

Abstracts

Time Series Analysis of Risk Asset Prices with Asymmetric Distribution

Hidetoshi Mitsui

This study is an empirical analysis focusing on the asymmetric distribution of the rate of returns. It has long been known that the rate of returns has a fat-tailed distribution rather than a normal distribution. Therefore, error terms in ARCH-type models, which are used for time-series analyses, are often postulated to be something other than those in normal distributions. Also, in many prior studies, a greater correspondence has been shown when a higher kurtosis is used for the distribution of error terms compared with in a normal distribution. This study, therefore, uses a standardized skewed-Student t distribution for error terms.

At the same time, the current empirical analysis will also focus on long memory in volatility. If long memory in volatility existed in the stock markets, futures and options with distant delivery months could be priced more accurately. In order to understand long memory, the Fractionally Integrated GARCH (FIGARCH) model of Baillie et al. (1996), and the Fractionally Integrated Exponential GARCH (FIEGARCH) model of Bollerslev and Mikkelsen (1996) have been used.

This study focuses on the following points in particular: (1) whether stock-price volatility follows the stationary long memory process, the nonstationary long memory process, or the short memory process; (2) whether there is asymmetry between the rate of returns and volatility; and (3) whether it is effective to use an asymmetric distribution for a stock-price-related time-series analysis. For an empirical analysis of risk assets, data from the Tokyo Stock Price Index, the Nikkei Stock Average, and the JPX-Nikkei Index 400 is used. The data pertains to the period from January 2010 onward, which is when the Tokyo Stock Exchange introduced its Arrowhead trading engine.

Sustainable Development Goals and Integrated Reporting

Osamu Furusho

In September 2015, the United Nations (UN) adopted the 2030 Agenda for Sustainable Development. At the center of the 2030 Agenda are the Sustainable Development Goals (SDGs), which are a set of 17 goals common to the international society covering social issues including poverty, health and welfare, education, and climate change, and 169 targets. The aim of the SDGs is to realize a sustainable global society “leaving no one behind,” and the Agenda calls upon all UN member states to achieve targets relevant to them by 2030.

The private sector, in particular, is expected to take proactive roles and contribute to the SDGs. This calls for a change in corporate mindset, incorporating SDGs into the core business as a strategy for growth based on winning new business opportunities. In this context, integrated reporting, which is the reporting of the overall process of corporate value creation in the medium to long term, will be the driving force for SDGs. A synergistic effect can, therefore, be expected, in terms of exploring the new potentials of integrated reporting at the same time as improving the quality of engagement between businesses and society.

According to a recent survey, 154 of the 441 Japanese listed companies that publish integrated reports include information on SDG initiatives. However, the materiality of the SDGs, selected from among the various social initiatives undertaken by each company, is not yet sufficiently explained. This study, with a view to considering a new approach to support companies that hope to contribute to the achievement of SDGs, links the value-creation process and SDGs, and proposes a practical guide to incorporating relevant SDGs into an integrated report based on five steps, taking clues from a report jointly published last September by the International Integrated Reporting Council (IIRC), the Institute of Chartered Accountants of Scotland (ICAS), and the Green Economy Coalition.

The Controversy over On-Balance Sheet or Off-Balance Sheet Accounting of Pension Obligations for State Pension Systems

Aishi Imafuku

This paper addresses the controversy over on-balance sheet or off-balance sheet accounting of pension obligations for state pension plans around the world, referring mainly to the literature included in the Special Issue, Actuarial and Financial Reporting of Social Security Obligations, *International Social Security Review*, Volume 71, Issue 3, July/September 2018.

The controversy over the concept of pension obligations arises in choosing between two different approaches – the accounting approach, which has been proposed by the International Public Sector Accounting Standards Board (IPSASB), and the funding method approach, i. e. the actuarial approach. The issue is concerning the scope of state pensions and the concept of pension obligations.

The accounting approach limits the scope of state pensions to the pay-as-you-go (PAYG) and partially funded pension systems. The funding approach, meanwhile, provides a comprehensive examination of social security including state pension systems, which often include defined-benefit pensions on an unfunded basis as PAYG or on a partially funded basis.

The two approaches regarding the concept of pension obligations, therefore, contrast sharply. The accounting approach adopts accrued-to-date obligations, which are defined as the present value of all future benefits to existing pensioners and all accrued rights of current contributions/taxpayers. Pension assets on the left-hand side of the balance sheet include the existing reserve. Net obligations are the difference between the amount of accrued-to-date obligations and that of pension assets.

On the other hand, the funding approach regards the total amount of future benefits of current contributors and future contributions in addition to accrued-to-date obligations before discounting to present values. Pension assets consist of the future contributions of current and future contributors. If the amount of future benefits exceeds that of pension assets, the difference will be net obligations.

Nevertheless, International Public Sector Accounting Standards (IPSAS)

No.42, Social Benefits, defines pension obligations as the amount the public sector expects to incur in making the next social benefit payments, and require the governmental entity to report this on the balance sheet. The amount of pension obligations is much smaller than accrued-to-date obligations. This implies that the argument for the accounting approach in IPAS No.42 has given priority to the funding approach, which is built upon the rationale that social benefits are under societal contracts and social commitments with intergenerational transfers.