VEC MODEL FOR THE ESTIMATION OF ASSET PRICE INFLATION: EMPIRICAL EVIDENCE IN THE US MARKETS

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ABSTRACT

The present paper constitutes an empirical study of the effects of an increase in monetary base and movements in interest rates over the stock prices in the US markets. This paper analyzes the time series of four different variables. The first variable is the Adjusted Stock Index, which was built using data of over 5900 publicly traded companies of the US markets, these companies are all listed in one of the following markets: NYSE[1], NASDAQ[2] or AMEX[3]. Once the Stock Index was constructed an Asset Price Inflation proxy was built through the correction of the Stock Index by the number of Outstanding Shares of the companies considered in the Stock Index. The second variable considered is Market Capitalization which was included in the model in order to measure the growth in value of the companies listed on the index. The third variable measures the changes on monetary base and it was included in order to analyze causality and the different relationships between the variables and the Adjusted Stock Index. Finally, the fourth variable is the Real Interest Rate, which was approximated through the one year yields of the US Treasury Bills. The results of the model are coherent with the Modigliani Cohn Hypothesis formulated in 1979, which suggests that the market incorrectly extrapolates past growth rates of prices without taking into account the impact of inflation over time [1]. The resulting model corroborated an indirect positive correlation between the upswings of stock prices and the increase in monetary base in the economy; also, it was plausible to establish negative causal dependency between a decrease in real interest rates and the measures of the index in different lags, which constitutes in empirical evidence of the existence of asset price inflation. Moreover, a VEC model was identified and calibrated to estimate the price of the Adjusted Stock Index using historical data series on the variables described in the lines above.

Keywords: Asset Price Inflation, Market Capitalization, Index, Monetary Base, Interest Rates.