Has the Composition of the Greek Banking Sector Investment Portfolio Contributed to the Greek Economy Financial Crisis?

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ABSTRACT

The banking sector in Greece met a large growth and provided the Greek economy with a vital push after the credit release. The galloping increase of private, business, and public loans reinforced business activity and offered high incomes for a few years. However, this push that the Greek economy experienced was based on consumption and not on the development of financial sectors that could constantly produce income for the economy and the state. The research examines the Greek banking investment portfolio from 2003 until 2017 based on the portfolio theory of Markowitz. Furthermore, it evaluates its differentiation and examines whether or not has contributed to the financial crisis that the domestic economy faced the previous decade. The findings point out that the negative portfolio returns during the span of seven out of 15 reviewed years and their covariances highlight that the portfolio diversification was not successful according to Markowitz's theory.

KEYWORDS

Greek Banking Industry, Greek Economy, Greek Financial Crisis, Investment Portfolio, Markowitz

1. INTRODUCTION

H. Markowitz's model (1952) is innovative with regard to portfolio theory and is based on the mean-variance model. According to this formulation, an investor considers the expected return as desirable and its variance as undesirable. H. Markowitz's paper is the first mathematical standardization of the idea of investment diversification. Through diversification, the risk can be diminished (but not entirely eliminated in general) without a change in the expected portfolio return. H. Markowitz claims that an investor should maximize the expected portfolio return by minimizing the portfolio return variance (risk).

H. Markowitz showed that the return percentage variance was an important risk factor for the portfolio under a series of hypotheses. Furthermore, a math formula for the variance of a portfolio accrued. This portfolio variance formula not only suggests the importance of investment diversification towards reducing the overall risk of a given portfolio, but also demonstrates the optimal diversification. H. Markowitz's model is based on several assumptions concerning the investors' behavior:

1. The investors believe that every investment is represented by the chance of allocation of expected returns in a period of certain retention.

2. The investors maximize the expected usefulness of a period and their usefulness curves represent the minimization of marginal wealth usefulness.
3. The investors take the portfolio risk into account based on the expected returns' variance.
4. The investors make their decisions, based on the expected return and the risk, therefore their usefulness curves are a math function of the expected return and the variance (or standard deviation) of the returns.
5. For a certain level of risk, the investors prefer higher returns to lower ones. Likewise, for a given level of expected return, the investors prefer a lower risk to a larger one.

According to these assumptions, a certain asset or a portfolio of assets are considered effective if no other assets or any portfolio of assets offer a higher expected return along with the same (or lower) risk or a lower risk with the same (or higher) expected return (H. Markowitz, 1952). The aim is to find the highest return with a given level of risk or the lowest risk with a given level of return. Therefore, the optimal portfolio for a certain investor is the effective portfolio that entails the most usefulness for the investors.

The aim of this paper is to assess the Greek banking investment portfolio from 2003 until 2017, based on the portfolio theory of Markowitz. Furthermore, it evaluates its differentiation and examines whether or not has contributed to the financial crisis that the domestic economy faced the previous decade. The findings point out that the negative portfolio returns during the span of seven out of fifteen reviewed years and their covariances highlight that the portfolio diversification was not particularly successful, according to Markowitz's theory.

2. LITERATURE REVIEW

The process of managing an investment portfolio never stops. After the initial capital investment according to the plan, the actual work begins by evaluating the portfolio return and the portfolio update based on the changes in the financial environment and the needs of the investor (Reilly F., Brown K. 2011). The process of managing a portfolio is a full set of steps that are undertaken consistently for the creation and maintenance of a suitable portfolio (combination of assets) in order to achieve the goals of the clients (Maginn J. L., Tuttle D. L., Pinto D. E., McLeavey D. W. 2007).

According to Reilly and Brown, the portfolio management process constitutes of four stages. The first stage is the policy statement, which centers on the short-term and long-term needs of the investor and which is going to be relevant to the history and the expectations of capital markets. In this stage, the goals and restrictions, as well as the type of risks the investor is willing to take are set. All investment decisions are based on the policy statement in order to ensure that these decisions are the appropriate ones for the investor. Since the needs of the investors, their goals and restrictions develop over time, the policy has to be revised and updated periodically.

In the second stage of the portfolio management process, the portfolio manager studies the current financial conditions and predicts future trends. The needs of the investor, as reflected in the policy statement, along with the expectations of financial markets will both define the investment strategy. Economies are dynamic and are influenced by industrial competition, by politics, as well as demographic changes and social behaviors. Hence, the portfolio will require constant observation and update in order to reflect the changes in the expectations of the financial market.

The third stage of the portfolio management process is portfolio constructing. In this step, the investment strategy is fulfilled and the way of allocation of capital to different countries, classes of assets and titles is defined. The construction of a portfolio that will minimize the investor's risks, while at the same time meeting the demands set by the policy statement. Economic theory helps with portfolio constructing. The fourth step in the portfolio management process is continual monitoring of the investor's needs as well as the conditions of the capital market leading to a policy update whenever deemed necessary. Based on all this, the investment strategy is modified accordingly. An important

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