Norwegian Ministry of Finance
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Date: 22.08.2019

## Equity investments in emerging markets

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 Government Pension Fund Global (GPFG). We have decided to divide the Bank's response into two letters. In this letter, we address the Bank's experience of investing in emerging equity markets and markets that are not included in the benchmark index, and the Bank's framework for the management and control of risk in these markets. We also consider the composition of the subindex for emerging equity markets in the benchmark index. In the second letter, we look at whether the current adjustment factors in the benchmark index for equities should be adjusted.

The GPFG is a sovereign wealth fund with a long investment horizon. The management objective 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.

The Council on Ethics is currently responsible for assessing whether the fund's investments in individual companies comply with the ethical guidelines for the GPFG. In April 2019, the Ministry appointed a committee to review these guidelines.[1] The committee has been asked, among other things, to consider the ethical implications of investing in specific countries and whether the current guidelines are suited to countries with limited availability of information. We do not look at these issues further in this letter.

[1] The committee is to submit its report by 15 June 2020.

## Experience and results

The fund has been invested in emerging equity markets since the year 2000, when Brazil, Greece, Mexico, South Korea, Taiwan, Thailand and Turkey were included in the benchmark index. In 2004, the fund was also permitted to invest in Chile, China, the Czech Republic, Hungary, Indonesia, Israel, Malaysia, the Philippines, Poland and South Africa. Following a broad review of the fund's management in 2007, it was decided that the benchmark index should include all equity markets classified as emerging by the index provider FTSE.[2] It was decided at the same time to permit the fund to be invested in equity markets that are not included in the benchmark index.[3]

At the end of 2018, around 7 percent of the fund was invested in equities from emerging markets.[4] This includes the fund's investments in markets that are not part of the benchmark index, known as frontier markets. Unless explicitly stated otherwise, all further references to emerging equity markets in this letter include frontier markets.

The fund's investment strategy in emerging equity markets has evolved over time. We have found that proximity to these markets is important for the ability to assess the risk associated with investments there. The Bank has therefore chosen to use external managers in most of these markets. At the end of 2018, approximately 250 billion kroner was invested through 61 external managers in 42 emerging equity markets. In the smallest markets, all of the fund's equity investments are handled by external managers. In the largest markets (China, Taiwan, India and Brazil), a substantial proportion of the fund's equity investments are managed internally. Staff at the Shanghai office of Norges Bank Investment Management (NBIM) are responsible for much of this internal management.

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. Over the past 25 years, however, the higher market risk in emerging markets has not resulted in a higher realised total return than in developed equity markets.[5] Since 2013, the annualised return on the fund's equity investments in emerging markets has been 4.1 percent.[6] The equivalent figure for emerging markets included in the benchmark index is 3.1 percent, while the return on equities in developed markets in the benchmark index has been 9.2 percent. See Tables 1 and 2 in Enclosure 2 for further details.

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[2] The change was made with effect from 2008. See Enclosure 1 for a presentation of FTSE's criteria for approving new equity markets.

[3] This change came into effect in June 2007 when the Ministry withdrew the country list applied previously.

[4] See Figure 1 in Enclosure 2.

[5] Further information on the return and risk characteristics of equity investments in emerging markets can be found in the Bank's letter of 21 August 2019 "Geographical distribution of the benchmark index for equities".

[6] Measured in the fund's currency basket, before costs. Costs for external management during this period amounted to 0.4 percentage point. Costs for internal equity management in emerging markets were considerably lower.

The fund's long investment horizon indicates that it may be well placed to invest in illiquid emerging equity markets and thus achieve a more diversified portfolio.[7] This is in keeping with the Ministry's observation in Report to the Storting No. 17 (2011-2012) that the fund's 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. In addition to this structural advantage, the fund may have a developed advantage in the form of the expertise we have built up in choosing external managers.[8] In some large emerging equity markets, it has been a challenge to find external managers that meet our requirements and have sufficient capacity. The fund's size can therefore be a structural disadvantage in these markets.

**The risk of investing in emerging equity markets**

The Ministry has asked for a report on the framework for the management and control of the specific risks in emerging equity markets and markets that are not included in the benchmark index. The Ministry refers partly to the Bank's assessments in its letter of 2 February 2012. In its consideration of various matters that could be expected to result in higher risks and so higher expected returns in emerging markets, the Bank wrote at the time:

*"Factors such as stability in the governance structure, regulation of financial markets, legal system and legislative quality, extent of corruption and, ultimately, danger of expropriation contain elements of risk that need to be considered. In some cases, foreign investors and the interests of minority shareholders enjoy only limited protection. Foreign investors in some markets are subject to special rules and restrictions, and some countries do not fully allow the free movement of capital in their currency. It is not certain that the fund will have a natural advantage over other funds in harvesting risks of this type."*

A number of these factors come under the umbrella of political risk. This type of risk will normally be country-specific and may be broad or narrow in terms of the number of companies and investors affected. The financial consequences of political risk can be reduced by being invested in a large number of markets and companies. In Enclosure 3, we show that the reduction in risk from diversifying equity investments across numerous countries is greater in emerging markets than in developed markets.[9] Exposure to political risk can also have non-financial aspects. These non-financial aspects need to be handled by means other than diversification.

[7] See the Bank's letter of 21 August "Geographical distribution of the benchmark index for equities" for a discussion of the general portfolio characteristics of equity investments in emerging equity markets.
[8] See Ang A., Brandt M. and Denison D. (2014) "Review of the Active Management of the Norwegian Government Pension Fund Global" for further discussion of structural and developed advantages.
[9] 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.

**Framework for the management and control of risk**

Risk management in the fund is performed in line with the requirements of the management mandate, which states that the Bank is to establish principles for risk management, measurement and control that, as a minimum, adhere to internationally recognised standards and methods.[10]

The Bank's Executive Board has laid down general principles for how risk management in the fund is to be carried out. The Executive Board requires NBIM's investment activities to be performed in a way that ensures independence between the first and second lines of defence, i.e. those taking operational investment decisions and those responsible for risk management and control.

The risk arising in the management of the fund is to be classified as strategic, investment-related or operational.[11] Strategic risk is the risk of us not achieving our objectives as set out in our strategy plan. Investment risk is the risk of events that affect the return on the fund's investments and includes market risk, credit risk and counterparty risk. Other types of risk, such as political risk, may also impact on the value of our investments and so come under the heading of investment risk. Operational risk is the risk of unwanted events that occur as a result of human error, failure of processes or systems, and events caused by third parties or other external factors.

The Executive Board's principles also require the risk of reputational impact to be considered for all three classes of risk. NBIM's CEO may accept operational and reputational risks considered "significant" on the scale set out in the principles, but must inform the Executive Board. Operational and reputational risks considered "critical" on the same scale may only be accepted by the Executive Board.

These general principles form the basis for the Bank's approval of equity markets. The risk associated with individual investments in emerging equity markets is managed partly by using locally-based external managers and through risk-based divestments.

Approval of equity markets

In principle, the fund may be invested in any equities listed on a regulated and recognised market place, cf. Section 3-1 of the management mandate.[12] The Bank must approve all markets in which the fund's equity portfolio is invested before the fund is invested in them. This requirement applies whether or not the equity market is part of the benchmark index. The Bank's approval process is therefore the same for all equity markets. 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

[10] Cf. Section 4-1 of the Management Mandate for the GPFG.
[11] The general principles for risk management at NBIM are available at www.nbim.no. Limits for investment risk are laid down in the mandate for the CEO of NBIM issued by the Executive Board.
[12] With the exception of securities issued by Norwegian enterprises, securities denominated in Norwegian kroner and securities that the Bank has excluded from the investment portfolio under the Guidelines for Observation and Exclusion from the GPFG.

decision to approve a new market is consistent with the fund's overall investment strategy.

The starting point for the Bank's approval of equity markets is that the fund is to be invested in companies traded on a market place. It is thus the market place rather than the actual country that is subject to approval. The operational implementation of the mandate requirement to approve the equity markets in which the fund is invested is currently delegated to NBIM. NBIM's CEO has issued a policy on the considerations that are to be prioritised during the approval process. This policy is available on the Bank's website.[13]

The first step in the approval process is to assess the equity market in question against the fund's investment strategy. This is followed by a broad review of the various types of risk in that market in line with the framework outlined above. We look, for example, at legislative quality, the legal system, the extent of corruption and other social issues in the country. These assessments are made on the basis of information from recognised international organisations and external data providers.[14] The information from external data providers is supplemented with opinions obtained from legal advisers in the country in question. The availability of information from neutral and reliable sources may be limited in some markets. In these cases, the approval process will normally take longer and may require meetings with representatives of the authorities and various organisations in the country.

NBIM's Risk Department is responsible for carrying out the risk assessment of equity markets. The department obtains the necessary information from other departments at NBIM. The process will normally involve the Legal Department, the Operations Department and the Compliance and Control Department. The risk assessments are carried out at a distance from, and independently of, the individuals and units that take operational investment decisions.

Equity markets are currently approved by NBIM's CEO in the Investment Universe Committee based on recommendations from the Chief Risk Officer. The Investment Universe Committee consists of members of NBIM's Leader Group and is chaired by the Chief Compliance Officer.[15]

<u>Risk of investing in individual companies</u>

*Use of external managers*

Equity investments in emerging markets may have a slightly different risk profile to those in developed markets. Shares will often be less liquid. The availability of information,

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[13] See http://www.nbim.no/en/organisation/governance-model/policies/investment-universe/.

[14] Examples of external sources are the World Bank's Worldwide Governance Indicators and Transparency International's Corruption Perceptions Index.

[15] Committees are an important part of the governance structure at NBIM. They serve as advisory fora for NBIM's CEO for decisions in a number of areas. For more information, see www.nbim.no.

regulation and market practices vary more widely from market to market. Proximity to these markets is therefore important for the ability to assess the risk of investing in individual companies there. As a result, we use external managers in most of these markets. We choose managers with a local presence and specialist expertise in clearly defined investment areas.
The process for selecting managers includes an external review to assess the manager's integrity.[16] Capital for external management is kept in segregated accounts at our custodian bank. If we decide to discontinue a mandate, we immediately assume account and management responsibility. This helps reduce the operational risk associated with the use of external managers.

The Bank may ask external managers for the information it requires. This might be information on individual companies or general market information. For example, we have used information of this kind as a basis for risk-based divestments.[17] In line with Section 7 of the Guidelines for Observation and Exclusion from the GPFG, this type of information may also be shared with the Council on Ethics.

We make clear requirements of all our external managers.[18] Managers must have an understanding of our priorities in terms of responsible investment and be able to demonstrate how these are integrated into their investment activities. We use our expectations documents in our monitoring of external managers, and the managers use these documents in their dialogue with the companies they invest in. At the end of 2018, external managers were invested in only around a quarter of the approximately 2,100 companies from emerging markets included in the benchmark index. They were also invested in more than 800 companies that, for various reasons, were not part of the benchmark index.[19] We continuously monitor which companies external managers are invested in and what changes they make to their portfolios.

External managers currently handle all of the fund's investments in markets that are not part of the benchmark index.[20] To reduce the risk associated with individual investments in these markets, we have chosen to remove a number of mining, commodities, metals and power companies from the indices we give external managers. This helps ensure that they take particular care before investing in such companies.

The decision to have external managers handle a substantial share of the fund's allocation to emerging equity markets has pushed up overall management costs. The results of external equity management in emerging markets have been good. The annualised excess return after costs since 2005 has been 3.5 percent.

[16] The results are summarised in an Integrity Due Diligence report.
[17] For further information on the Bank's risk-based divestments, see the report *Responsible Investment 2018*, available at www.nbim.no.
[18] See, for example, Section 1-8 of the management mandate on external managers and service providers, and Section 5 of the Regulation on Risk Management and Internal Control at Norges Bank.
[19] This includes external managers' investments in frontier markets and Chinese A-shares.
[20] This applies from 1 July, when Chinese A-shares became included in the benchmark index.

*Risk-based divestments*
The Risk Department monitors developments at companies in which the fund is invested and performs risk assessments of individual companies that are flagged in this process. If the risk assessment shows that a company's operations present an unacceptable risk for the fund, we may choose to divest from the company.[21] Decisions on risk-based divestments of this kind are taken by NBIM's CEO in the Ownership Committee based on a recommendation from the Chief Risk Officer.

We have made risk-based divestments from 240 companies since this tool was taken into use in 2012. Almost 140 of these are domiciled in emerging markets.[22] Many of them are small companies. The companies we choose to divest from are removed from the investment universe as it is defined in the Bank's internal and external management mandates. Risk-based divestments are carried out within the Bank's limit for relative volatility.

**Composition of the subindex for emerging equity markets**
The benchmark index plays an important role in the management of the fund and needs to be constructed on the basis of verifiable, transparent criteria. For it to serve as a yardstick for the decisions the Bank makes in its implementation of the management mandate, it needs to be investable for the fund.[23]

The Ministry has asked the Bank to report on FTSE's methods and rules for the inclusion of markets in the FTSE Global All Cap index. We do so in Enclosure 1. The report is based on information that is publicly available on the index provider's website. FTSE's classification process is extensive and includes both a technical evaluation of the market and an assessment of the securities trading system in each country. Political risk is not weighted directly.

The Bank has been asked to consider alternative methods and rules for the composition of the subindex for emerging markets that reduce exposure to the specific risks in these markets, such as specific political risks and instability. These alternatives are to include indices consisting of fewer markets and companies than today.

We present a number of alternative subindices for emerging equity markets in Enclosure 4. The alternatives have been constructed using transparent and verifiable criteria such as type of market, size of market, size of company and size of economy. We have used

[21] For further information on risk-based divestments, see the report *Responsible Investment 2018*, available at www.nbim.no.
[22] Around 2,500 of the approximately 9,000 companies in which the fund was invested at the end of 2018 were domiciled in emerging markets.
[23] In Report to the Storting No. 20 (2018-2019), the Ministry of Finance defines investability as the degree to which an investment rule or idea can be implemented in practical investment management (only available in the Norwegian version of the report).

data from FTSE and the IMF. The differences in the return and risk characteristics of the various alternative subindices are relatively small.

The various alternative indices have different country compositions. Political risk will often be country-specific. We have looked at the relationship between the country distribution of these alternative subindices and various quantitative indicators of political risk and found no clear relationship.[24]

**Norges Bank's advice**

Norges Bank recommends no changes to the method and rules for the composition of the subindex for emerging markets in the benchmark index for equities. The benchmark index should continue to include all companies in all developed and emerging markets in the FTSE Global All Cap, which is constructed on the basis of verifiable, transparent criteria and is updated regularly to ensure that it is investable for typical users. The current index is a good starting point for transparent and cost-effective equity management.

In our opinion, it would be challenging to construct a subindex for emerging markets that not only meets the needs of a good benchmark but can also be expected with any degree of certainty to reduce exposure to political risk. The most effective way to reduce the financial consequences of political risk is to diversify investments across a large number of equity markets. This speaks in favour of a broad index and in favour of the Bank continuing to be permitted to invest the fund in markets that are not part of the index.

The types of event described in our letter of 2 February 2012 have scarcely materialised during the period in which the fund has been invested in equities in emerging markets. The Bank's experience from almost 20 years as a sovereign minority shareholder in companies in emerging markets has been positive. The framework for the management and control of risk in equity investments in emerging markets has evolved over time and provides for comprehensive assessment of both financial and non-financial risks to which the fund is exposed through these investments. The framework supports the management objective of maximising return given acceptable risk.

The importance of country-specific factors in emerging markets does, however, indicate that consideration could be given to putting a limit on the share of the index for which any one emerging equity market may account. Such circumstances can be particularly emphasised if large exposures are accompanied by a high level of risk, including non-financial risk.

[24] Examples include the World Bank's rule-of-law indicator (https://datacatalog.worldbank.org/rule-law-estimate-0), the World Economic Forum's property rights indicator, and the Political Terror Scale developed by Freedom House (http://www.politicalterrorscale.org/).

As outlined by the Ministry in its letter of 6 November 2018, responsibility for approving equity markets could in future be assigned to the Executive Board. If the Ministry decides to amend the mandate in this direction, the documentation supporting these decisions will continue to be prepared with adequate distance from, and independently of, the individuals and units that take operational investment decisions.

Yours faithfully

Jon Nicolaisen Yngve Slyngstad

4 enclosures

## Enclosure 1: Rules for the inclusion of equity markets in the FTSE Global All Cap

The FTSE Global All Cap is designed to reflect the investment opportunity set available to typical international investors. Equity markets in the countries included in the index must therefore be investable for international investors. The rules for how the index is constructed are publicly available on the index provider's website.[25]

FTSE Russell conducts an annual review of which countries should be included in the index and whether the equity market in each country should be classified as developed, advanced emerging or secondary emerging. The classification process is extensive and includes both a technical evaluation of the market and an assessment of the securities trading system in each country. The latter is performed partly on the basis of dialogue with the exchanges and regulators in the country. These reviews are put before the largest users of the indices in various committees, such as the FTSE Russell Country Classification Advisory Committee. As a major user of FTSE indices, NBIM is represented on several of these committees. The committees have only an advisory function, however, and it is the index provider that takes the final decision on which countries are to be included and how the equity market in each country is to be classified.

FTSE Russell regularly updates a watch list of countries that meet, or are close to meeting, the criteria for inclusion in its broad global stock index. The list also includes countries that are being considered for reclassification. A country will normally be placed on this list for at least a year before being included in the index or reclassified. This increases predictability and allows gradual adjustment to index changes by users of the index.

The process for reclassification and inclusion of new countries takes place between January and September each year. During this period, the countries on the previous year's watch list and countries on the new watch list are assessed against the criteria described below. Once approved by the FTSE Russell Policy Advisory Board and the FTSE Russell Product Governance Board, the decision and the rationale for it are communicated to relevant parties in the country in question. The decision is also published on FTSE Russell's website. The timetable for introducing new countries is set by FTSE Russell and is tailored to the characteristics of the equity market in the country in question. The implementation process will normally be performed in several stages.

FTSE's assessments of individual markets start from the country's gross national income (GNI) per inhabitant and its creditworthiness, but there are no absolute limits for either. The assessment of whether or not the equity market in a country should be included in the index is based on a broad review of 21 market-related criteria which can be subdivided into four main categories:

- Market and regulatory environment (seven criteria)
- Custody and settlement (five criteria)
- Dealing landscape (eight criteria)
- Derivatives (one criterion)

The equity market in each country is assessed against these 21 criteria, and on each of these the country is scored as "pass", "restricted" or "not met". To be classified as a developed market, the country must be scored as "pass" or "restricted" on all 21 criteria, with only a small number of "restricted" scores. Emerging equity markets will generally be scored as "restricted" or "not met" for a relatively high number of criteria. The table below presents the minimum criteria set by FTSE for developed equity markets and the two categories of emerging equity market:

[25] https://www.ftse.com/products/downloads/FTSE_Global_Equity_Index_Series.pdf

**Table 1:** Criteria for assessing quality of markets (as at September 2018) [26]

| | Developed | Advanced emerging | Secondary emerging |
|---|---|---|---|
| **Market and regulatory environment** | | | |
| Formal stock market regulatory authorities actively monitor market | X | X | X |
| Fair and non-prejudicial treatment of minority shareholders | X | X | |
| No or selective incidence of foreign ownership restrictions | X | X | |
| No objection to or significant restrictions or penalties applied to the investment of capital or the repatriation of capital and income | X | X | X |
| Developed equity market | X | X | |
| Developed foreign exchange market | X | X | |
| No or simple registration process for foreign investors | X | X | |
| **Custody and settlement** | | | |
| Settlement – Rare incidence of failed trades | X | X | X |
| Custody – Sufficient competition to ensure high-quality custodian services | X | X | X |
| Clearing & settlement – T+2, T+3 | X | X | X |
| Settlement – Free delivery available | X | | |
| Custody – Omnibus and segregated account facilities available to international investors | X | X | |
| **Dealing landscape** | | | |
| Brokerage – Sufficient competition to ensure high-quality broker services | X | X | X |

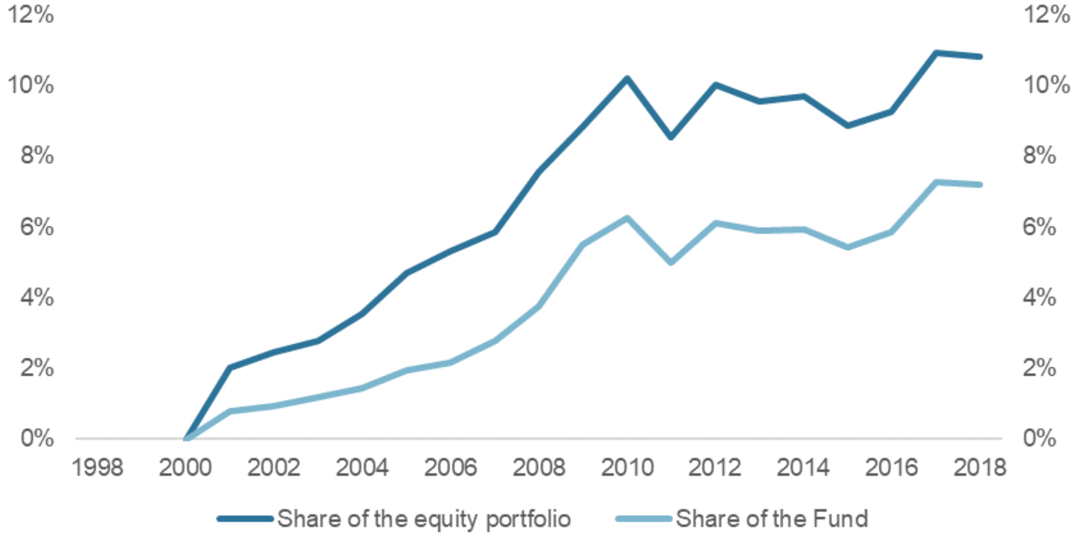
[26] Assessment criteria for individual markets as at September 2018:

| | | | |
|---|---|---|---|
| Liquidity – Sufficient broad-market liquidity to support sizeable global investment | X | X | X |
| Transaction costs – Implicit and explicit costs to be reasonable and competitive | X | X | X |
| Stock lending permitted | X | | |
| Short sales permitted | X | | |
| Off-exchange transactions permitted | X | | |
| Efficient trading mechanism | X | | |
| Transparency – Market depth information/visibility and timely trade reporting process | X | X | X |
| **Derivatives** | | | |
| Developed derivatives market | X | | |

FTSE also sets criteria for the companies to be included in the index for each market, and for which market places (exchanges) and types of instrument are to be included for each country. See FTSE's website for further information.

## Enclosure 2: The fund's equity investments in emerging markets

**Figure 1:** Share of the fund and the equity portfolio invested in emerging markets




**Source:** NBIM.

**Table 1:** Annualised return and risk for the fund's total equity investments in emerging markets (before costs), since 2013

| | Annualised return | Annualised standard deviation |
|---|---|---|
| Emerging markets in the equity portfolio | 4.7 % | 12.5 % |
| Emerging markets in the equity index | 3.1 % | 12.6 % |
| Developed markets in the equity index | 9.2 % | 9.9 % |

Because of organisational changes, we can only show the total return for emerging markets from 2013. The fund's investments in emerging markets include markets that are not part of the equity index. The biggest difference is the fund's investments in Chinese A-shares.

**Table 2:** Annualised return after management costs for the external equity mandates in emerging markets

| | From June 2005 | From 2013 |
|---|---|---|
| Portfolio | 11.6 % | 4.2 % |
| Reference portfolio external equity mandates | 8.2 % | 0.8 % |
| Relative return | 3.5 % | 3.3 % |
| Standard deviation relative return | 3.7 % | 2.1 % |
| IR | 0.94 | 1.59 |

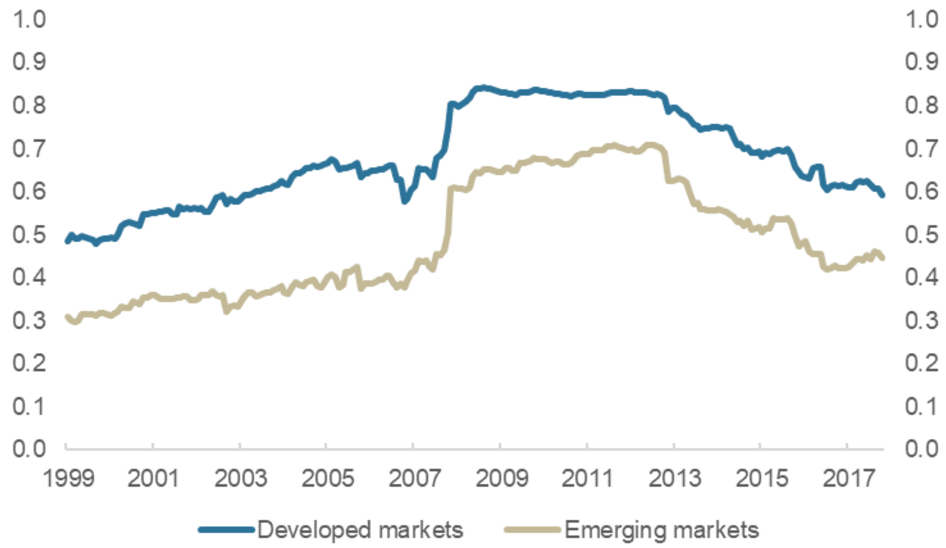
The return on the fund's external equity mandates in emerging markets is measured against the internal reference portfolio for these equity mandates. The biggest difference between the internal reference portfolio and the emerging market index from FTSE is a lower weight of large markets, such as China, Taiwan, Brazil and India, in the reference portfolio. A relatively large share of the fund's investments in these markets is managed internally.

**Table 3:** Distribution of the equity portfolio in emerging markets as at 31.12.18, billions of Norwegian kroner. Countries are classified according to the holding list at www.nbim.no.

| | Country classification from FTSE | Equity portfolio | Equity index |
|---|---|---|---|
| Bahrain | Frontier | 0.48 | - |
| Bangladesh | Frontier | 1.76 | - |
| Botswana | Frontier | - | - |
| Brazil | Emerging, advanced | 53.45 | 54.01 |
| Chile | Emerging, secondary | 7.42 | 7.74 |
| China | Emerging, secondary | 197.74 | 187.71 |
| Colombia | Emerging, secondary | 3.93 | 2.59 |
| Croatia | Frontier | 0.30 | - |
| Cyprus | Frontier | - | - |
| Czech Republic | Emerging, advanced | 0.32 | 0.66 |
| Egypt | Emerging, secondary | 3.71 | 1.41 |
| Estonia | Frontier | 0.09 | - |
| Ghana | Frontier | 0.01 | - |
| Greece | Emerging, advanced | 3.26 | 2.14 |
| Hungary | Emerging, advanced | 0.64 | 2.28 |
| Iceland | Frontier, as of September 2019 | 0.01 | - |
| India | Emerging, secondary | 64.05 | 72.79 |
| Indonesia | Emerging, secondary | 15.15 | 15.43 |
| Jordan | Frontier | 0.01 | - |
| Kenya | Frontier | 0.92 | - |
| Kuwait | Emerging, secondary | 1.32 | 3.37 |
| Latvia | Frontier | 0.02 | - |
| Lithuania | Frontier | 0.07 | - |
| Malaysia | Emerging, advanced | 13.59 | 18.29 |
| Malta | Frontier | 0.00 | - |
| Mauritius | Frontier | 0.07 | - |
| Mexico | Emerging, advanced | 17.74 | 18.18 |
| Moldova | No classification | 0.01 | - |
| Morocco | Frontier | 0.86 | - |
| Nigeria | Frontier | 0.75 | - |
| Oman | Frontier | 0.38 | - |
| Pakistan | Emerging, secondary | - | 1.06 |
| Peru | Emerging, secondary | 1.89 | 2.40 |
| Philippines | Emerging, secondary | 6.60 | 8.05 |
| Qatar | Emerging, secondary | 0.32 | 7.51 |
| Romania | Frontier, observation list emerging | 0.89 | - |
| Russia | Emerging, secondary | 23.38 | 22.57 |
| Saudi Arabia | Emerging, as of March 2019 | 9.00 | - |
| Slovakia | Frontier | - | - |
| Slovenia | Frontier | 0.62 | - |
| South Africa | Emerging, advanced | 36.78 | 43.92 |
| Sri Lanka | Frontier | 0.85 | - |
| Taiwan | Emerging, advanced | 90.34 | 89.61 |
| Tanzania | Observation list frontier | 0.00 | - |
| Thailand | Emerging, advanced | 20.69 | 24.65 |
| Tunisia | Frontier | 0.13 | - |
| Turkey | Emerging, advanced | 6.13 | 5.18 |
| Ukraine | Frontier according to MSCI | 0.55 | - |
| United Arab Emirates | Emerging, secondary | 3.00 | 5.47 |
| Vietnam | Frontier, observation list emerging markets | 3.99 | - |

## Enclosure 3: Risk characteristics of emerging equity markets

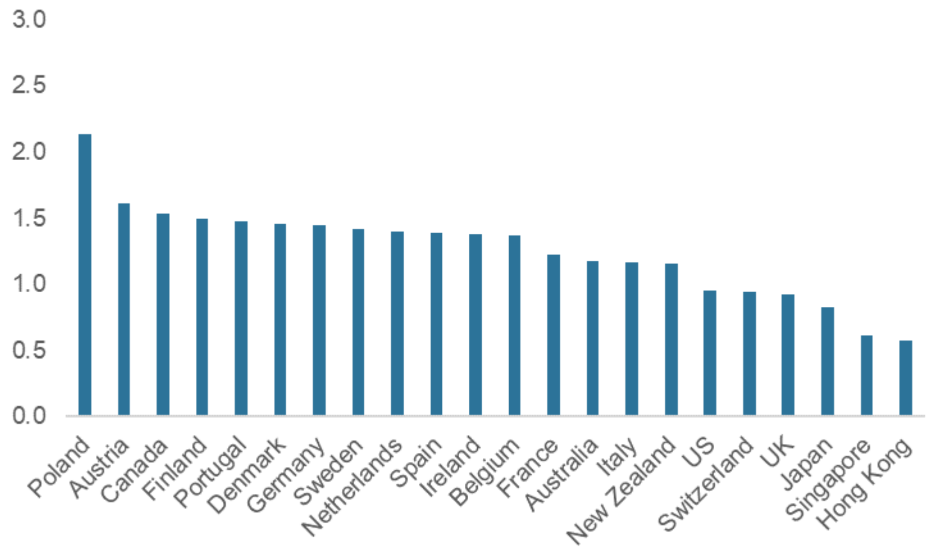
**Figure 1:** Correlation between equity markets within the same region




The figure shows the five-year rolling correlation between equity returns within developed markets and within emerging markets. Return measured in US dollars. Data for the period 1995 to 2018. Country classification updated monthly.

Source: Global Financial Data and NBIM calculations.

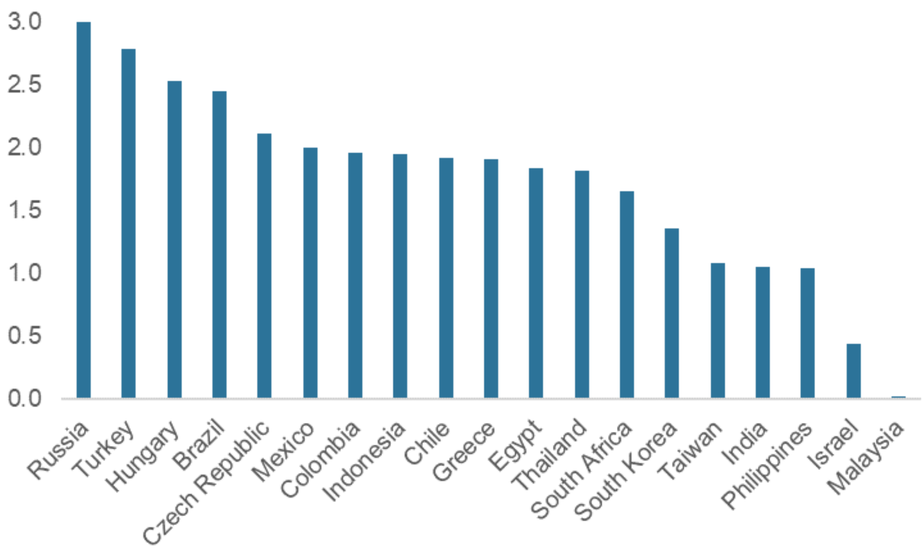
**Figure 2:** Downside beta against S&P 500, developed equity markets




The figure shows the downside beta against the S&P 500 over the period from 1995 to September 2018. Downside beta is defined as the equity beta in each country in periods where the equity market in the US is one standard deviation lower than the average historical return. Return measured in US dollars. Beta measured relative to excess return against US T-bills. Countries classified as developed by FTSE as at 31/12/2018.

Source: Global Financial Data and NBIM calculations.

**Figure 3:** Downside beta against S&P 500, emerging equity markets




The figure shows the downside beta against the S&P 500 over the period from 1995 to September 2018. Downside beta is defined as the equity beta in each country in periods where the equity market in the US is one standard deviation lower than the average historical return. Return measured in US dollars. Beta measured relative to excess return against US T-bills. Countries classified as emerging by FTSE as at 31/12/2018.

Source: Global Financial Data and NBIM calculations.

## Enclosure 4: Alternative indices for emerging market equities

All tables are based on data as at 31.12.2018.

**Table 1:** Return and risk characteristics of alternative indices for emerging market equities

| | Average return (annualised, %) | Standard deviation (annualised, %) | Max drawdown (%) | Sharpe ratio | Turnover (% p.a) | Market beta | Max ownership | Share to emerging markets, % |
|---|---|---|---|---|---|---|---|---|
| Market weights (free float adjusted, today's index for emerging markets) | 12.18 | 21.35 | -61.2 | 0.51 | - | 1.2** | 1.6 | 9.9 |
| Top 10 countries by market weights. Market weights (float-adjusted) | 12.12 | 21.52 | -61.0 | 0.51 | 0.94 | 1.2** | 1.7 | 9.0 |
| Top 10 countries (GDP). Market weights (float-adjusted) | 12.17 | 22.49 | -63.8 | 0.49 | 2.78 | 1.3** | 1.9 | 8.2 |
| Advanced emerging markets. Market weights (float-adjusted) | 11.49 | 21.99 | -60.5 | 0.47 | 1.42 | 1.2** | 3.6 | 4.3 |
| FTSE large cap companies. Market weights (float-adjusted) | 11.85 | 21.26 | -60.1 | 0.50 | 1.02 | 1.2** | 2.0 | 7.7 |
| FTSE large and mid cap companies. Market weights (float-adjusted) | 12.12 | 21.26 | -60.2 | 0.51 | 0.43 | 1.2** | 1.7 | 8.9 |

*FTSE universe over period 2003-2018. Annualised returns, volatility and Sharpe ratio. Turnover in percent of total market cap and relative to free float adjusted market weights. Market beta measured relative to Fama-French global factors. (**, *) denote significance at the 1% and 5% levels, respectively, based on Newey-West standard errors with 6-month lag length. Max ownership assumes Fund value of 1,000 billion US dollars, 70% equity share and share to emerging markets as of 31/12/2018. Share to emerging markets in percent of FTSE Global All Cap as of 31/12/2018.*

Source: FTSE, IMF and NBIM calculations.

**Table 2:** Country distribution of alternative indices for emerging market equities

| | AE | BR | CL | CN | CO | CZ | EG | GR | HU | ID | IN | KW | MX | MY | PE | PH | PK | QA | RU | TH | TR | TW | ZA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Market weights (free float adjusted, today's index for emerging markets) | 0.9 % | 8.9 % | 1.3 % | 31.0 % | 0.4 % | 0.2 % | 0.2 % | 0.4 % | 0.4 % | 2.6 % | 12.6 % | 0.5 % | 3.3 % | 3.4 % | 0.4 % | 1.4 % | 0.2 % | 1.2 % | 3.9 % | 4.1 % | 0.8 % | 14.8 % | 7.1 % |
| Top 10 countries by market weights. Market weights (float-adjusted) | | 9.7 % | | 33.8 % | | | | | | 2.8 % | 13.7 % | | 3.6 % | 3.7 % | | | | | 4.3 % | 4.5 % | | 16.1 % | 7.7 % |
| Top 10 countries (GDP). Market weights (float-adjusted) | 1.1 % | 10.7 % | | 37.4 % | | | | | | 3.1 % | 15.2 % | | 4.0 % | | | | | | 4.7 % | 5.0 % | 1.0 % | 17.8 % | |
| Advanced emerging markets. Market weights (float-adjusted) | | 20.5 % | | | | 0.5 % | | 0.8 % | 0.9 % | | | | 7.6 % | 7.9 % | | | | | | 9.5 % | 1.9 % | 34.0 % | 16.4 % |
| FTSE large cap companies. Market weights (float-adjusted) | 1.0 % | 8.6 % | 1.2 % | 35.2 % | 0.4 % | 0.2 % | 0.1 % | 0.1 % | 0.4 % | 2.3 % | 12.3 % | 0.6 % | 3.3 % | 3.1 % | 0.4 % | 1.2 % | 0.0 % | 1.4 % | 4.6 % | 3.3 % | 0.5 % | 12.7 % | 7.1 % |
| FTSE large and mid cap companies. Market weights (float-adjusted) | 1.0 % | 9.2 % | 1.3 % | 32.5 % | 0.4 % | 0.2 % | 0.2 % | 0.3 % | 0.4 % | 2.5 % | 12.2 % | 0.6 % | 3.4 % | 3.3 % | 0.4 % | 1.3 % | 0.1 % | 1.3 % | 4.3 % | 3.7 % | 0.8 % | 13.0 % | 7.6 % |

*Source: FTSE Russell, country distribution as of 31/12/2018*

AE: United Arab Emirates, BR: Brazil, CL: Chile, CN: China, CO: Colombia, CZ: Czech Republic, EG: Egypt, GR: Greece, HU: Hungary, ID: Indonesia, IN: India, KW: Kuwait, MX: Mexico, PE: Peru, PH: Philippines, PK: Pakistan, QA: Qatar, RU: Russia, TH: Thailand, TR: Turkey, TW: Taiwan, ZA: South Africa

Source: FTSE, IMF and NBIM calculations.

**Table 3:** Sector distribution of alternative indices for emerging market equities

| | Basic Materials | Consumer Goods | Consumer Serv. | Financials | Healthcare | Industrials | Oil & Gas | Technology | Telecoms | Utilities |
|---|---|---|---|---|---|---|---|---|---|---|
| Market weights (free float adjusted, today's index for emerging markets) | 7.2 % | 8.3 % | 11.6 % | 29.4 % | 2.8 % | 9.3 % | 8.3 % | 15.5 % | 4.6 % | 3.1 % |
| Top 10 countries by market weights. Market weights (float-adjusted) | 7.4 % | 8.7 % | 11.9 % | 27.3 % | 2.9 % | 9.4 % | 8.4 % | 16.9 % | 4.4 % | 2.7 % |
| Top 10 countries (GDP). Market weights (float-adjusted) | 6.9 % | 9.0 % | 9.8 % | 27.1 % | 2.8 % | 9.7 % | 9.3 % | 18.6 % | 4.3 % | 2.5 % |
| Advanced emerging markets. Market weights (float-adjusted) | 10.7 % | 8.3 % | 12.4 % | 27.0 % | 2.2 % | 11.3 % | 5.2 % | 14.7 % | 5.0 % | 3.1 % |
| FTSE large cap companies. Market weights (float-adjusted) | 6.9 % | 7.2 % | 12.0 % | 31.2 % | 1.8 % | 6.7 % | 9.8 % | 16.9 % | 5.4 % | 2.0 % |
| FTSE large and mid cap companies. Market weights (float-adjusted) | 7.2 % | 7.7 % | 11.9 % | 30.1 % | 2.4 % | 8.2 % | 8.9 % | 15.6 % | 5.0 % | 3.0 % |

*Source: FTSE Russell, sector distribution as of 31/12/2018*

Source: FTSE, IMF and NBIM calculations.