



**T A MANAGEMENT INSTITUTE  
MANIPAL - 576104**

*Research Seminar*

**“Dynamic Interdependence of Human Capital and Common Factors  
Affecting Stock Returns: An Asset Pricing Approach”**

*Speaker*

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**2.30PM, January 13, 2010, Class Room No. F2, TAPMI New Campus**

**All are invited**

## **Abstract**

The risk return puzzle has been one of the fundamental issues in finance and the oldest model addressing it is CAPM. However, given the inadequacies of CAPM, two schools of thought emerged, viz. behaviourilists, and Intertemporal CAPM (ICAPM) proponents. The behaviourilists modeled the common factors observed in the market, popularly known as Fama-French model. The ICAPM proponents focused on modeling measurement errors and time variability in the investment opportunities.

The first phase of the study focuses on the ICAPM view of a time varying setting in the Indian market. In the second phase, the Fama-French model has been tested in a time varying setting. In the final phase, the variables of two models were combined with principal component analysis and the resultant model is tested in a time varying setting.

Monthly returns of stocks which were part of S&P CNX 500 ranging from March 1996 to March 2006 were used for the study. Company's data were chosen from prowest database. The other variables were obtained from Reserve Bank of India database.

In this study, Vector Auto Regressive (VAR) model has been used to investigate the dynamic interactions and causal relationships, Granger causality test has been used to identify significant impact on the future values of each variable and Impulse Response Functions (IRFs) has also been used to mark the response of endogenous variables in VAR. A variance decomposition analysis (VDA) was applied to understand the percentage of variance explained by factors including human capital and other variables affecting share prices. Generalized method of moments (GMM) was also used to check the robustness of the results.

The first phase of analysis tests the variations of market factor with the macro economic variables. The causality among the variables was investigated and it revealed that market return can be estimated when human capital proxies are introduced in the model. Other variables are trivial in the presence of human capital. The direction of relationship aided in concluding that human capital is a major factor affecting stock returns.

In the second phase, the three factor model was tested and the results confirmed a conditional value effect and strong size effect. The causality test indicated that size causes value effect and value in turn caused market factor. This implied that size and value were correlated. Based on the principal component analysis, the long and short term interest rates were dropped for further analysis. Hence, only human capital, size, value, dividend yield, and market factor were considered for further analysis.

The final phase combines the factors of Fama-French and ICAPM variables. It was found that when common index factor were removed, Human Capital was significant. Size and Value effects were trivial in the presence of Human Capital. Size effect caused value and value caused human capital proxies. The effects of size and value disappeared when one of the factors was removed. Other variables were instrumental in explaining the variation caused by Human Capital proxy and common index. GMM estimation indicated that human capital and index returns are the major factors affecting stock returns.

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