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Mandatory pension fund (MPF) affiliates in Colombia do not have a great deal of information to gauge the financial performance of pension fund managers (PFM). At present, each PFM publishes a monthly report on average profitability for the preceding 36 months (tri-annual yield). However, this measure is softened and limits a situation analysis of the yield on those funds. A variance approach that adds a portfolio-risk measurement to the available data would allow for a better assessment of MPF financial performance. If those who contribute to these funds have access to more robust measurements of financial performance, they can choose their MPF on the basis of more complete criteria, as opposed to only tri-annual measurements of profitability.

The studies done in Colombia concentrate on evaluating the efficiency of pension funds and on showing the portfolio of these investors is being managed in a financially inefficient way (Jara, Gómez and Pardo, 2005).<sup>1</sup> The primary reason for that inefficiency, according to Jara (2006b), lies with the definition of minimum profitability and the way commissions are structured. These works suggest that pension fund managers lack incentives to perform more efficiently, and propose the application of measures that include MPF portfolio risk. The Sharpe ratio<sup>2</sup> and the information ratio<sup>3</sup> are two examples

In addition to tri-annual figures on profitability, the National Superintendent of Financial Institutions (SFI) requires all MPF in Colombia to value the risk posed by a sudden change in asset prices, based on a value-at-risk (VaR) measurement calculated daily. However, it does not require maximum levels for this measurement, nor release of the respective information. This is contrary to the situation with profitability, which must be above a required minimum determined quarterly by SFI.

The purpose of this article is to assess the long-term financial performance of pension funds, not only with a profitability analysis, but also with risk measurements.<sup>4</sup> It proposes that performance indicators such as the Sharpe coefficient and the Jensen equation be calculated, and analyzes the variance in MPF portfolios, based on their primary risk factors. The indicators examined herein point to very different deductions when risk considerations are included. This suggests that MPF performance analysis should not be limited to measurements of profitability alone. Despite the relative stability of MPF returns in recent years, the risk indicators for the same period have increased, undermining the measurements of long-term financial performance. This increase in portfolio volatility was exhibited by the six MPF in Colombia, mainly because their portfolios are focused heavily on assets with a high positive mutual correlation.

What explains the increased variance in returns and stable profitability of MPF in recent years? On the one hand, current regulations do not limit the risk indicators a MPF may adopt. On the other, the commission charged by these funds for their services is calculated according to the contributions received each month. This offers no incentive to secure better profits for their affiliates. Publishing risk-based performance measurements can help to reduce the growing variance in MPF returns. However, better risk policies would limit portfolio volatility without necessarily improving the returns on MPF. Aligning incentives for these funds to obtain better returns for their affiliates depends on the provisions in Law 100, which does not allow them to charge a commission based on the profitability or value of the fund (which is generally how investment fund management commissions are charged).

This article is divided into three parts. Two measurements that consider the risk/return ratio are described and calculated in the first section. These are the Sharpe ratio to measure MPF performance and the Jensen equation to compare MPF financial performance to a benchmark portfolio. In the second, the increase in MPF portfolio risk is examined on the basis of risk factors. The last section contains conclusions and recommendations.