

ANALYSIS OF THE RELATIONSHIP BETWEEN ECONOMIC FORCES AND ABNORMAL STOCK RETURN: EMPIRICAL EVIDENCE

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Abstract: Financial markets plays a vital role in the Jordanian economy organizes its operations in a changing environment, which is working on the transfer of local resources through productive channels next to foreign investment. The goal of this study is to analysis the relationship between economic variables and abnormal returns in Amman stock exchange. This paper used the data of variables such as 50 industrial firms with the period from 2004 to 2012. The results indicate that the, consumer price index , gross fixed capital formation and money supply on index abnormal stock returns is statistically significant and no significant industrial production index and money market interest rate Index and Abnormal returns. The researcher recommends attention to economic variables of the fiscal and monetary policy in the Jordanian economy, which is characterized as a fast-growing so that must be the continuous analysis of market factors and determine the impact on abnormal returns for the shares of companies which strengthens the competitive position of companies in the market.

Key words: Economic Forces, Abnormal Stock Return, Stock Market; Emerging Markets (Jordan)

Introduction

The interest rate and the stock prices affect of operations of the money supply in the financial market, which may contribute to the effect on economic variables as he tries to investors maximize market value for them in financial market have an efficient in light provide all the information they have but a lot of researchers proved the inefficiency of the Jordanian market and so investors are constantly trying to get abnormal returns under certain circumstances allow it [5].

[1] and [15] pointed where the information could benefit the investor in the financial markets be internal, but this information may not be available to everyone note that if the information is available to everyone there is no active market in the sense of buyers and sellers that vary between information. The movement of stock in the market is constantly changing as a result of various factors, where express movement and flow of money and that reflect the growth of the economy, which could explain the evolution of the growth of corporate assets and dealing with global threats in an easier and a diversified portfolio of investments. The growth in the stock market depend on evolution of the economy in the country and with the

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This study is aimed to analysis the relationship between economic forces and abnormal stock return in industrial firms listed in Amman Stock Exchange

growth cycle of savings and then begin the allocation of resources and investment and in this way preserve corporate liquidity ratio and cash ratio balanced position to face the risks surrounding the projects. The response of the market returns are a result of economic variables, which vary from one country to another where the affect external variables over internal variables to achieve returns in companies where these variables, some of which weaken the company and others gives them an advantage and strength in making use of variables n all these changes depend on the policies pursued by the company in dealing with local market conditions and global markets. As noted in the recent growing financial crises, most recently in 2007, this leads collapsing economies and the increasing volatility of the financial markets. The financial crises have an effective impact on the economy of the state, which infect and move this effect on the performance of individuals and companies in the same country which affects the economic stability depends on the amount of the investment portfolio invested abroad. Economic growth also depends on invested capital and the resources available and the extent to which the state of the neighboring countries and this reinforces the concept of globalization in terms of technological and informational exchanges in different geographic regions.

History of Amman Stock Exchange (ASE)

The financial markets are important in the economic system in light of the free market system where they are pooling resources and financial savings and directed towards areas of different investment, which in turn produce goods and services, and increase the gross national product, and enjoy the financial markets is particularly important because it represents the link between individuals, banks and savings institutions, which have gathered savings on the one hand, and between investment projects and management are able to exploit the capital, at the best possible use of the other hand [18].

As a result of economic openness to Jordan on the countries of the world and enter into an agreement of foreign trade and GATT and the Aqaba special economic zone and the program of economic transformation led to development production processes, which reflected positively on the Amman Stock Exchange in the last period, before entering into the global financial crisis which led to the collapse of some Arab markets as a result affected indirectly by the global crisis. The development of the financial market performance of all procedures and policies which are made through the government has also been encouraging investment and technology used and which enhance investor confidence in the financial market. ASE will continue to work to achieve their endeavors and projects that aim to continuous development in order to maintain the prominent role that is occupied by the ASE between the markets in the region. ASE will work to establishment of the Jordan national financial center, and will include the financial position of each of the Amman Stock Exchange and the securities depository center, and the offices of realtors, and the audience hall, and offices for banks. [3]

There is also the importance of the legislative evolution witnessed by the Jordanian market in recent times as a result of increasing the number of public shareholding companies in the market, including the impact on the fight against unemployment and increase the volume of exports and the provision of foreign currency as well as increase the added value for the national economy. The market value of the shares listed on the Amman Stock Exchange by the end of the year 2012 amounted to 19.1 billion dinars problem thus accounted for 93.5% of GDP, while exceeding the size of non-Jordanian investment in the stock ownership of 9.27 billion dinars. The most important indicators showed ASE reaching the number of listed companies in which 201 companies in 2005, while the last year, 243 companies. It should be noted that although the resulting global economic crisis of the decline in the volume of transactions in the financial market, but the legislative developments witnessed by the contributed work to attract investment to the market at home and abroad, especially in light as Jordan and safety in addition to what led to this legislation to bring about greater transparency in dealing in the stock market. Stock market is the place where savings are directed towards investment, noting that the stock market investment returns achieved and encouraged to invest heavily, both at the local and Arab and foreign investors. It also resulted in the importance of electronic trading and legislative updates witnessed by the financial market in the Kingdom in terms of increasing investor confidence Jordanians and non-Jordanians alike, which contributed to the emergence of new companies incorporated in the financial market. It is noteworthy that the ASE is a full member of the world federation of exchanges, which includes about (70) global stock exchange [2].

Literature Review

After reviewing the literature earlier with regard the relationship of economic variables returns for stocks ordinary and extraordinary supply the most important studies, including: study [5] Study also indicated that there is a statistically significant relationship on long-term variables between stock prices and economic activity, interest rate and money supply. [13] Focused on the effect of the interest rate in the financial market and the level of activity and liquidity where the results showed that there is a significant relationship between the interest rate and the performance of stocks in the market [10]. Operations include the evaluation of the financial markets and the long-term in the US and Singapore stock markets where by the results of the study show a significant relationship in the movements of financial markets and their performance in the long term better than the short term, allowing the existence of investment opportunities can be exploited [16] Indicated that the relationship between stock prices and the level of inflation through ARDL model and of the results of the study were that the prices of stocks does not hedge against inflation in the long term but in the short-term is through the black market, which can have an impact long-term impact on consumption [17]. Study results indicated a strong relationship statistically significant between the current prices

and suggest levels of speculation in the market as well as the exchange rate and the production index and the money supply with market returns.[4] This study showed the relationship between the stock market and some economic variables before and after the financial crisis, where the results of this study include that the money supply has a positive impact with the share price while other economic indicators have a negative impact after the financial crisis. A research by [9] Study indicated to examine a number of variables with stock returns has been integrated their as portfolio analysis the results of the study was that exchange rate, interest rate affect all of the portfolio returns, while inflation rate is significant for only portfolios. On the other hand, other factors of study not have any significant affect on stock returns. [14] The results showed, "Initiating Structure" type and "Consideration" type of behavior is dominant behavior in both public and private sectors in Fars industries. There is a significant relationship between "Initiating Structure" type of leaders' behavior and efficiency and ROI in public and private sectors. But "Consideration" type of behavior, there is a significant relationship between this type of behavior and efficiency in both sectors and no significant relationship with ROI. [15] Study indicated how the exploitation of managerial skills in an integration process and exploit investment opportunities in the international markets through the exploitation of network communication systems, administrative and technological exploitation of opportunity leads to find a competitive position for the country's economy.

The aim of this study is to explain the relationship between of economic variables and abnormal stock returns in Amman Stock Exchange listed from the period 2004 to 2012 for 50 industrial firms as a sample. Five economic variables, that are hypothesized to influence stock abnormal returns, are examined. These economic variables are money market interest rate, money supply, industrial production index, gross fixed capital formation, consumer price index the hypotheses for this study are formulated as:

HO-1: There is no statistical significant relationship between a money market interest rate supply and abnormal stock return

HO-2: There is no statistical significant relationship between a money supply and abnormal stock return

HO-3: There is no statistical significant relationship between industrial production index and abnormal stock return

HO-4: There is no statistical significant relationship between gross fixed capital formation and abnormal stock return

HO-5: There is no statistical significant relationship between consumer price index and abnormal stock return

Data and Methodology

This study used of sample period of variables from 2004 and 2012 to analysis the relationship between the economic variables and abnormal stock price on 50

industrial firms in Amman Stock Exchange. This sample is selected from population 70 firms based on statistical bulletin of the Amman Financial Market in 2012 and the sample was selected on the basis of the data available to the Jordanian financial market was taking into account the process of merger companies.

Models and Variables:

Many researchers pointed to these models such as [9] refer to stock returns for each industrial firm are calculated:

$$R_{i,t} = \ln (P_t / P_{t-1}) \quad (1)$$

Where $R_{i,t}$ = return of the shares and \ln = natural logarithm.

The return of ASE Index which is used as proxy of the market is calculated by using the following formula:

$$R_{m,t} = \ln (Pr_t / Pr_{t-1}) \quad (2)$$

Where $R_{m,t}$ = return of the ASE index and \ln = natural logarithm.

The market model for a share i can be expressed as follows:

$$E(R_{it}) = \alpha_i + \beta_i * R_{mt} \quad (3)$$

Where R_{it} and R_{mt} represent the share and the ASE Index return on t , the coefficients α_i and β_i are estimated by running an ordinary least-square regression over the estimation window.

Next step abnormal return on t for stock i , given as formula:

$$AR_{it} = R_{it} - E(R_{it}) \quad (4)$$

Where R_{it} is the actual stock return and $E(R_{it})$ is the estimated return by the share's α_i and β_i ; then cumulative abnormal returns (CAARs) is calculated as the following formula:

$$CAAR = \text{Sum } AR_{it} \quad (5)$$

Then at final step, I tested the hypotheses at main following model:

$$CAAR = a + b_1 MMIR + b_2 MS + b_3 IPI + b_4 GFCF + b_5 CPI + \varepsilon_{it} \quad (6)$$

The variables of the study used are:

Money Market Interest Rate (MMIR): many researchers [12] and [8] said increase the interest rate leads to will be an opportunity to increase the opportunity cost also lead to increased cost of production, leading to a decline in the market share price.

Money Supply (MS): The growth of the money supply have a negative effect usually constitutes the phenomenon of inflation, leading to sell stocks and decreases in the market price, but it may affect the interest rate decline, which lowers the cost of capital and increase profits [11], [14].

Industrial Production Index (IPI): Usually there is a positive relationship between IPI and stock price in the market, which leads to an increase in profits [11], [7].

Gross Fixed Capital Formation (GFCF): Researchers pointed,[8] and [7] out that the gross fixed capital formation indicates fixed assets accumulation which can be financed through bonds and stocks, and through supply and demand in the market, leading to oversupply and low price

Consumer Price Index (CPI): consumer price index reflects the prices of goods and services during a certain period of time, which explains the degree of inflation as if it increased the interest rate increase in the discount rate the market resulting in lower present value of cash flows, which increases the rate of inflation, which is linked to a negative. [11]

Empirical Results and Discussion

Table (1) shows the descriptive statistics of variables and the results indicated the high ratio of average stock returns on 2004 (1.60) and low ratio on 2012 (0.88) this because the financial crises, so the results indicated low ratio from 2008 to 2012. The high ratio for consumer price index on 2012 (2.15) and low in 2004 (1.96) and when we diagnose the time period from 2004 to 2012 we note an ongoing annual increase because increases the prices in general economic policy. And the high ratio in money market interest rate is on 2008 (0.75) and low ratio on 2004 (0.39) so when the financial crises appeared most of financial institutions is increase the interest rate as conservative strategy. But high ratio in industrial production index is on 2012 (4.29) and low ratio in 2011 (3.30) and also note the relatively stability of ratios on gross fixed capital formation from the period study .Finally, the high ratio in money supply is on 2012 (4.50) and low ratio in 2004 (4.13) and as we note the ratios is increased from 2004 to 2012 this reflect the growth in Jordanian economy in different sectors.

Table 1. Descriptive statistics of variables

Ind. Variables	2004	2005	2006	2007	2008	2009	2010	2011	2012
St. Ret	1.60	1.30	1.27	0.85	1.31	0.89	0.92	0.98	0.88
CPI	1.96	1.98	2.01	2.03	2.07	2.08	2.10	2.12	2.15
MMIR	0.39	0.54	0.71	0.74	0.75	0.62	0.53	0.53	0.62
IPI	3.41	3.44	3.41	3.44	3.35	3.32	3.36	3.30	4.29
GFCF	0.95	0.96	0.95	0.95	0.95	0.94	0.94	0.94	0.94
MS	4.13	4.21	4.27	4.31	4.37	4.41	4.46	4.49	4.50

The table (2) indicated a correlation method to test the hypotheses in methodology of study. The results show the relationship of many economic variables and abnormal stock returns in Amman Stock Exchange. This study applied for industrial firms sector. The results indicated that the correlation coefficient in the variable consumer price index value and abnormal stock return was 0.802 and $R^2 = 0.642$ at sig = 0.009 which is less than significance level 0.01. The relationship is strong at significance of 1% and the correlation of gross fixed capital formation is 0.846 and $R^2 = 0.716$ at sig = 0.004 and this ratio is less than 1% so this mean also

is strong relationship at significant level 1 % . But money supply is 0.828 and $R^2 = 0.685$ at sig = 0.006, this ratio also strong relationship at significant level 1 % . The percentages of R^2 interpretation of changes in the dependent variable abnormal stock returns and the integral ratios interpret the other variables . But the results of money market interest rate variable and industrial production index variable are not significant relationship.

Table 2. Correlations among Economic Variables and Abnormal Stock Returns

Ind. Variables	R	R^2	Sig	St. Error
CPI	0.802	0.642	0.009***	0.999
MMIR	0.367	0.135	0.331	0.854
IPI	0.249	0.062	0.518	0.337
GFCF	0.846	0.716	0.004***	11.036
MS	0.828	0.685	0.006***	0.467

*Note: Asterisks (***) , (**) and (*) indicates significance at 1% , 5% and 10% respectively.*

The results can be explained by the strong relationship between consumer price index and abnormal returns reflect that the more CPI lead to increased inflation and this was reflected in the Jordanian economy, effectively resulting in a rise in prices and thus lead to increased cash traded transaction despite the decline in value and is strongly associated with abnormal returns. While the money supply index showed a strong relationship with the abnormal returns so the increase in the money supply in the market may lead to an opportunity for investors to buy after turnout on the sale of shares in the beginning which increases the cash flow circulating in the market it which is reflected on the returns. As the increase gross fixed capital formation Index leads to an improvement in the level of trading as a result of investors' confidence so leading to increase the opportunity to achieve abnormal returns for shares in the market. While the index money market interest rate and industrial production index variable did not show any relationship with abnormal returns which may explain there are other variables may be a strongest link in the relationship with the abnormal returns per share, in the Jordanian financial market.

Summary

This study investigated the relationship between economic variables and the abnormal returns listed by the ASE using data for 50 industrial firms from 2004 to 2012. The study indicates the importance of the market and the extent of its efficiency as the behavior of the stock return. The result explain of how the investors behavior in the financial market and the extent of information available to them to deal with the stock purchases and sales in addition to the economic variables, trade legislation, fiscal and monetary policies, which could affect the trading of shares in addition to organizing operations to groups and leader financial market which can also be their impact on the stock movements up and down.

Correlation method is designed to test the relationships between the five economic variables and abnormal returns. The results indicates the, consumer price index , gross fixed capital formation and money supply on index abnormal stock returns is statistically significant and no significant of industrial production index and money market interest rate Index and abnormal returns. The researcher recommends attention to economic variables of the fiscal and monetary policy in the Jordanian economy, which is characterized as a fast-growing so that must be the continuous analysis of market factors and determine the impact on abnormal returns for the shares of companies which strengthens the competitive position of companies in the market.

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ANALIZA ZALEŻNOŚCI POMIĘDZY SIŁAMI EKONOMICZNYMI A NORMALNYM ZWROTEM NAKŁADÓW: DOWÓD EMPIRYCZNY

Streszczenie: Rynki finansowe odgrywają istotną rolę w gospodarce Jordanii, organizują swoje działania w ciągle zmieniającym się środowisku, i pracują nad przeniesieniem zasobów lokalnych, poprzez kanały wytwórcze do znajdujących inwestycji zagranicznych. Celem niniejszego artykułu pracy jest analiza relacji między zmiennymi ekonomicznymi i anormalnych zwrotami na giełdzie w Ammanie. W artykule wykorzystane zostały dane zmiennych takich jak 50 firm przemysłowych z okresu od 2004 do 2012. Wyniki wskazują, że indeks cen konsumpcyjnych, nakłady brutto na środki trwałe, a podaż pieniądza na indeksy anormalnych zwrotów akcji, jest istotna statystycznie a niewielkie znaczenie ma wskaźnik produkcji przemysłowej wraz ze stopą procentową indeksu rynku pieniężnego i anormalnych zwrotów. Badacz zwraca uwagę na zmienne ekonomiczne polityki fiskalnej i monetarnej w gospodarce Jordanii, które charakteryzuje się jako szybko rozwijająca, tak ciągła analiza czynników rynkowych, takich jak anormalne zwroty na akcje spółek, które wzmacniają pozycje konkurencyjną przedsiębiorstw na rynku, musi być prowadzona.

Słowa kluczowe: siły ekonomiczne, anormalny zwrot nakładów, giełda, Emerging markets (Jordania)

經驗性證據：經濟力量和異常報酬之間的關係分析

摘要：金融市場在約旦經濟組織其業務在不斷變化的環境中，這是工作在當地的資源，通過生產渠道旁邊的外國投資轉移起著至關重要的作用。本研究的目的是分析在安曼證券交易所的經濟變量和異常報酬之間的關係。本文使用的變量，如 50 工業企業與 2004 年至 2012 年的數據。結果表明，居民消費價格指數，固定資本形成總額和貨幣供應量的指標異常報酬在統計上是顯著且無顯著工業生產指數和貨幣市場利率指標和異常回報。研究者建議關注在約旦經濟的財政和貨幣政策，其特點是作為一個快速成長的，這樣必須是市場因素的不斷分析和確定公司，增強股份對異常收益的影響的經濟變量公司在市場的競爭地位

關鍵詞：經濟力量，異常股票收益率，股票市場，新興市場（約旦）