Investing for the Long Run, 2011 Investment Strategy Summit of the Government Pension Fund Global (GPFG)

Oslo, November 8, 2011

The Ministry of Finance's Strategy Council, chaired by Professor Elroy Dimson of London Business School, convened the 2011 investment strategy summit of the GPFG which was held in Oslo on November 8, 2011. The Strategy Council, which also includes Dr Antti Ilmanen of AQR Capital Management, Mr Øystein Stephansen of DnB NOR, and Professor Eva Liljeblom of Hanken School of Economics, brought together world leading experts to debate three subjects of immediate relevance to the management of the GPFG and of many other investment funds.

The Investment Strategy Summit was opened with an address from the Ministry of Finance's State Secretary, Hilde Singsaas. The State Secretary welcomed to the summit the speakers and also the wide range of institutions represented by the participants in the audience. The State Secretary emphasised the importance of the good management of the GPFG for its wide range of stakeholders. She said that the Fund, which has a value in excess of $500 billion, is expected to double in size over the next ten years and that it had shown that it was able to tolerate a high degree of volatility, by adhering to its long term strategy despite the losses of 2008. These were equivalent to one year's expenditure by the Norwegian government and were fully recovered over the next two years. The State Secretary reminded the participants that the Government has very high ambitions for the Government Pension Fund, namely that it should be the best managed fund in the world. This entails identifying leading international practice in all aspects of fund management and striving to achieve this within the GPFG.

The first session of the summit considered how the GPFG could "harvest" liquidity premia which appear to be routinely (but irregularly) paid up by shorter term and cash-constrained investors. The second session considered how the investment strategy of the GPFG could be adjusted to better exploit evidence that risk premia seem to vary through time. The third session considered debates about the risk and return characteristics of investments in emerging market equities, so as to help the GPFG determine its appropriate exposure to emerging market equities and how it should be managed.

Each of the topics was debated and in each case judgements have to be made with respect to the GPFG's investment strategy. The nature of these

judgements was highlighted by the presentation from Dr Sung Cheng Chih, until recently Chief Risk Officer for the Government of Singapore Investment Corporation (GIC). Dr Sung emphasized the need for investors to decide not just how much risk they are comfortable taking but also which set of competing (and shifting) views they find most credible. The conference provided a forum to test and explore the evolving investment philosophy and investment beliefs for the GPFG and also the governance issues which are highlighted by several of the investment proposals that were discussed.

Session 1: Harvesting liquidity premia

It has long been argued that investors in private investments should demand a premium for illiquidity. The expectation of such a premium encourages an allocation by long term investors to private investments. However, there is now striking evidence, from different markets, that there is also a premium paid for the relative illiquidity of groups of quoted stocks within individual equity markets.

Liquid investments are the natural habitat of the short term investor because they enable an investor to trade whenever they wish. But as Professor Roger Ibbotson from Yale School of Management, the first speaker, emphasised, “liquidity is not free”. Investors pay a price, and so sacrifice future performance, when they invest in more liquid investments. This was illustrated by the data from quoted equity markets presented by Professor Ibbotson. He argued that the liquidity premium is distinct from the value and size premia in equity markets, and he showed that within different categories of value and growth stocks, and within different market capitalisation size bands, less liquid stocks show a consistent pattern of outperforming their more liquid (i.e., more heavily traded) peers. He said that a well diversified, rules-based equity portfolio which sought to exploit the liquidity premium should be no more volatile than the market portfolio. His analysis also showed less liquid stocks outperforming in bear markets and tending to have a low beta. In addition, Professor Ibbotson showed that when stocks are grouped by liquidity, this ranking shows some tendency to mean revert, with less liquid stocks becoming more liquid and vice versa.

Professor Ibbotson argued that a long term investor, such as the GPFG, which does not have a short term need for liquidity, ought to be able to profit from a patient approach to these opportunities. He said that the GPFG should not be suffering the performance burden associated with investing predominantly in the most liquid securities. An investor should

work out the amount of liquidity that is appropriate to its needs, and should manage it. Professor Ibbotson said that there was a tremendous benefit available from managing liquidity.

Professor Ibbotson's approach drew a few sceptical questions from some members of the audience. He conceded that his estimates of the betas of the less liquid equity portfolios might be biased downwards, but they are, he said, clearly less than one. Transaction costs can be reduced by low turnover, by passive trading strategies, by holding a large number of securities (around 1,000 securities in his U.S. portfolios), and also by a tendency towards mean reversion in security level liquidity. He said that investors pay dearly for preferring to hold brand names in the equity market and that the GPFG should be profiting from, rather than paying for, this widespread preference.

The second presenter, Professor Andrew Ang from Columbia Business School, gave a broader review of how an investor should approach liquidity and illiquidity. He described four ways for investors to capture illiquidity premia. First, they can make aggregate high level strategic allocations to illiquid or private asset classes. Second, they can engage in high level dynamic strategies, for example buying equities, as an asset class, when others want to sell. Third, very large investors, such as the GPFG, can use their inventory to operate as a market maker, supplying liquidity (i.e. buying investments) when others want to sell; and absorbing liquidity (i.e. selling investments) when others want to buy. Fourth, they can choose to invest in less liquid securities within an asset class, thereby engaging in liquidity security selection, as recommended by Professor Ibbotson.

Professor Ang emphasised that the GPFG has a comparative advantage in harvesting liquidity premia because it should continue to enjoy positive net cash flow for more than a decade. He argued that the GPFG is already successful in harvesting a liquidity premium through its counter-cyclical rebalancing policy, by which 60% of the Fund is invested in equities and 40% in bonds (including up to 5% property). When equities have performed poorly relative to bonds, the rule forces more purchases of equities and vice-versa when equities have performed well. Professor Ang cited 2008-9 as an example of when the rebalancing rule worked strongly in the Fund's favour, with the fund buying equities persistently as they fell in value. Professor Ang expressed the view that the rebalancing rule has a big, positive impact on the Fund's performance because it is done at the overall portfolio level.

Professor Ang further recommended that the GPFG consider a more pro-active approach to harvesting the liquidity risk premium, by going further than the existing rebalancing rule. He suggested that the GPFG should explore mean reversion in simple time-varying valuation rules and separately, rebalancing strategies using predictable factor weights. Acknowledging security level liquidity issues, Professor Ang said that GPFG should replace the standard published indices as benchmarks with bespoke indices which had broad market economic characteristics, but which would help GPFG to provide liquidity to those forced to follow standard indices. At present the GPFG unnecessarily demands expensive liquidity to follow the decisions made by index composition committees, although this does facilitate transparency and accountability.

Professor Ang then reverted to the first and most evident way of accessing a premium for investing in illiquid investments, by investing in private investments, such as real estate. This has been subject to extensive analysis for the GPFG, and a tentative start has been made by establishing an in-house real estate team and a decision to allocate up to 5% of total assets into direct property investments.

Professor Ang emphasised that just because an investor has a long time horizon, it does not necessarily mean that it is optimal to invest in illiquid asset classes. Illiquidity imposes an opportunity cost on an investor, most obviously in the difficulty to rebalance in response to market moves. He argued that illiquidity ought to cause an investor to be more risk adverse with both liquid and illiquid investments. Illiquidity always makes an investment less attractive and Professor Ang quoted research he has co-authored, indicating that the illiquidity premium investors should require is high.

Investors must manage their liquidity needs appropriately. Professor Ang used the example of the impact of the market turmoil of 2008 on Harvard University's endowment as a cautionary example. "As Harvard found out in 2008, you cannot eat illiquid assets." In reply to a question, he said that in his opinion the shortcomings at Harvard were not due to the role of the Harvard Management Company, the investment manager, which has generated excellent returns given its mandate, but of University-level asset liability management. The University found out the hard way that when asset prices fell, correlations between all assets rose, the supply of liquidity diminished and that a given dollar value of drawdown represented an increased share of the fund.

Mr. Øystein Stephansen from DnBNOR then discussed the GPFG's ability to harvest liquidity premia. He mentioned the absence of specific liabilities, the Fund's positive cash flow and its ownership by the government of Norway as facilitating a higher than average tolerance of volatility. But he also emphasised the need to maintain the confidence of public opinion in Norway and to be conscious of the tendency for liquidity-providing investment strategies to suffer occasional large losses. Strategies which are likely to perform poorly during "bad times" need particularly careful justification. Despite this he argued that sovereign wealth funds which have little immediate need for cash flow, such as the GPFG, are uniquely well positioned (as compared with endowments, insurance or pension funds) to take risk and to supply liquidity.

Questions from the audience explored these themes further. It was pointed out that illiquidity premia are time varying and that the empirical evidence is better for strategies aimed at exploiting differences in liquidity within markets rather than between markets. One example is the clear difference in return that can be available from on- or off-the-run Treasury bonds. By contrast the empirical evidence for a premium for illiquidity is much less evident in private equity or real estate, if proper allowance is made for leverage. Furthermore, investor demand for assets not marked-to-market may even reduce the illiquidity premium available in some unlisted assets. In summary, Dr David Chambers from Cambridge University's Judge Business School emphasised that it is difficult to identify and capture the premium paid for illiquidity. Exposure to illiquidity is most likely to increase exposure to surprising short term losses but to increase prospective long term returns.

By way of conclusion:

- There was broad agreement that liquidity premia should be harvested by the GPFG. The Fund's characteristics make it a "natural buyer" of less liquid investments.
- This could be done in different ways, through investments in listed and, or, private investments. Both have advantages and also disadvantages.
- Exposure to illiquidity at security level may lead to exposure to illiquidity as a market-wide risk premium, introducing an added risk of large losses at times of liquidity crises. This "tail" risk would need careful management.

Session 2: Time variation of risk premia

The second session addressed time variation in risk premia, and in particular in the equity premium. It has become more widely accepted that at some times the equity market is cheap in the sense that it offers above average expected returns, while at other times it is expensive and so offers below average expected returns. This has rarely been doubted by asset managers selling services to investors, but it represents an enormous change in academic attitudes, though it is still to a degree controversial. The evidence that risk premia vary over time is not confined to the equity market, but also includes corporate bonds, real estate, private equity and commodities and, as discussed in the first session, liquidity. This has important implications for how strategy is set by investors, which historically has normally assumed a constant equity risk premium, for example of 4% per year, with a fixed assumption for volatility.

The topic was introduced by Professor Rajnish Mehra from Arizona State University's W. P. Carey School of Business. Professor Mehra, co-author with Professor Edward Prescott, of the seminal 1985 paper "The Equity Premium: A Puzzle" contrasted the volatility of year-by-year US equity returns relative to Treasury bill returns since 1889 with the historic persistence of such excess returns when measured over rolling 20 year periods. But, he asked, "Is this excess return predictable?" He said that variations in the price-dividend ratio reflect either changes in expected discount rates or variations in the expected growth rate of future dividends. During the 1960s, 70s and 80s the prevailing academic paradigm was that stock prices fluctuated around a random path and so changes in the price-dividend ratio must reflect changes in the path of future dividends. In the last 20 years, it has become widely accepted that excess returns are predictable and that changes in valuation ratios reflect changes in discount rates rather than changes in future company earnings or dividends. This is the subject of Professor John Cochrane's 2011 presidential address to the American Finance Association, entitled "Discount Rates". In it he summarises research that has persuaded many financial economists that the equity premium fluctuates and is not constant and that time-variation in market valuation ratios, which was once thought to reflect changing growth expectations (with an unchanging ex ante required risk premium), is thought to now reflect changing required returns and discount rates.

Professor Mehra showed charts summarising evidence of some predictability in equity market excess returns. A key issue is whether the

indicators of cheapness and dearness of markets can be modelled reliably and specifically whether they follow a stationary mean-reverting process. Research has produced contradictory results, and is sensitive to the periods covered (and in particular whether 1973-75 is excluded). Furthermore, the models that perform well in-sample often do poorly predicting out-of-sample. The critics maintain that the models do not seem robust and that the evidence is fragile. Moreover, there is still no convincing theoretical justification for predictability. Professor Mehra concluded that translating the evidence for return predictability into an operational strategy is no different from market timing. Investors embarking in this direction should proceed with caution. Furthermore, measures such as Tobin's "q" or price-earnings ratios are inadequate indicators of value. However, Professor Mehra did point to recent developments in capital theory, incorporating both intangible capital and taxes, as a promising avenue which may give a theoretical basis for explaining under- and over-valuation in capital markets.

The next presenter, Dr. Antti Ilmanen, author of Expected Returns, Wiley 2011 and managing director AQR Capital Management, brought the perspective of a successful hedge fund manager to this debate. He re-emphasised that accumulating empirical evidence had shifted the debate between constant versus time varying expected returns for different asset classes. This means that long horizon investors (such as the GPFG) have a natural edge in contrarian asset allocation (market timing). This advantage may arise from a more stable risk tolerance than the average investor, or from ability to provide liquidity when aggregate demand for liquidity is high. Either explanation should enable liquid long term investors to profit from their relatively privileged position. Dr. Illmanen emphasised that this is not easy. It should be done with humility, but systematically and diversified across many fronts and using multiple indicators as signals. A fundamental difficulty is to avoid undiversified risk taking (market timing is often undiversified) and to ensure that it does not degenerate into the trap of pro-cyclical investing. To be successful, the fund would need to review its internal resources, governance, accountability and a suitably long horizon over which to evaluate success (or the lack of it).

The third presenter, Dr. Sung Chen Chih, until recently chief risk officer for the Government of Singapore Investment Corporation (GIC), developed these themes. He said that the growing recognition of time varying risk premia gave rise to new approaches to portfolio construction. The traditional model was based on equilibrium risk and return assumptions which led to stable asset allocations, with rebalancing back to benchmark allocations over time. Acceptance of time varying risk

premia has over time spawned a number of alternative approaches, each depending on a somewhat different set of investment beliefs. By way of illustration, he presented three such approaches.

The first approach is a valuation-based approach, using value indicators which are thought to exhibit mean reversion. The goal with this approach is to identify valuation extremes and, when appropriate, to overweight cheap assets and sell or underweight expensive assets. But if nothing stands out, to stay neutral. The second approach arises from a belief that the market cycle is driven by the liquidity cycle. It is to let the interaction of market liquidity (i.e., loose or tight) and of investors' liquidity preference (i.e., high or low) influence strategy counter-cyclically. For example, when liquidity preference is high and market liquidity tight, cash might be favoured, but when liquidity preference is low and market liquidity loose, equities might be favoured. The third alternative is to eschew dynamic risk taking and to try to ensure through the risk parity approach that the portfolio performs reasonably well in all major macroeconomic scenarios. Risk parity investing aims to create a risk-balanced portfolio using different return sources with lower reliance on equities, but it requires significant use of leverage to ensure that each asset class contributes equally to portfolio risk without compromising on expected returns.

Before pursuing one of these approaches, governance issues would need close review. At present, the manager (NBIM) is responsible for managing individual investments relative to a market-based strategic benchmark. Most of these alternatives would involve discretion to alter the market exposure of the fund. The governance implications for the risk budget, tracking error and the ownership and the responsibility for decision making between the Ministry of Finance and NBIM would need careful review.

Professor Elroy Dimson, chairing this session, summed up, in a stylised fashion, by contrasting the formula driven approach to exploiting time varying risk premia of Professor Mehra, with the deliberately gradual approach of Antti Ilmanen, who said that market timing is more easily done "little and often", and with a third approach, described by Dr Sung, suggesting that the GPFG should adjust asset allocation only at extreme valutation levels.

Professor Campbell Harvey picked up this theme in a discussion of expected returns. He showed data from the Duke University CFO survey of finance officers' expectations for the ten year forecast absolute and

excess return over ten year Treasury bonds of the S&P 500 index. Although the absolute expected return has diminished, in line with interest rates over recent years, the expected equity risk premium shows some, but not much variation, within a range of 2.5% and 4.5% per year.

By way of conclusion, the GPFG's existing rebalancing strategy puts a discipline on asset allocation and risk taking, has a contrarian flavour and helps to capture a liquidity premium.

- The current rebalancing rule could be extended to exploit more of the potential for contrarian investing by the GPFG.
- However, further development of contrarian investing would probably imply increased risk taking.
- Furthermore, exploiting time variation in risk premia, beyond a mechanical rule, would require changes in the current governance structure, including NBIM discretion to alter the Fund's market exposure.
- Buying cheap and selling expensive is an enticing principle, but challenging to achieve in practice, so needs to be approached with caution.

Session 3: Emerging markets

Emerging markets provide diversification benefits to investors and so should form part of a global equity strategy. Key issues for investors are the characteristics of emerging equity market risk and the compensation investors are likely to receive for assuming this risk.

Chairing this final session, Professor Eva Liljeblom introduced three different perspectives on the risks and rewards of investing in emerging market equities. The first approach was rooted in the different risk factors affecting emerging equity markets, whether they were diversifiable and whether they should be rewarded with a premium return. The second drew on extensive analysis of the historical record of emerging market equities and its relationship to the historical record for developed equity markets as well as its relationship to the record for economic growth. The third was based on a macro-economic perspective, with particular reference to China.

The first presenter was Professor Campbell Harvey of Duke University's Fuqua School of Business. He explained that the undiversifiable risk characteristics of investing in emerging markets ought to mean that these markets still offer a premium rate of return. These risks include illiquidity, market segmentation, occasional large losses, and a risk of contagion

(time varying correlations). Periodic crises and explosive volatility should be regarded as a “known unknown” of emerging market investing. A patient long term investor has the ability to diversify some of these risks over time, but also needs to be aware that, often due to the low quality of institutions in these markets (such as legal system, bureaucracy, etc.), not all emerging markets can take full advantage of their growth opportunities.

Professor Harvey also warned investors to be wary of naive extrapolations of recent very high growth rates into the distant future and to be aware that part of the “tail” risk of investing in emerging markets cannot be corrected by diversification. He advised that “tail protection should be a routine part of asset management” and that it is not acceptable for investors to be concerned only with expected returns and volatilities of asset classes and to ignore skewed distributions of return. Despite this he said that a market cap weight to emerging markets (currently around 12% of global equities) should not automatically be the default weight for investors. Alternatives, such as GDP weights, which would be much higher, should also be taken into account.

Professor Elroy Dimson followed this. He argued that enthusiasts favour emerging markets because of their increasing importance in the global economy; their attractive track record; their apparently diminished risk; their diversification benefits; and the higher rates of return which are underpinned by faster economic growth. But, he asked, “Is this all true?”

The impressive investment performance, relative to the MSCI World index, of the MSCI Emerging Markets equity index since inception at the end of 1987 owes much to its start date. The preceding 13 years is covered by the S&P IFC emerging markets index, and when this is included, emerging market equities are shown as having underperformed the (developed) world index since 1975. Broken down by decade, emerging markets performed roughly in line with the world index from 1976-9, underperformed the world index in the 1980s, were in line in the 1990s and substantially outperformed since 1999. The volatility of individual emerging equity markets has declined over time, but the volatility of both the emerging market index and the world index has increased somewhat overtime. However, examination of the performance of emerging markets during the best and worst months for the world index illustrates that emerging markets are a geared play on the world index: when the latter does poorly, the emerging market index tends to perform even worse and vice-versa for months of strong world equity

market performance. The emerging market index has a beta of around 1.3 with respect to the world index, suggesting it ought to be rewarded with an extra premium return of 1.5% per year, if markets operate efficiently and are fairly priced. But at the same time, the correlation of these markets with the world index has increased from around 0.4 in the ten years before the mid 1990s to around 0.9 most recently. Even with these levels of correlation, an allocation to emerging markets still provides useful diversification benefits in the more volatile environment.

Finally, Professor Dimson reviewed research on the link between economic growth and equity market performance. Looking at longer and shorter term data, compiled with his colleagues Paul Marsh and Mike Staunton, stretching back over 110 years for 19 countries, and for shorter periods for another 64 countries, Professor Dimson showed that there is, perhaps surprisingly, no strong relationship between economic growth and real equity returns. The reason he surmised is that the benefits of faster growth accrue disproportionately to employees, managers and the entrepreneurs and owners of private companies rather than shareholders of listed companies. Furthermore, faster growth will already be reflected in market prices if that faster growth rate is well established. But while recent equity market performance can be used as an indicator of future economic growth, forecasts of economic growth are not useful predictors of equity market performance – unless they incorporate perfect foresight.

In summary, Professor Dimson argued that he saw no convincing reason to overweight emerging markets, relative to their market capitalisation weight in global equities. Professor Harvey, by contrast, considered the market cap weight to be just one possible reference point, which understates the importance of emerging markets in the global economy and which should be considered alongside other measures such as GDP weights. He thought that the premium returns expected from non-diversifiable factor risks, separate from their higher beta, strengthened the case for a higher weighting in emerging market equities. But, he cautioned, exposure to tail risk needs careful consideration.

Finally, Professor Arne Jon Isachsen of BI Norwegian Business School contrasted the 12% weight of emerging markets in the global index with their 31% share of world GDP. He discussed the prospects for financial liberalisation in China. (Professor Harvey had identified liberalisation as an important catalyst for GDP growth and equity market performance). The Chinese, argued Professor Isachsen, would not welcome convertibility of the yuan for transactions on the capital account as it would remove a

mechanism for financial and economic control, which sits alongside the degree of direction the state still exercises over the allocation of credit, with the burden of non-performing loans subsidised by the gap between deposit and lending rates of interest. Full convertibility would also introduce unwelcome uncertainty about the financial behaviour of domestic investors. Professor Isachsen took up the theme that global investors already obtain exposure to emerging markets, and specifically to China, through investments in multinationals which earn profits in these markets. This meant that the GPFG's exposure to emerging markets will be greater than the 10% direct allocation to their equities would suggest. However, Professor Isachsen cautioned that the GPFG needed to weigh up whether the prospect of good performance from direct investments in Chinese companies outweighed the potential downside in a crisis.

Finally, there was a discussion prompted by the audience about ethical investing and whether blacklisting individual companies helps to promote positive change in corporate behaviour and whether it would be more effective to avoid entire countries rather than individual companies. Professor Dimson said that the criticism is that negative screening may force the Fund, which does care about business ethics, to sell at a reduced price to an investor who does not care. He contrasted this approach with direct engagement by equity investors, when investors can ensure that their ownership can help set standards of corporate governance and behaviour.

By way of conclusion:

- Emerging equity markets provide international diversification and thus form a natural part of a global equity strategy.
- The risk characteristics of emerging equity markets are not fully diversifiable and can be most uncomfortable. However, they ought to offer premium expected returns. These are especially attractive to long-term investors who can manage these risks over time.
- The track record of emerging equity markets is less impressive than many seem to think, emerging markets have the potential to disappoint over long periods of time.
- Higher expected economic growth does not necessarily imply higher realized financial returns.

Peter Stanyer

peter@peterstanyer.com

November 23, 2011