

Introduction¹

This volume is a collection of papers presented at the Third Public Investors Conference, which was jointly organized by the Bank for International Settlements (BIS), the European Central Bank (ECB) and the World Bank (WB). This event, which took place on 2–3 November 2010 at the BIS's head office in Basel, brought together over 80 participants from more than 50 institutions comprising central banks, sovereign wealth funds and public pension funds.

The main aim of the current as well as previous Public Investor Conferences has been to create a forum where academics and private and public sector investment professionals can meet to discuss and ponder the issues of specific relevance to public sector investors. It is well recognized that public institutions differ markedly from their private sector peers in their investment activities. Investment rationales, preferences, eligible investments, governance structures and accountabilities as well as aspects relating to the availability of human and technical resources distinguish public investors. These idiosyncrasies have profound effects on how portfolio and risk management activities are organized and performed in public sector institutions.

Having discussed initial reactions to the financial crisis at the Second Public Investors Conference held at the World Bank in Washington DC, the 2010 Conference focused on how public investors are revising asset allocations and investment processes in response to the new financial market environment. Faced with high growth rates in foreign reserves and other pools of publicly managed funds, public investors are beginning again to discuss broader diversification of assets. Judging from the contributions to and discussions at the conference, central banks are concentrating their search for diversification opportunities on investment alternatives among sovereign obligations, including inflation-linked instruments and investments denominated in currencies other than those represented in the SDR basket. At the same time, public investors are becoming more aware of possible tension between what is optimal at the level of an individual investor and what might be required from the perspective of stability of financial markets. In terms of methodologies and techniques, similar to other institutional investors, public investors have accelerated efforts to develop and implement approaches for the management of market and credit risk that take on board lessons from the financial crisis. Also, further improved techniques for and oversight of active management of public funds received considerable attention at the conference.

In his keynote address, Professor Robert Z Aliber (International Economics and Finance, Booth School of Business, University of Chicago, emeritus) set the stage for the conference by describing four cycles of cross-border money flows since the early 1970s. These flows led to increases in the values of the currencies of the countries that experienced these money inflows, increases in their current account deficits, and increases in asset prices in these countries. These money inflows primarily financed increases in consumption spending. The countries that experienced these money inflows were in the “sweet spot” as long as the increase in indebtedness was larger than the interest payment on the indebtedness. These patterns of cash flows were not sustainable, and when they reversed, financial crises often followed.

Brief summaries of the papers that formed the main body of the conference are provided below. These contributions primarily focused on asset allocation from the specific

¹ This introduction was prepared by Joachim Coche (BIS), Ken Nyholm (ECB) and Gabriel Petre (World Bank). Comments by Robert N McCauley (BIS) are greatly appreciated.

perspective of public investors, aspects of active portfolio management, and credit risk modeling.

Asset allocation

Robert N McCauley and Jean-François Rigaudy of the BIS discuss in their contribution how the recent global financial crisis has impacted the asset allocation of central bank reserves. Using various data sources – inter alia, US authorities' annual surveys and data collected by the BIS – the authors analyze the extent to which reserve managers have reduced their exposures to bank debt and US agency debentures. They also report on sharp cutbacks in securities lending activities by central banks. Looking forward, the authors discuss the question of whether the crisis experience has halted the efforts of official reserve managers to diversify holdings more broadly. They argue that, given the high, and as a result of the crisis even increased, costs of holding reserves, the reversal in exposure to more credit-risky, less liquid instruments observed during the crisis may prove temporary. However, reserve managers will explore reserve diversification more cautiously than before the crisis. In particular, the limited size and liquidity of many alternatives to US Treasuries will pose ongoing challenges.

Myles Brennan, Adam Kobor and Vidhya Rustaman of the World Bank discuss the potential benefits of international diversification for high grade sovereign bond portfolios. To assess the potential diversification benefits, the authors decompose the returns on G7 sovereign bonds into global and local factors. They find that on average 75–80% of the bond returns are determined by global factors, whereas about 20–25% remains determined by local factors. Thus, while the sovereign bond market is integrated to a relatively high degree, there is still some room for diversification. The volatility reduction obtained by diversifying across the G7 issuers has in general been shrinking over the past decade, but local factors have gained in importance over the past two years for European issuers. Furthermore, in the light of the recent turbulence within the euro zone, the authors discuss diversification among sovereign obligations with a special focus on default risk. If an investor aims at enhancing expected return by going down the credit rating spectrum, diversification may mitigate the impacts of default risk to some degree.

José Luis Barros Fernandes and José Renato Haas Ornelas of the Central Bank of Brazil and Oscar Augusto Martínez Cusicanqui of the Central Bank of Bolivia propose a new methodology for portfolio construction that combines a Bayesian approach for formation of return expectations with a resampling approach for optimization. An application of this methodology to a sample of fixed income and equity markets in developed countries shows risk-return characteristics of the optimized allocations that are superior to those obtained with standard methods. The authors argue that the proposed approach is particularly suitable for long-term investors such as central banks and sovereign wealth funds, as it results in stable and well diversified portfolio allocations.

Carlos León of the Bank of the Republic (Colombia) and Alejandro Reveiz of the World Bank address portfolio choice for long-term investors. More specifically, they analyze how the presence of long-term serial dependence in time series of financial returns affects risk estimates for various horizons and consequently impacts results from portfolio optimization. For example, they show the extent to which optimal allocations are different for one- and 10-year investment horizons in the presence of long-term serial dependence. Technically, the authors employ a version of the so-called rescaled range analysis, a statistical technique to detect fractal structures in time series, to derive a scale-dependent covariance matrix. The techniques and results may be of particular interest to long-term investors such as central banks, pension funds and sovereign wealth managers, since they typically face a choice

between asset classes that exhibit serial dependence to quite differing degrees – as is, for example, the case for emerging and developed market exposure.

Ricardo Selves and Marcin Stamirowski of the European Commission discuss the inclusion of inflation-linked instruments in a sovereign bond portfolio. Using linkers' market prices and euro sovereign securities, they derive both the real and nominal zero coupon bond price curves. More specifically, they use the Heath-Jarrow-Morton (HJM) framework to model the time-series evolutions of the inflation and the real and nominal zero coupon bond price curves. Finally, they use the estimated term structure parameters to validate the model via hedging analysis.

Marie Brière of the Université Libre de Bruxelles and Amundi and Ombretta Signori of Amundi focus on strategic asset allocation for investors seeking to hedge inflation risk. Using a vector autoregressive model, they investigate the optimal portfolio choice for an investor with a fixed real return target at different horizons and a shortfall probability constraint. They show that the strategic allocation differs sharply across regimes. In a volatile macroeconomic environment, inflation-linked bonds, equities, commodities and real estate play an essential role, while in a stable environment, nominal bonds are the most significant asset class alongside equities and commodities. This paper was first presented at the Second Public Investors Conference in 2009.

George Hoguet and Solomon Tadesse of State Street Global Advisors examine the role that securities denominated in special drawing rights (SDR) could play in the management of large institutional portfolios. They demonstrate that such securities could reduce portfolio variance and could provide a convenient method of diversification. However, despite favorable risk-return characteristics, a private market for SDR-denominated bonds remains has not developed. The authors point to the role that central banks and sovereign wealth funds could have in the further development of SDR markets by investing in SDR-denominated deposits and bonds, denominating their accounts in SDR and borrowing in SDR. This paper was first presented at the Second Public Investors Conference in 2009.

Active management

Roberto Violi of the Bank of Italy discusses a framework for the optimal choice between active risk and passive, benchmark risk. To that end, the author employs an extension of a model suggested by Treynor and Black where the optimal mix depends on the assumed capacity of active managers to predict excess returns and to avoid unsystematic risks. A particular hurdle in the practical application of this model has been the difficulty of forecasting active manager excess returns with sufficient confidence. The author clears this hurdle by using a unique dataset of US dollar government bond portfolios actively managed by the national central banks in the Eurosystem on behalf of the ECB. It turns out that an important source of fund managers' outperformance – in addition to skill in anticipation of returns of the benchmark portfolio – is the ability to predict the sign of a fixed set of active portfolios.

Sam Nasybek of the World Bank and Scheherazade S Rehman of George Washington University explain and replicate returns of active currency managers by building an active currency replication index that optimally combines simple trading strategies defined in the literature. The study provides further evidence that the main trading strategies can explain a substantial portion of aggregate profits from active currency management. The results show that it is easy to replicate a diversified portfolio or a composite index of currency managers using simple currency trading strategies. Since public investors often rely on external currency managers, an active currency manager replication index can be a beneficial tool to evaluate the risk and performance of those managers, and thereby to contribute to good governance of public funds.

Credit risk modeling

Michael Jacobs, Office of the Comptroller of the Currency, develops a theoretical model for ultimate loss-given-default in the Merton (1974) structural credit risk model framework. He proposes an extension that allows for an independent recovery rate process, representing undiversifiable recovery risk, with stochastic drift. The comparative statics of this model are analyzed and compared with the baseline models having no independent recovery rate process. He validates the model in an out-of-sample bootstrap exercise using a large sample of losses by 800 defaulting firms in the period 1987–2008. He concludes that the model is worthy of consideration by risk managers, as well as supervisors concerned with advanced internal rating-based approaches under the Basel Capital Accords.

Daniel Rösch of the University of Hanover and Harald Scheule of the University of Melbourne provide an empirical study of the historical performance of credit ratings for securitisations. They find that credit rating agencies did not sufficiently address the systematic risk of the underlying collateral pools or the tranche structure. Furthermore, impairment risk, ie the risk that a securitization violates contractual payment obligations, is underestimated during origination years and years with high securitization volumes. Credit rating agencies also tend to measure a too low impairment risk level when fee revenue is high. Finally, securitization ratings are unable to predict impairment risk.