

7 Conclusion

In this study, we examine the effects of uncertainty due to exchange rate predictability on optimal dynamic portfolio choice in a continuous time framework. Uncertainty about the predictive relation affects the optimal portfolio choice through dynamic learning process, and leads to a state-dependent relation between the optimal portfolio choice and the investment horizons. First we investigate the hedge demands in international portfolio selection for CRRA investors where the exchange rates are predicted by the movements of the interest rates through regression. Then our approach is through the use of the martingale methodology to construct the optimal solution under complete market assumption. Finally, the results show that the optimal weights are required to be adjusted to reflect the prediction effects due to the exchanged rate risks.

In this paper, the optimal portfolio is composed into four major components: the international myopic portfolio, the domestic interest rate hedge portfolio, the cross country interest rate differential hedge portfolio and the domestic riskless asset. Our results are similar to the four-fund separation proposition addressed in Rudolf and Ziemba (2004). Adding to the previous literatures, the market structure and the certain utility employed to describe the investor's attitude toward risk allow us to find the general pattern of the optimal strategy for investors through dynamic fund separation methodology.

Appendix: Glossary of the notations in this paper

The following are notations used in this paper to formulate the market structure and the filtering mechanism.

M_d : domestic money market account;

M_f : foreign money market account;

B_d : domestic discount bond;

B_f : foreign discount bond;

S_d : domestic stock index;

S_f : foreign stock index;

r_d : domestic risk free rate;

a_d : mean-reversion speed of domestic risk free rate;

b_d : mean of domestic risk free rate;

σ_{r_d} : variance of domestic risk free rate;

σ_{B_d} : variance of domestic discount bond;

λ_{r_d} : risk premium of domestic discount bond;

μ_{s_d} : risk premium of domestic stock index;

σ_{s_d} : variance of domestic stock index;

r_f : foreign risk free rate;

a_f : mean-reversion speed of foreign risk free rate;

b_f : mean of foreign risk free rate;

σ_{r_f} : variance of foreign risk free rate;

σ_{B_f} : variance of foreign discount bond;

λ_{r_f} : risk premium of foreign discount bond;

μ_{s_f} : risk premium of foreign stock index;

σ_{s_f} : variance of foreign stock index;

μ_e : mean of exchange rate;

σ_e : variance of exchange rate;

\widehat{M}_f : the converted foreign money market account;

\widehat{S}_f : the converted price of foreign stock index;

ξ_f : risk premium of \widehat{S}_f ;

\widehat{B}_f : the converted price of the foreign discount bond;

ς_f : risk premium of \widehat{B}_f ;

L : predictive variable;

α : unknown scalar;

β : predictive coefficients.