**Risk Factors/Risk Management**

Panelists used their research and investment experience to explore various risks facing both private and public investors. The benefits and limits of various risk management strategies were also discussed.

**Dimitri Vayanos**, Professor of Finance at the London School of Economics, presented his research on market anomalies and investment strategies. He reviewed the literature on two of the most prominent market anomalies, momentum and reversal, and argued that investment strategies exploiting these phenomena have been mainly data-driven and hard to reconcile with rational behavior. To address this lack of a conceptual framework, Professor Vayanos presented a model for understanding the relationship between momentum, reversal, and value. His research indicates that momentum, reversal and value can be driven by flows between investment funds. Implications for investment strategies are that it is good to combine momentum and value, and even better to use additional information on flows. Investors can also benefit from taking a long-term investment horizon and emphasizing value in their analysis. In order to mitigate the effects of flows investors should use long-term measures of risk and better measures of tracking error.

**Heung-Sik Choo**, Director of Reserve Management Strategy Division at the Bank of Korea (BOK), shared his experience in risk management of foreign reserves. He gave an overview of the BOK’s reserve and risk management practices, as well as important lessons learned by the institution. From the 1970s until the mid-1990s, the BOK emphasized liquidity and safety and engaged in “cash flow management.” At the end of this period it began to employ a “portfolio management” approach and thus focused on returns, as well as asset class and currency diversification. During the 2008 crisis, however, diversification strategies were limited due to contagion among asset classes and countries; the possibility of pro-cyclical asset allocation; and the difficulty in maintaining a long-term time horizon.

After the 2008 crisis attention increasingly focused on risk management. Current risk management practices include strategic asset allocation and active risk management. Strategic asset allocation includes defining neutral allocation among major asset classes with a focus on currency composition; asset class composition and duration target; and limiting various types of risk and exposure. The active risk parameters are defined as deviation limits versus the benchmark. The risk factors include the market risk, credit risk, liquidity risk, and risks linked to derivatives. Mr. Choo also mentioned some new approaches in asset allocation, and limitations to traditional quantitative risk measures.

**Alexander Dyck**, Professor of Finance and Business Economics at the University of Toronto, hypothesized that there are special return opportunities and risks for SWFs and other large long-term investors. Professor Dyck found that larger plans typically achieve greater returns. His research showed large pension plans achieving higher returns in private equity and real estate sectors than smaller pension plans. Furthermore, he found the existence of cost savings from using internal management. His research indicated, however, that weak governance and state ownership can be obstacles to achieving returns and the benefits of scale.
Philippe Ithurbide, Global Head of Research, Strategy, and Analysis at Amundi, discussed the negative consequences that emerged during the crisis from employing a diversification risk management strategy. Mr. Ithurbide began by arguing that in 2007 the world experienced a liquidity crisis; in 2008 a financial crisis; in 2009 a balance sheet recession; and 2010 – 2011 was increasingly becoming a debt crisis. He then discussed the negative dimensions of investors’ push for greater diversification. Some invested in asset classes with few market makers. As a result, when the crisis surfaced, some market-makers disappeared. The desire for greater diversification also led some investors to invest in opaque, illiquid assets, such as some CDO and CDO squared products. Moreover, greater diversification led some investors to more readily accept higher leverage in some asset classes (usually the less liquid ones). When the crisis began and asset prices fell, a fire-sale remained the only course of action for leveraged investors.

Elroy Dimson, Emeritus Professor of Finance at the London Business School, presented his research findings on various kinds of risk premia. In regards to bond markets, he noted that bonds with varying maturities carried different risks and maturity premia. Investing in bonds in the US market thus carried more risk than before. A similar situation has also evolved in the UK market. As for equity markets, he showed that the equity had fallen remarkably and experienced deflation. Thus the prediction that equity investments produced long-term reward due to higher risk had temporarily vanished.

While small caps have performed better than large caps in almost every country, Professor Dimson noted that recently in the US market stocks of small companies performed worse than large companies. This contradicted both empirical and historical evidence, as well as theory. Besides his finding on investments within a single market, Professor Dimson reported on his research that used 19 markets to construct an investment portfolio. His findings indicated that investments in low-yield countries performed worse than investments in high-yield countries. In addition, low-inflation countries generated poorer real bond returns than high inflation countries.