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BOOK OF ABSTRACTS

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EFFICIENT FRONTIER APPROACH TO DETERMINE PERFORMANCE OF INDIVIDUAL PENSION FUND COMPANIES: EVIDENCE FROM TURKEY

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Abstract

In Turkey, there are two types of pension fund systems. One of them is general social security system which the fund is managed by formal government institutions. The other one is individual pension fund system that the fund is managed by private insurance companies. Individual pension fund system in Turkey, not only serves to social security reform but also has an important role in the development of the financial system since October 27, 2003. Every private insurance company has their own pension fund types that investors may choose them and create their portfolios.

Although there are many studies to measure the performances of the pension funds in the literature, such as Sharpe Ratio, Treyner Ratio, etc. It is well known that those performance ratios focus on the risk-free rates and the market indexes as a benchmark to measure the performance of funds as well as pension fund companies. In this study, we propose a new approach to measure pension fund companies' performances by presenting a new benchmark namely the efficient frontier generated by all individual pension funds.

In this paper, to measure the performance of pension fund companies, all individual pension funds are grouped in terms of their own companies and created optimal portfolios for different levels of risks i.e. efficient frontiers. Then efficient frontier of each company is compared to the benchmark efficient frontier. According to the comparison of efficient frontiers, the companies' performances are discussed from the closest to the most distant.

Within the scope of this study, 176 individual pension funds from 16 pension fund companies were used and the pension funds daily return data gathered from The Capital Markets Board's database for the period of 2006 – 2016. The analyses based on seven research sample windows which contains different time periods for comparing the efficient frontiers (2006-2016; 2007-2016; 2008-2016; 2009-2016; 2011-2016; 2012-2016; 2013-2016).

It is concluded that according to the widest three sample windows, Anadolu Hayat Emeklilik portfolio has the closest efficient frontier to benchmark efficient frontier (2006-2016; 2007-2016; 2008-2016). On the other hand, while sample windows narrowed, Avivasa Emeklilik ve Hayat portfolio and Allianz Hayat ve Emeklilik portfolio have the closest to the benchmark efficient frontier (2009-2016; 2011-2016; 2012-2016; 2013-2016). As a result, considering the over eight years' performances, Anadolu Hayat Emeklilik portfolio has the highest returns. On the other hand, according to the less than eight years' performances, Avivasa Emeklilik ve Hayat and Allianz Hayat ve Emeklilik portfolios have the highest returns.

Key Words: *Individual Pension Funds, Efficient Frontier, Fund Performance*