Egil Matsen: Management and risk

Speech by Mr Egil Matsen, Deputy Governor of Norges Bank (Central Bank of Norway), at Norges Bank, Oslo, 29 November 2018.

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Accompanying charts of the speech.

Introduction

At the beginning of 2018, the Government Pension Fund Global (GPFG) had posted a positive return for six consecutive years. The average annual return was almost ten percent in this period. Global financial markets are currently experiencing a period of turbulence. This provides a good opportunity to revisit the risk profile of the GPFG and its management.

Chart 1: Six percent annual return since 1998

The annual return on the GPFG has been six percent since 1998. As shown in Chart 1, there have been considerable variations in return from one year to the next, ranging from minus 23 percent to plus 26 percent measured in terms of the GPFG's currency basket.

Although our experience since 1998 is important, a complete picture of the level of risk of a fund that invests for future generations cannot be formed after as short a period as 20 years. This November marks the 100th anniversary of the end of the First World War. The world's population was then about 1.7 billion. Now there are more than 7.5 billion people in the world, while GDP per capita has increased more than fivefold over the past 100 years.

Chart 2: *US moves up, Europe falls back*

Global production patterns, and hence the composition of stock markets, have changed just as dramatically. Stock markets' centre of gravity has undeniably shifted from Europe to the US.[1] In 1900, railway shares accounted for 63 percent of the US stock market and 50 percent of the UK stock market, while today, these shares account for less than 1 percent. New industries have emerged and industries already established in 1900, such as telecommunications, have changed radically.[2]

In the course of these past 100 years, global equity markets have experienced the Great Depression of the 1930s, the Second World War, the oil price shock followed by stagnation in the early 1970s, the dotcom crash in 2000and the financial crisis ten years ago.

The management of the GPFG must have a long-term perspective that extends just as far into the future. We do not know which companies or countries the fund will be invested in 100 years from now, but we do know that investments will have to change over time. We must also expect that the return on the GPFG will fluctuate substantially in periods and that the fund will have to be managed through future dramatic events. What we do not know is when, how or why such events will occur.

Maintaining stable management of the GPFG requires sound management of financial risk. An important feature of the fund's strategy is diversification, where the fund's capital is invested in many different assets worldwide, reducing the vulnerability of the fund's return to developments in individual companies, sectors or countries. Nevertheless, diversification cannot shield the GPFG from crises that have a broader impact. Being prepared for this type of risk will make it easier for us, as a society, to maintain the GPFG's long-term investment strategy in a future downturn. Today, I am going to focus on some of the most turbulent periods in global equity markets – and on the lessons to be learned.

Owning shares in a large number of companies also exposes the GPFG to another type of risk. Answers and action may be demanded from shareholders in response to an incident in a company for reasons other than the incident's effect on expected return. This type of exposure must also be managed, and the Bank's work on responsible investment is important in this context. I will come back to this at the end of my speech.

Financial risk

Chart 3: High volatility driven by equities

Chart 3 shows the real return on a hypothetical portfolio since 1900, invested worldwide and comprising 70 percent equities and 30 percent fixed income instruments. The return is measured in USD. As illustrated in the chart, the return has varied widely from one year to the next.

The fixed income investments cushion the largest falls in value, but as shown in the chart, the return on the portfolio largely tracks equity market returns. With 70 percent of the GPFG allocated to equities, changes in the fund's value ahead will be driven by equity market developments. Let us therefore focus on equity market risk.

As shown in Chart 3, 2008 stands out as one of the worst years in this period. Ten years ago, on 25 November 2008, Norges Bank presented the GPFG's results for the third quarter. Lehman Brothers had gone bankrupt. The world's central banks were making large and frequent cuts in policy rates. In the course of autumn 2008, the US stock exchange fell more than five percent on as many as ten separate days. Norges Bank wrote in its press release that "The third quarter of 2008 was an unusually demanding quarter for the management of the Government Pension Fund – Global." And it was to get worse. The GPFG posted a return for 2008 of minus 23 percent, measured in terms of the fund's currency basket.

Chart 4: Post-crisis paths have differed

Chart 4 shows developments in the US equity market from 2008 onwards. The rapid reversal in equity markets, shown in the chart, also affected the GPFG's results. In 2009, the fund posted a positive return of 26 percent, largely thanks to a 34 percent return on the equity portfolio. The return continued to rise in 2010. While the fall in the fund's value as a result of the financial crisis in 2008 was historically large, the fund's recovery in 2009 was stronger and faster than had generally been expected. Owing to a weakened krone, the GPFG's return was less negative in terms of NOK than in terms of the fund's currency basket. Even though changes in the krone exchange rate do not influence the GPFG's international purchasing power, the fall in the fund's value may have been perceived as less dramatic as a result.

Equity markets have not always rebounded after a steep decline as rapidly as after the 2008 financial crisis. The chart shows developments in a global equity index in the period after the dotcom crash in 2000. From the peak in winter 2000 to the trough in winter 2003, equity prices plunged at the fastest pace since the early 1930s. Fluctuations in the krone exchange rate amplified the fall in the GPFG's value measured in NOK. The value of the GPFG at the beginning of 2003 was 30 percent lower than assumed in the National Budget for 2002.

Investors buying equities in Japan's equity market at the end of 1989 experienced even more dramatic developments. The market fell and stayed there. The value of the shares traded on the Tokyo Stock Exchange is still no higher than the 1989 levels. From being the largest in the world in 1990, accounting for almost 40 percent of global market capitalisation, Japan's equity market now accounts for less than ten percent. However, it is important to remember that these developments apply to only one country. Global equity markets in general have shown completely different developments since 1989.

What can we learn from these crises?

The first lesson is that crises will occur.

Chart 5: Six large falls in 100 years

If we look at annual returns in global equity markets since 1900, the chart shows that negative real equity market returns of the same magnitude as during the financial crisis have occurred in five periods: the Great Depression 1929–31, two world wars, the rise in oil prices at the beginning of the 1970s and the repercussions after the dotcom crash.[3] Both the owner and the manager of the GPFG must be prepared for new crises.

Chart 6: The fund is larger

A larger fund also means more pronounced fluctuations compared with the wider economy. Chart 6 shows the same percentage decline in the value of equities and fixed income instruments as in 2008, disregarding movements in the krone exchange rate. With today's fund, the same decline would have resulted in a fall in the value of the GPFG of NOK 2700 billion. This is equivalent to more than 90 percent of annual mainland GDP, compared with just over 30 percent in 2008.

In previous periods of falling equity prices, petroleum revenue transfers to the GPFG have been substantial relative to the fund's size. Thus, even with a return in equity and fixed income markets of minus 19 percent measured in NOK, the capital in the GPFG only fell by approximately NOK 5 billion in 2002.[4] In 2008, the sum of the negative return, the change in the krone exchange rate and transfers of petroleum revenues was positive, and the value of the GPFG therefore increased between 2007 and 2008.

The next time equity prices fall, the figures will be different. As the government's oil and gas revenues decline and the size of the GPFG increases, the cushioning impact of petroleum revenues on any falls in the fund's value will gradually decrease, making the fund's value even more dependent on the return. In years of negative equity market returns, large absolute falls in the GPFG's value must be expected.

A second lesson is that stock market crashes do not necessarily reverse quickly. The examples I have referred to, the financial crisis in the US, the dotcom crash, and Japan in the 1990s, show that the crises we have observed in the past can vary in depth and duration. The path of the recovery since the dotcom crash has been somewhat U-shaped. Although the fall in market values was not as steep as in 2008, the recovery was slower. Developments in Japan have been more L-shaped: the fall was rapid and the recovery has been slow. Developments since the financial crisis have been V-shaped: a steep fall and a rapid recovery. All these crisis scenarios could occur again.

The third lesson is that equity market returns have been high despite periods of substantial equity market declines. Estimates of the future return on the GPFG are highly uncertain, but a lower equity allocation would have pulled down the fund's expected return. The Ministry of Finance estimates an expected real rate of return on the GPFG of 3 percent.

Underlying the decision to allocate 70 percent of the GPFG to equities is an acceptance of expected fluctuations in the fund's return, in the short and longer term. The investment strategy has enjoyed broad support since the fund's inception. By adhering to the strategy through turbulent periods, the GPFG achieved a return equivalent to NOK 4 300 billion at the end of the third quarter. Historical developments since 1900 and since the GPFG's inception underpin the expectation of higher returns in equity markets than in fixed income markets over time.

Broad diversification to reduce risk is a key element in the overall investment strategy. At the beginning of 2018, the GPFG was invested in more than 9000 companies in 72 countries. An important insight from financial theory is that the expected return on an investment is not determined by the risk associated with the investment in isolation, but by that investment's contribution to systematic risk in a portfolio. An investor cannot be expected to be paid for the extra risk of pursuing a narrow investment strategy. Broad diversification can therefore reduce the total risk of a portfolio, without necessarily lowering the expected return.

Systematic risk is risk that cannot be eliminated through diversification and is the risk associated with market returns that must be accepted when investing in global financial markets. This is the risk that an investor can expect to be compensated for and that delivers a higher expected return.

For the GPFG as a long-term investor, short-term fluctuations are not the most important factor. Periods of weak economic growth occur in all countries. Investing in a broad range of assets reduces the risk of the return being dominated by such a period.

The objection could be raised that international capital markets have become increasingly interwoven. Equity markets in different countries are correlated to an increasing extent. Common factors will often dominate in acute crises.

At the same time, it seems likely that the more fundamental features of an economy are more important in the slightly longer term, as exemplified in the chart. The calculations are based on a data set for equities and ten-year government bonds in 42 countries through all or parts of the period 1950–2016.[5] The lines show the five percent worst outcomes for the value of two different portfolios for different time horizons. The light blue line shows a portfolio diversified across a large number of markets. The dark blue line is a portfolio invested in a single country. The diversified portfolio has posted considerably lower falls in value in crises, and the gain increases with the duration of the crisis.

Chart 7: Increasing gains from diversification over time

In addition, broad diversification reduces the portfolio's vulnerability to extreme events, which can be illustrated by examples from the history of global financial markets since 1900. We have data for equity market returns in 23 countries for this period. Two of these markets were closed down last century and the assets expropriated, ie Russia in 1917 and China in 1949. The markets did not reopen until the beginning of the 1990s. While the Chinese market was small in 1900, the Russian market accounted for six percent of a market-weighted global index.[6]

Chart 8: Fifty years of negative real returns in individual countries

Although developments have been less dramatic in other countries, equity markets in France, Germany and Japan have all experienced periods of negative real returns of more than 50 years. The longest period of negative real returns for the global index has been just over 20 years.[7] Diversification therefore provides some protection even against the most extreme outcomes, even though it will never be possible to completely shield the return on the GPFG from such extreme events.

The risk associated with being a shareholder in 9000 companies

Chart 9: "Diversification is the only free lunch in finance"

Harry Markowitz, the founder of modern portfolio theory, is reported to have said: "Diversification is the only free lunch in finance". Broad diversification of the GPFG's investments is in line with Markowitz's theory. The GPFG's investment strategy contributes to an acceptable risk-return profile for the fund.

At the same time, with ownership shares in 9000 companies, the GPFG is also broadly exposed to conditions and events with dimensions other than the effect on financial risk, related to how a company deals with a specific incident or more fundamental aspects of its operation. A global listed company that is criticised for its activities will almost without exception include the GPFG as one of its shareholders. Questions will sometimes be asked about why the fund is invested in the company and what action is being taken to follow up the fund's investment.

If questions are often raised about whether the GPFG is being managed in what is considered a responsible manner, support for the investment strategy may be affected. This could in turn increase the risk that we will not achieve our primary objective of enabling current and future generations to benefit from Norway's petroleum wealth.

The number of questions related to individual investments cannot be reduced by diversification. On the contrary, the number will increase with the breadth of the GPFG's investments. The portfolio contains a large number of companies that could run into difficulties.

A possible way of managing this type of risk is to exclude companies from the portfolio. Ethical guidelines for the exclusion of companies from the GPFG were established by the Norwegian authorities as early as in 2004.

Under the guidelines, the GPFG must not be invested in companies producing tobacco or certain types of weapons, or with significant coal-related operations. Companies may also be excluded if there is an unacceptable risk that the company contributes to or is responsible for certain types of behaviour.

The GPFG's guidelines for excluding companies show that there is some money Norway says no to. There are some products and some types of behaviour the GPFG's owners do not want to be involved in, whether or not they contribute to financial return.

In 2015, the Ministry of Finance decided that the responsibility for excluding companies, based on criteria laid down by the political authorities, should be transferred to Norges Bank. The Executive Board's decisions are based on recommendations and assessments provided by the Council on Ethics, which is independent of both the Ministry and Norges Bank.

Chart 10: Exclusions are not insignificant

At the beginning of 2018, 133 companies, corresponding to a market value of around NOK 200 billion, had been excluded from the GPFG.[8] This is a substantial amount, but only a small share of the fund.

There is an inherent paradox in using exclusion as a responsible investment instrument as it transfers ownership shares to investors who do not regard the company as problematic in the same way. Being invested in the company and at the same time exercising active ownership is therefore a possible alternative to exclusion.

The ethical guidelines introduced in 2004 also contained guidelines for Norges Bank's exercise of ownership rights. Ownership rights were to be used to promote a long-term financial return. And since then, the mandate has been based on the assumption that a long-term return is dependent on sustainable developments and well-functioning markets. This is particularly applicable to a large, diversified fund with a long-term perspective such as the GPFG. The fund's long-term return will reflect global value creation.

Responsible investment in practice is today a key part of the investment management mandate issued by the Ministry of Finance to Norges Bank. Responsible investment is to a large extent about promoting well-functioning markets and influencing the fund's investee companies. Norges Bank complies with international standards and contributes to their further development. Norges Bank Investment Management (NBIM) votes at shareholder meetings at almost all the companies in the GPFG's portfolio and is in regular dialogue with close to 1000 of the companies in which we are most heavily invested. As provided for in the management mandate, NBIM will in some cases divest from a company. In line with the mandate, Norges Bank performs this task independently. The Ministry of Finance is not involved in individual investments or the exercise of ownership rights.

The GPFG pursues a responsible investment policy to increase the GPFG's expected return or reduce the risk associated with the fund's investments. We also consider that a systematic approach to responsible investment will contribute to maintaining confidence in Norges Bank as manager of the GPFG.

Conclusion

After 20 years, we have gained some experience of risk in our management of the fund. We have for example experienced two of the worst periods in equity markets since 1900. This experience will be useful the next time financial markets fall sharply. But next time will also be different in many ways.

Norway, through the GPFG, owns a small part of listed companies' share of global value added. Our investments have made solid gains. We have been willing to take on risk and have been compensated for it.

History has taught us that we must be prepared for falls in market value that are both deep and prolonged. In a crisis, there will be no place to hide for a large global fund. Managing a crisis is demanding, but for a financial investor, it is essential.

Although we must seek to limit the risks we encounter, we must at the same time reiterate that some risk is worth undertaking. Broad support for important principles in the management of the GPFG is a strength that will stand the fund in good stead the next time turbulence erupts in financial markets.

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1 Dimson E., P. Marsh and M. Staunton (2018) Credit Suisse Global Investment Returns Yearbook 2018/E. Dimson E., P. Marsh and M. Staunton (2002) Triumph of the Optimists: 101 Years of Global Investment Returns, Princeton University Press.

2 Dimson E., P. Marsh and M. Staunton "Long-Term Asset Returns" in Financial Market History, edited by D. Chambers and E. Dimson.

3 The figures are annual figures and the percentage falls are therefore smaller than for measurements from the peak to the trough on a monthly basis.

4 The Government Petroleum Fund, Annual Report 2002. Norges Bank.

5 See Discussion note 1/2017, International diversification for long-term investors, NBIM

6 Dimson E., P. Marsh and M. Staunton: Credit Suisse Global Investment Returns Yearbook 2018. Dimson E., P. Marsh and M. Staunton. Triumph of the Optimists: 101 Years of Global Investment Returns, Princeton University Press, 2002.

7 ibid.

8 Estimated market value in the fund's benchmark index if the companies had not been excluded.