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THE COSTS OF ETF MEMBERSHIP: VALUATION EFFECT OF ETFs ON UNDERLYING FIRMS

In spite of the explosive growth of the ETF market over the past two decades and its significant effects on the trading environment, we know little about the effects of ETFs on the value of underlying stocks and the channels through which such valuation effects take place. In my recent research (co-authored with Professor Kee-Hong Bae at York University and Professor Jun-Koo Kang at Nanyang Technological University), we seek to fill this gap in the literature by investigating whether and how ETFs affect the value of the stock issuers.

There are two competing views on the effect of ETFs on firm value, namely, the view that ETFs adversely affect the value of the stock issuers (the "negative view") and the view that they have a positive effect on the issuer value (the "positive view"). According to the negative view, the significant rise in ETF trading increases systematic risk of the underlying stocks and both supply of and demand for underlying shares to sell short. In contrast, the positive view suggests that ETFs increase firm value through improvement in stock liquidity and increased demand by institutional investors for stocks that underlie the ETF.

Our results are largely consistent with the negative view of ETFs and inconsistent with the positive view. Specifically, using the proportion of shares outstanding held by all ETFs as the measure of the availability of ETF, we find that ETF holdings have a significantly negative impact on firm value during the eight-year sample period from the fourth quarter of 2002 to the third quarter of 2010. However, this negative impact exists only for firms

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with market capitalization below the sample median, suggesting that small firms suffer more from the rise of ETFs. The economic impact of ETF holdings on the value of small firms is substantial: For firms with market capitalization below the sample median, one standard deviation increase in ETF holdings leads to a decrease in Tobin's *q* by almost 13%.

To investigate the channels through which ETFs affect firm value, we examine how ETF holdings affect key determinants of firm value, such as systematic risk, short interest, liquidity, and institutional ownership. We find that systematic risk of small firms increases with ETF holdings. We also find that ETF holdings significantly increase underlying firms' short interest, stock liquidity, and institutional ownership, especially for small firms.

We then examine how the changes in these stock characteristics caused by the changes in ETF holdings affect firm value. We find that systematic risk and short-selling activities are the channels through which ETF holdings impact on firm value. Furthermore, we find that even though ETF holdings improve stock liquidity and increase institutional ownership, these seemingly desirable changes in stock characteristics actually do not contribute to firm value because they increase investors' short-selling activities in underlying stocks.

Our research may be of interest to regulators and investors by providing new insights on a number of important issues. First, index inclusion has long been viewed by both academics and corporate managers as a desirable event for its positive effect on stock liquidity and demand by institutional investors. However, our results show that the rise of ETFs actually hurts firm value, suggesting that index inclusion is not always beneficial to firms. Second, our research sheds new light on the relation between institutional ownership and firm value. Our results suggest that the institutional demand effect could be detrimental to firm value if high ownership by institutional investors leads to high short-selling activities by short sellers. Third, our study identifies a conflict of interest that exists in the ETF industry. While ETF sponsors have strong incentives to lend underlying stocks to short sellers to make profits, ETF investors and shareholders of these stocks suffer from the increase in supply of their stocks for short sales because it decreases firm values. This conflict of interest causes a wealth transfer from shareholders of the underlying stocks and ETF investors to ETF sponsors and short sellers.

The proponents of ETFs argue that ETFs are a low-cost alternative to conventional mutual fund investments. However, our study uncovers a non-trivial hidden cost of ETFs and suggests the importance of re-evaluating the potential benefits and costs of the rise of ETFs. Finally, regulators are increasingly concerned about the potential risks of having ETFs, particularly their impact on market volatility. By providing firm-level evidence that ETFs increase the systematic volatility and thereby decrease the value of the underlying firms, our paper provides direct evidence in support of this concern and calls for future research on the systemic risks of ETFs.

BIOGRAPHY

DR. JIN WANG is an Assistant Professor in Finance at Wilfrid Laurier University. He received his Ph.D. at Queen's University. His research interests are in empirical corporate finance, corporate governance, and investment. His work spans several areas such as capital structure, payout policy, corporate cash holdings, credit ratings, and ETFs. He studied how a firm's labor market affect its financial choice; investigated how a firm's relationships with its customers/suppliers affect its shareholders' income; examined why those firms that rely on principal customers/suppliers tend to hold more cash; investigated whether competition among rating agencies affects the quality of their ratings on corporate bonds; and examined how the rise of ETFs affect firm value of underlying stock issuers. Dr. Wang has presented his work at a variety of prestigious academic conferences around the world, such as Northern Financial Association and Financial Management Association annual meetings. His paper on how a firm's relationships with employees affect its capital structure has been published in the Journal of Financial Economics. He mainly teaches corporate finance courses.

TESTIMONIAL

I AM VERY HONOURED TO BE A RECIPIENT OF THE **CSIRF** Ph.D. SCHOLARSHIP. I received this scholarship in the last year of my Ph.D. program. My university provides funding for Ph.D. students up to four years; without this scholarship, I would have to spend much more time on activities such as teaching and research assistance. This scholarship helped me focus on my dissertation and complete my Ph.D. degree on time. In addition, the funding provided me with means to attend several major conferences and present my research. This was greatly helpful for both disseminating the knowledge from my research and increasing my visibility in the job market. Finally, as one of the most prestigious scholarships for Canadian scholars in the finance area, the scholarship increased my reputation and marketability in the job market.