

UNIVERSIDAD ESAN



**THE IMPACT OF TRANSACTION COSTS IN PORTFOLIO
OPTIMIZATION IN PERU**

**Thesis presented in partial satisfaction of the requirements to obtain the degree
of Master in Business Administration by:**

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EXECUTIVE SUMMARY:

The purpose of this thesis is to investigate the impacts of transaction costs in portfolio optimization in Peru. The basic idea is that investors try to hold the most efficient portfolio of stocks, which is done by rebalancing the portfolio by either buying or selling stocks. However, rebalancing a portfolio incurs transaction costs that often hamper on the performance of the portfolio, resulting in less revenue than expected.

The transaction costs structure in Peru is interesting in a sense that it charges investors a percentage of the stock value traded. However, there is minimum trading fee to pay that is high and that makes the Peruvian stock market expensive. The goal of this thesis is to analyze the behavior of the transaction costs structure in Peru over three dimensions. The first dimension is the the type and number of stocks in the portfolio. The thesis concludes that transaction costs tend to be higher when the portfolio is composed of stocks with small market capitalizations than with stocks with large market capitalizations. The second dimension is the holding period. The thesis concludes that transaction costs tend to decrease when the holding period increases. Also, entry and exit costs corresponding to the period of composing the portfolio and the period of liquidating the portfolio tend to be diluted when the holding period is higher. The third dimension is the trading strategy. The thesis concludes that active trading strategies characterized by a lot of rebalancing face higher transaction costs.

In order to conduct the analysis, the transaction costs structure used in Peru has been compared with two other transaction costs structures commonly applied in the United States of America. The first structure charges investors per the number of shares they buy or sell and are denoted transactions costs per share. The second structure charges investors per the number of trade they make and are denoted transaction costs per trade. Such a comparison is interesting in order to see which type of transaction costs is the cheapest, and under which conditions. The thesis concludes that transaction costs per share are the cheapest for small amounts invested in the portfolio. But once a certain initial amount is reached, transaction costs per trade become preferable. The transaction costs structure applied in Peru represents the most expensive structure for any dimension.

Then, Gaivoronski et al. (2005) suggests that there is a positive relationship between transaction costs and turnover. The thesis calculates a turnover multiple λ that represents how much of the portfolio return is lost in terms of the total rebalancing of the portfolio. The estimation λ has important practical implications. The thesis concludes that significant losses are made when actively rebalancing the portfolio under the transaction costs structure applied in Peru.

Last but not least, the thesis analyses the possibility of making transaction costs per percentage competitive. This is done by lowering the minimum cost per trade. Consequently, transaction costs per percentage become more attractive than transaction costs per share for

any initial amount invested. In the same connection, transaction costs per percentage are preferable to transaction costs per trade for small initial amounts invested.

As a general conclusion, investors that decide to invest on the stock exchange in Peru can only do so if they adopt a passive portfolio management strategy. In fact, they would be facing substantial transaction costs rebalancing their portfolio from period to period. The issue is that the minimum trading fee applied is very expensive compared to the stock inflows and outflows that is actually incurred. Active portfolio management strategies could be adopted if the minimum trading fee was close to the one applied for transaction costs per share in the United States of America.