Good example of john mclane article review

Finance, Investment

Article Review on Financial Econometrics

Cambridge University

Article Review on Financial Econometrics

For the article review assignment, I have chosen the article ' Inflation and Real Stock Returns Revisited' by Shu-Chin Lin, published in the refereed journal Economic Inquiry in 2009. The article addresses the topic of relationship between real stock returns and inflation, aiming to obtain the empirical evidence of the effect of different dimensions of inflation (including anticipated inflation, unexpected inflation, and inflation uncertainty) on the real stock returns.

The motivation for the study arises from the inconsistencies between the generalized Fisher hypothesis and the empirical findings of the previous studies that tried to test the mentioned hypothesis. Namely, though during the last two decades several researchers have found the positive or weakly positive relationship between inflation and real stock returns, the majority of the studies on the topic (as the author states, mainly the earlier ones dating back to 1970s and ' 80s) find the negative correlation instead. This negative effect of inflation on the real stock returns, called " the stock return-inflation puzzle" (Lin, 2009), was attempted to explain by later studies (from 1980s to 2000s) through the impact of non-monetary factors such as real output shocks, or the interaction of money demand and money supply. In contrast, Lin (2009) aims to address the issue by constructing a dynamic model, in order to test how the studied relationship would differ in the long run and in the short run. Additionally, the author incorporates the inflation uncertainty as an additional factor, to measure its effect on the real stock return.

The financial theory utilized by the study relies upon the generalized Fisher hypothesis, depicting the independence between real rates of return on common stocks and both anticipated and unanticipated inflation rates. The common way to test the stated relationship is stating it in the form of a regression model, with the dependent variable being the real stock returns, and the independent variable – the (expected or unexpected) inflation rate. Further, for the generalized Fisher hypothesis to hold, the coefficient before inflation variable should be found statistically indifferent from zero. The mentioned hypothesis is a generalization of so called Fisher effect, which relates to the idea of positive relationship between short term interest rates and inflation. In other words, short term interest rates are deemed to incorporate the effect of the information about future changes in price level. With inflation being one of the most important macroeconomic factors, the investors need to take into account the mentioned effect while taking the stock purchase decisions, since the original intention of the investment in such case is to increase the real purchasing power. Moreover, assuming that Fisher hypothesis holds, the common stock could be utilized as a hedge against inflation. Therefore, the mentioned topic receives additional motivation for exploration.

As for the estimation of such type of models, OLS estimation process would generally produce biased results, since the lags of dependent variable are included into regression. Moreover, in the presence of error term autocorrelation, the OLS coefficient estimates would also be inconsistent. Therefore, the common estimation technique for ARDL models is Instrumental Variables (Gile, 2013). In addition, in order to avoid

multicollinearity arising due to the inclusion of numerous lagged values of the independent variable, the number of parameters could be reduced through the use of restrictions on the coefficients before the mentioned lagged values (i. e. on the rate of decay of those coefficients). Having discussed a number of estimation procedures used in the previous research on the topic, the author chooses to use the pooled mean group (PMG) estimator, which allows the intercepts, short-term coefficients and error variances to differ across the groups (country-wise, in the studied case), while for the long-term coefficients, the restriction of being the same is imposed. As the author argues, this estimator offers the optimal combination of efficiency and consistency, while also being relevant for the cases where the market conditions in the countries differ in the short term, but can be considered homogeneous in the long term (Lin, 2009).

Additionally, the author uses an autoregressive integrated moving average (ARIMA) model to obtain expected and unexpected inflation components, with three types of alternative models further applied for conditional variance with the purpose of further checking the robustness of results: a generalized autoregressive conditional heteroskedasticity model (GARCH), an exponential GARCH (EGARCH, which allows considering the asymmetry of negative and positive shock effects), and a component GARCH (CGARCH, which allows reversion to the mean that changes over time). The author also incorporates inflation uncertainty as an extra explanatory factor into the right-hand side of the model, expressed as a " logarithm of the fitted conditional volatility values" from the respective GARCH equations (Lin, 2009).

Further, the author applies Maximum Likelihood estimation to obtain the long-term and short-term coefficients for the formulated model, using the quarterly data from 1957 to 2000 for a panel of 16 developed OECD countries. In addition, the Hausman test is performed in order to check whether the long-run coefficients heterogeneity restriction holds. This test is commonly performed to check whether the effects are uncorrelated with errors, since this assumption is crucial for estimating a random effects model for panel data (versus a fixed effects one).

The results of the study indicate, firstly, the existence of strong negative relationship between stock returns and expected inflation in the long run, while for the short run, the average of respective coefficients is positive and insignificant (which corresponds to the theoretical postulates stated by generalized Fisher hypothesis). Secondly, with regards to unexpected inflation, short-term coefficient estimates are found to be positive, while long-term ones – negative, both being statistically significant. The implication that can be derived is that stocks cannot be used to hedge against unanticipated inflation (Lin, 2009). The robustness checks reported by the author, based on comparison of the findings from ARIMA and three different GARCH models used, confirm the sign and statistical significance of the findings. Finally, the incorporation of inflation uncertainty, as an additional factor to the model, preserves the signs and statistical significance of the coefficients for both anticipated and unanticipated inflation in the short and long run. The inflation uncertainty itself is found to produce a statistically non-significant impact on the real stock returns in the short run, and a significant negative effect in the long run.

Therefore, the article reviewed finds the empirical evidence in favor of generalized Fisher hypothesis for the expected inflation in the short run (with no significant impact of inflation on the real stock prices revealed for such case). Still, for the expected inflation in the long run, as well as for unexpected inflation (both in the short and long run), the generalized Fisher hypothesis is found to be violated, with the empirical results proving the opposite of what may be inferred from theory. Among the possible limitations of the study and the directions for future research, the author proposes testing the formulated model on the data for developing countries, repeating the empirical exercise with time passing to consider the effect of structural changes in the economy, as well as further searching for possible explanations of the revealed discrepancy between theory and empirical evidence on the topic (Lin, 2009).

References

Gile, D. (2013). ARDL Models - Part I. Econometrics Beat: Dave Giles' Blog. Retrieved from http://davegiles. blogspot. com/2013/03/ardl-models-part-i. html

Lin, S.-C. (2009). Inflation and Real Stock Returns Revisited. Economic Inquiry, 47 (4), 783–795.

Pesaran, M. H., Shin, Y., & Smith, R. P. (1997). Pooled Mean Group Estimation of Dynamic Heterogeneous Panels. Retrieved from http://www. researchgate. net/publication/4724203_Pooled_mean_group_estimation_of_dynamic_hetero geneous_panels/file/9fcfd508ffbb348372. pdf