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School of Economics, Business and Computer Science

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**The impact of macroeconomic variables on Stock Market returns
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Declaration

This dissertation is all my own work and all other works discussed or referred to have been cited.

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Abstract

This study investigates the relationship between the macroeconomic variables and the Greek Stock Market. From the opening of Greek stock market and specifically from 1876, it can be observed that the returns of Athens stock exchange presented many fluctuations. This can be explained by many factors. One of them is the law of demand and supply that determines the prices of stock returns. To clarify, when investors buy en masse a specific stock then its price increases and respectively when investors sell en masse a stock, its price declined. However, this factor is significant, it cannot support the historical sharp changes in the stock prices. By studying the findings of many researches about the correlation between macroeconomic variables and stock markets in other countries, it was clear that macroeconomic variables play a key role to the profits of the listed companies and thus to their dividends that determine the present value of their shares. For example, the increase of oil price in USA in 1974 had a negative impact on companies whose operations and production costs based on oil. This happened due to the fact that their production cost rose, affecting directly and adversely their profits and dividends. Therefore, their low dividends did not attract many investors and resulted in a low present value of their stock price according to the dividend discount model. In addition, we found that the big changes in the exchanges rates of strong currencies can be linked to the substantial changes of stock returns of exporting and importing firms. To exemplify, when Brexit had been announced in 2016, Euro against GBP appreciated, led to the strengthening of European exported firms. Finally, the global financial crisis that started in USA in 2007 evoked the fall of the global markets. Root of financial crisis in 2007 was the increasing home values and low interest rates on mortgage loans. Taking into consideration all the above examples, we can consider that macroeconomic variables such as interest rates, gross domestic product, inflation, foreign markets can determine the stock prices as it has been indicated from the history. Finally, one more representative example is that the stock market of Greece had the best performance in 2019 when the capital controls were cancelled and the lenders could repackage bad loans. These implications resulted in the increase of the market value of the big four banks of Greece, fact that indicates that also banking sector can have a significant impact on stock prices. Inspiring of these examples and motivating from the difficult economic conditions on the Greece and its economic uncertainty, we trigger to find through this study if the macroeconomic

variables such as the industrial production, the exchange rate of usd/ euro, the oil prices, the banking activity and the money supply have a strong relationship with the prices of ASE index. Therefore, the aim of this study is to find the correlation between these factors and ASE index, presenting results that will be useful for the investing community. More specifically, investors and corporate businesses are interested to be aware about the factors that affect the value of listed companies since they affect directly their profitability.

The data that have been used for this study are the prices of ASE (Athens Stock Exchange General Index) index that have been extracted from Capital.gr from the period of 01/01/2010 to 01/08/2020 and the prices of the aforementioned macroeconomic variables for the same period. The relationship between ASE index and macroeconomic predictors has been tested through the regression analysis and specific through the Ordinary Least Squares. This statistic model has been chosen since it is considered that produces accurate and valuable results while many popular theorists and professional analysts have used it. It is a simply model that can be fit to many variables. In addition, for purposes of extended this study, Granger Causality tests are performed to explore if the past prices of the examined independents variables can predict the prices of ASE index or the reverse. To boot this research, banking activity index of Greece that is a very significant sector has been used to run Granger Causality test with ASE index. Finally, the index of Gross Domestic Product has been tested in respect of its causality relationship with ASE index.

The main hypothesis that used to this model is that there is significant relationship between these variables and stock prices. More analytically, the expected outcome was that the macroeconomic factors have a dominant role in the stock prices since they can transform company's assets (right of use assets, value of properties, value of investments, financial instruments) and liabilities (loans, bonds). This outcome was derived from the changes in rates of these factors (interest, property, inflation, foreign markets, unexpected events) and resulting in the increase or decrease of the company's stock price in Greek Stock Market.

The findings from the empirical analysis suggest a positive link between ASE index and crude oil prices but a negative correlation among the ASE index and money supply for Euro area. The fluctuations in exchange rate usd/euro with prices of ASE index concluded also in a negative relationship. It is interesting to note that a causality connection was found between crude oil

prices and ASE index in terms of that the past values of ASE index can forecast the oil prices and also a unidirectional relationship identified between banking activity and ASE index. In short details, we found that ASE index can influence the banking activities. Finally, a causality relationship was found between Gross Domestic Product and ASE index. To explain, results from Granger Causality test indicated that past values of ASE index can predict the GDP.

Based on the above results, we concluded to the fact that the most significant macroeconomic variables of Greek economy have a direct relationship with the Greek stock market as expected. However, we identified that it depends on the composition of index that is examined as well as to the economic conditions of the country that is examined.

Key words: ASE index, Macroeconomic variables, OLS analysis, Granger Causality test