RAPORTTEJA

Eläketurvakeskuksen raportteja 2009:3

EXECUTIVE SUMMARY

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The outlook for the stock market and the challenges it creates for pension fund management

This is a survey of the literature and recent academic research on equity market risk premium. In addition to the risk premium survey the review provides brief guidelines to modern fund management from a pension fund's point of view. This is conducted by reviewing current practices and trends in institutional asset management.

Many types of equity risk premium concepts are given in the literature, even though they are labeled by the same general term. Chapter 2 begins by discussing the different types of equity risk premium. The equity risk premium is not a constant, but a time varying random variable. Since it is time varying there must be factors that are able to predict the equity risk premium. Valuation ratios that indicate the periods when equities are 'expensive' or 'inexpensive' are such variables. Since the ex post risk premium is reward for accepting risk, it is natural to ask, what is the origin of that risk? According to the modern finance theory the nature of macroeconomic risk, e.g. recession risk, drive risk premia in asset markets.

Chapter 3 applies the historical method to the equity risk premium analysis. In the analysis the historical equity risk premium, or realized returns between stocks and bonds (or stocks and cash), is projected forward into the future. Prior estimates of the historical equity premium draw heavily on the United States, with most researchers and textbooks citing just the American experience. Internationally U.S. stocks have produced the highest historical mean

return and equity premium. The historical equity premium calculated using U.S. data is likely to overstate the true (expected) premium because the U.S. stock market turned out to be the most successful in world history.

Second bias originates from the statistical properties of sample means. Reliable statistical inference is impossible, since the sample histories are far too short. The historical method provides inconsistent projections and exaggerates the required and expected risk premium.

Chapter 4 reviews three supply-side models. The first one is the Gordon growth model that is a model for determining the intrinsic value of a stock, based on a future series of dividends that grow at a constant rate. The second model decomposes equity return into several elements. These two models provide forecast to long-term equity risk premium. The third approach applies valuation ratios and it provides forecasts for short-term, e.g. 10-year, equity return and risk premium.

The first two models forecast 3–3.5 percent long-term risk premium relative to the short-term risk-free instrument as the geometric mean. The estimate is 150–200 basis points lower than the historical excess return. While forward-looking estimates cannot be precise, a long-term projection of the annualized equity premium involves making an adjustment to the historical record for components of performance that cannot be regarded as persistent. Without further expansion in the valuation ratios, this source of historical performance cannot contribute to forward-looking equity premiums.

The current valuation ratios are at unusual levels in the U.S., with a low dividend-price ratio and high price-earnings ratio. The prices are what have dramatically changed these values. There are two views as to the effect of valuation ratios in their current state. One is that valuations will remain at their current level, suggesting much lower expected returns, and approximately 3 percent real return on equities.

The second view is a correction to the ratios, resulting in less favorable returns until the ratios adjust to their means. This scenario predicts that the 10-year real equity return is nowhere near the level of the past; today it may well be near zero, perhaps even negative. This is not exceptional in the U.S. since during 1871–2008 the market has experienced 7 secular bull and bear sequences with average duration of 18 years. The latest secular bear sequence began in 2000 and the end is not in sight.

Chapter 5 examines demand-side models. This approach uses a general equilibrium or macroeconomic model to calculate the expected equity return by considering the payoff demanded by investors for bearing the risk of equity investment. The historical equity premium – measured as the excess return on stocks relative to the return on relatively risk-free Treasury bills – is, however, much larger than could be justified as a risk premium on the basis of standard theory. Using the accepted neoclassical paradigms of financial economics

stocks should provide at most a 1 percent annual risk premium over bills. This is known as the equity premium puzzle that is a quantitative puzzle about the magnitude, rather than the sign, of the risk premium. Logically, there are two possible resolutions to the puzzle: either the standard models are wrong, or else the historical premium is misleading and we should expect a lower premium in the future.

Chapter 6 considers surveys, in which an estimate of the equity risk premium is obtained by surveying financial professionals or academics. The best known is a survey in which the opinions of 226 financial economists were asked to forecast the average annual equity premium over the next 30 years. Their forecasts ranged from 1% to 15%, with a mean and median of 7%. No clear consensus emerged: the cross-sectional dispersion of the forecasts was as large as the standard error of the mean historical equity premium. Such results presumably incorporate information from the other three methods. At the time of the survey, academics' forecasts of the long-run premium thus seemed strongly influenced by the historical record. These estimates, however, provide inconsistent projections of equity returns.

In a bi-annual survey, financial professionals, e.g. chief financial officers (CFOs), are asked to forecast the average annual equity premium over the next 10 years. CFOs need an estimate of equity risk premium when estimating hurdle rates and determining the average cost of capital used by firms. The average consensus estimate is 3.5 percent as the geometric mean. This is close to the estimates obtained using supply-side models discussed in Chapter 4.

The return on the investment portfolio depends on the returns on the asset classes in the portfolio, but it also depends on the allocation to different asset classes. It is always possible to improve a suboptimal allocation. Several studies find that asset allocation policy explains more than 90 percent of the performance variance of a typical pension fund.

Financial innovations have provided new asset classes and investment instruments. They can be used to diversify risks and as sources of active and passive return. In addition, the last 20 years have seen a revolution in the way financial economists understand the investment world. We once thought that stock and bond returns were essentially unpredictable. Now we recognize that stock and bond returns have a substantial predictable component at long horizons. Financial markets offer reward in the form of average returns for holding risks related to recessions and financial distress, in addition to the risks represented by overall market movements. Recent advances in portfolio theory address the question, what should an investor do about all new facts?

Chapter 7 offers a brief introduction to the practices of modern pension fund management. The Chapter reviews surveys that focus on the general investment practices of asset management firms, institutional investors, and private wealth managers. It aims to give an account of the current practices in the industry and to compare these practices with the current state of the art as described by both academics and practitioners in the investment literature. In this context,

a renewed interest in asset-liability management techniques has surfaced in institutional money management. New approaches referred to as liability-driven investment (LDI) solutions have appeared in the wake of recent changes in accounting standards and regulations that have led to an increased focus on liability risk management.

The central tasks of portfolio management are: (1) risk analysis and asset allocation, (2) the use of indices and benchmarks, (3) asset-liability management and (4) performance measurement. These issues emphasize good command of modern quantitative methods.

Equity markets will recover in due course, but one cannot rely on equity returns to solve the pension funding problem. Modern approach in asset and risk management is required.

The Publication is available only in Finnish:
Osakemarkkinoiden näkymät ja haasteet eläkesijoittamiselle.
Eläketurvakeskuksen raportteja 2009:3.

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ISSN 1236-5948
ISBN 978-951-691-114-7 (PDF)
ISBN 978-951-691-113-0 (printed book)

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