



## Ph.D. Dissertation Defense

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<b>Degree:</b>	Doctor of Philosophy
<b>School/Department.:</b>	School of Business / Business Administration
<b>Date:</b>	Wednesday, April 24, 2024
<b>Time:</b>	10:00 am – 12:00 pm
<b>Location:</b>	<a href="https://stevens.zoom.us/j/99869672134">https://stevens.zoom.us/j/99869672134</a>
<b>Title:</b>	Three essays on empirical asset pricing
<b>Chairperson:</b>	Dr. Ying Wu, Finance, School of Business
<b>Committee Members:</b>	Dr. Anand Goel, Finance, School of Business Dr. Majeed Simaan, Finance/FE, School of Business Dr. Chihoon Lee, Information Systems, School of Business Dr. Suman Banerjee, Finance, School of Business

### Abstract

The three essays presented in my dissertation proposal explore some key issues in asset pricing: horizon pricing, stock momentum, and factor momentum.

In the first essay, “*Arbitrage Asymmetry, Mispricing Gap, and Momentum*”, I show that the mispricing score gap (Mgap) between overpriced winners and underpriced losers effectively measures the level of persistence in the trading behaviors of arbitrageurs and sentiment investors simultaneously and is a strong predictor of stock momentum. This predictability is statistically and economically significant both in-sample and out-of-sample. The in-sample predictability remains even when accounting for various state-of-the-art common risk factors and existing predictors. A one standard deviation increase in Mgap boosts next month’s momentum returns by 1.10%, which is over 90% of the historical 1.16% return. This predictability seems to stem from market efficiency determined by the dynamics of both sentiment investors and arbitrageurs.

In the second essay, “*Not Every Factor Has Its Momentum*”, we adopt both qualitative and quantitative methods to classify factors into two categories: slow-moving factors (SFCs) and fast-moving factors (FFCs). We find that these two types of factors show significant differences in factor momentum up to 16 months regardless of the classification method we use. Compared to FFCs, SFCs are less likely to remain in the same portfolio when we estimate the transition probability matrix. Because the majority of FFCs are constructed by taking the difference of SFCs, any investor sentiment associated with SFCs also largely disappears when the horizon extends. Therefore, the persistence of sentiment associated with these two types factor also diverge significantly. Our results are robust across different sets of factor returns and different categorizing methods.

In the third essay, “*Are Factors Horizon Dependent*”, I study the horizon effect of factors. Recent studies focus on replicating factors, but the question of how factors behave across different return horizons is not answered. I construct 55 factors across different return horizons and examine the pricing of factors at each return horizon. The majority of factors in momentum, value vs. growth, profitability, intangibles, and trading frictions fail to show any horizon effect, while half of the factors in investment have a strong horizon effect. In contrast, the market factor has the dominant horizon effect among all factors, and its risk is priced when the return horizon is longer than six months.