	0.10 %	0.09 %	0.15 %
Turkey	0.09 %	0.09 %	0.15 %
Kuwait	0.06 %	0.06 %	0.09 %
Colombia	0.05 %	0.04 %	0.07 %
Peru	0.04 %	0.04 %	0.07 %
Hungary	0.04 %	0.04 %	0.06 %
Greece	0.04 %	0.04 %	0.06 %
Egypt	0.03 %	0.02 %	0.04 %
Pakistan	0.02 %	0.02 %	0.03 %
Czech Republic	0.01 %	0.01 %	0.02 %

The table shows the country distribution for different adjustment factors at the end of 2018. All countries are assigned an adjustment factor of 1.0 in the free-float market weights alternative. In the full market weights alternative, countries are assigned an adjustment factor that brings the geographical distribution close to the one that follows from full market capitalisation. Norway is excluded from the universe.
Source: FTSE Russell and Norges Bank Investment Management.

Table 15: Return and risk characteristics of different equity indices

Equity index	Annualised return, %	Annualised standard deviation, %	Max drawdown, %	Sharpe ratio
Regional adjustment factors	9.2	15.6	-56.0	0.51
Float-adjusted market weights	9.3	14.9	-54.7	0.54
Full market weights	9.4	15.3	-55.4	0.54

The table shows the return and risk characteristics for different adjustment factors. Monthly return measured in US dollars. Annualised return measured as arithmetic mean. Excess return relative to Fama-French risk-free rate. Regional adjustment factors shows the historical development for an index with the same adjustment factors as the equity benchmark since 2003. All countries are assigned an adjustment factor of 1.0 in the free-float market weights alternative. In the full market weights alternative, countries are assigned an adjustment factor that brings the geographical distribution close to the one that follows from full market capitalisation. Norway is excluded from the universe.
Source: FTSE Russell and Norges Bank Investment Management.

Table 16: Return and risk characteristics of the total benchmark with different equity indices

Benchmark index (70% equities, 30% bonds)	Annualised return, %	Annualised standard deviation, %	Max drawdown, %	Sharpe ratio
Regional adjustment factors	7.7	11.7	-42.8	0.55
Float-adjusted market weights	7.7	11.2	-41.7	0.59
Full market weights	7.8	11.4	-42.2	0.58

The table shows the return and risk characteristics for different adjustment factors. Monthly return measured in US dollars. Annualised return measured as arithmetic mean. Excess return relative to Fama-French risk-free rate. Regional adjustment factors shows the historical development for an index with the same adjustment factors as the equity benchmark since 2003. All countries are assigned an adjustment factor of 1.0 in the free-float market weights alternative. In the full market weights alternative, countries are assigned an adjustment factor that brings the geographical distribution close to the one that follows from full market capitalisation. Norway is excluded from the universe. The bond index consists of 70% in the Bloomberg Barclays Global Aggregate G4 Treasury and 30% in the Bloomberg Barclays Global Aggregate Credit, measured in US dollars.
Source: FTSE Russell, Bloomberg Barclays and Norges Bank Investment Management.