Public Project Summary

"Does Fund Size Affect Performance? An Analysis of Emerging Market Corporate Bond Funds"

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1 Executive Summary

In this study, we focus on the Emerging Markets (EM) corporate bond funds and try to identify a relationship between their performance and asset size, also referred as Assets Under Management (AuM). There have been arguments that performance does not persist when new money flows, but the research has been mostly limited to equity funds and not mutual funds. This gives a premise that research and analysis can be done to identify a relationship between the two in fixed income space. We intend to examine the said relationship across the emerging market corporate bond funds and the competitors so that the research is not done in isolation.

The study initially discussed the existing literature where analysis have been done on fixed income and equity mutual funds as well as hedge funds, mostly in developed markets as that has been the focus so far. Following this, we discussed data sources, methodology, and then empirical analysis. Lastly, we discussed the future outline of how this study will be extended to build a refined model such that it could be used across different categories: Emerging Market strategies for sovereigns and government-related bonds, strategies that include bonds issued in a local currency, strategies that are blended with both hard and local currency, and finally strategies that are unconstrained.

According to the results from the existing models, we did not observe any relationship between the fund size and its performance for emerging market corporate bond funds. However, we believe that increasing the robustness of the existing models using different factors and improved data – risk adjusted performance measures – might bring a difference to the results. This, however, will be done during the time I start my full-time job in the company, have the opportunity to use proprietary resources and take mentorship of the senior members of the team.

2 Literature Review

A study by Singh and Tandon (2021) took a panel data approach for exploring a relationship between fund performance and its attributes (Net Asset Value, turnover ratio, expense ratio, fund size, and fund age), and testing the risk-adjusted performance measures (Treynor's Ratio and Jensens Alpha). The results indicate that the turnover, size of the fund, and age are negatively related to fund performance, whereas NAV is positively correlated. In comparison, the expense ratio does not show any significant influence.

Bodson, Cavenaile, and Sougné (2011) used a similar methodology as Ammann and Moerth (2005) and Xiong et al. (2009) of introducing performance measures apart from the Sharpe ratio. Moreover, they used performance measures based on the single factor model Jensen's alpha and Treynor's ratio. The two performance measures were based on the multi-factor model (Fama-French model with Carhart momentum), and a performance measure constructed by Bodson et al. (2010). The study's key findings indicate that a relationship exists between fund size and performance that is quadratic and concave. This also infers that an optimal fund size exists, which can be used to maximize performance and returns.

A recent study by Zhen (Zach) Yan (2021) investigates the returns to scale among corporate bond mutual funds. Yan (2021) constructed a benchmark using the Vanguard bond market index funds to calculate excess returns (alpha). They used the Vanguard Total Bond Market Index Fund as an aggregate bond market factor. The study's findings show a significant relationship between fund size and performance (gross alpha). The turning point for the quadratic model was the $519 million fund's total net assets.

3 Data

We used Morningstar to retrieve the list of funds that exist in the Emerging Markets (EM) Corporate Fund's universe. The base currency for the fund was United States Dollar (USD). After having the list of funds as our universe for analysis, we used Bloomberg to retrieve the figures for fund's attributes: Fund Size – Assets Under Management (AuM) – and the returns of the fund on monthly basis. Our data period was from January 2010 till December 2020.

4 Methodology

Using the statistical models used in the existing literature, we introduced 6 different models to identify the relationship between AuM and performance. Initially, we had a linear model, which was followed by a quadratic model. Additionally, we introduced a fixed effects model to capture the biasness due to omitted variables. Lastly, we introduced a cross sectional data regression model to create a balance dataset.

5 Results

Using our statistical models, we did not find any relationship between the performance of emerging market corporate bond funds and their performance. This deviates from the results that exist in the academic literature, however because emerging markets do not have a strong correlation with the developed markets in terms of returns and volatility, the relationship does not have to be similar.

6 Benefits to client and future outline

This project was initiated within the Emerging Market Debt (EMD) team in the workplace, where I am currently interning. The motivation was to identify the relationship between the emerging market bond funds' performance and their asset size. As we considered this project a preliminary step towards a better suited research due to the time constraints and strict deadlines, we decided to proceed with the EM corporate bonds as the first step. Through this project, we have an extensive literature review, framework of the statistical models, and the data. This project was the opportunity for me and the client to spend time and set the groundwork necessary for the scope with a much wider scope. Additionally, the information collected and analyzed in the project is now available to the client and the whole EMD team, which can be used for different purposes. Lastly, through this project, we have raised questions whether emerging markets work similar to the developed markets. This area would be expanded in the supplementary volumes of the study.

7 Lessons

This study was a good learning opportunity about the fixed income mutual funds, especially corporate bond funds. As I have worked in the emerging market debt (EMD) team for the last six months, the project was the chance to dig deeper into the dynamics of EM, understand its growing popularity, and know more about how EM operates differently. Moreover, the concept of identifying the relationship between asset size and performance is still a new concept with the fixed income asset class and a novel concept in the emerging markets. There is a lot of scope and room for additional research that would focus particularly on emerging markets. Additionally, this could be taken to issuer level as well to see how different issuances react when we see changes in the asset size. All in all, it was an opportunity to work directly with the client, understand what they are looking for, and facilitate them by providing the required deliverables. In my case, I shared the report with the client and my extended team for a review. Using their feedback and our future agenda, we will resume working on it as soon as the full-time job begins.