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MACROECONOMICS, FIRM-SPECIFIC FACTORS AND EXCESS RETURN: AN EMPIRICAL INVESTIGATION FROM AMMAN STOCK EXCHANGE

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ABSTRACT

This study identifies the determinants of excess stock returns for all industrial firms in Jordan during the period 2007-2014. We use multiple regression model and an unbalanced panel design for obtaining results and analyzing data. The results show that excess stock return is positively and significantly affected by turnover ratio, market to book ratio, return on assets, market return, and dividend yield. It is negatively and significantly affected by financial leverage, and gross domestic product.

JEL: E44

KEYWORDS: Excess Stock Return, Excess Market Return, Macroeconomics Variables, Firm-Specific Variables, Industrial Firms, Panel Data, ASE

INTRODUCTION

Stock markets play important roles in both developed and emerging markets. Stock markets represenet the main source of funding for almost all firms and a means used by investors for investing their money. Moreover, an efficient stock market is vital for economic growth and development.

Shareholders desire higher returns on their stocks for the risk they take. Therefore, they choose to invest in firms that afford a good risk-return trade-off. Firms seeking to increase their dividend yield in an attempt to attract a particular type of shareholders, consequently, increase stock returns. Shareholders can use the stability of dividends as an indication on the firm's future prospects (Ap Gwilym *et al.,* 2000).

Previous studies argue that stock returns can be affected by many variables. These variables can be classified into two groups: (1) macroeconomics variables such as inflation rate, interest rate, money supply, and gross domestic product (GDP), and (2) firm-specific variables such as the size of the firm, financial leverage, profitability, and dividend yield. Therefore, it is important to examine factors that affecting excess stock returns. Excess returns impact different parties such as investors, firms' managers and regulators. The results of this study could benefit these parties in Jordan and around the world in making financial decisions.

The main purpose of this study is identifying the determinants of excess stock return for industrial firms listed on the Amman Stock Exchange for the period 2007- 2014. This study is an attempt to examine the relationship between financial leverage, market to book ratio, firm's size, return on assets, earnings per share, turnover ratio, dividend yield, excess market return, interest rate, inflation rate, money supply, GDP) and excess return. This study attempts to answer the following question: What are the determinants of excess return for industrial firms in Jordan?

The importance of study stems from the importance of the determinants of stock returns (macroeconomics or firm-specific factors) for industrial firms in Jordan where firms could benefit from the results of this study in making decisions as well as attracting investors. Some studies investigate only firm-specific factors (Fama and French, 1992, Morgan and Thomas, 1998, McManus *et al.*, 2004, Gharaibeh, 2014) while others investigate the macroeconomic factors (Apergis *et al*., 2011, Ouma and Muriu**,** 2014).

A few studies carried out, in the context of Jordan, identify the determinants of stock returns (AL–Qudah, 2012, El-Nader and Alraimony, 2012, Ramadan, 2016). However, this study differs from the previous ones in some important aspects. First, this study considers all industrial firms. Second, to the best of authors' knowledge, it is the first study, in the context of Jordan, to include macroeconomics and firm-specific variables. Finally, it based on a recent time period, 2007-2014. The remainder of this study is organized as follows: Section 2 reviews the literature, Section 3 introduces data and methodology, while Section 4 discusses results and the last section concludes.

LITERATURE REVIEW

Many researchers investigate the relationship between dividend policy and excess return in both developed countries and emerging markets (Fama and French, 1992, Morgan and Thomas, 1998, McManus *et al.*, 2004) and find a positive relationship between stock excess return and dividend yield. This relationship can be justified by tax payments, where the tax rate on capital gains is less than tax rate on cash dividends (Litzerberger and Ramaswamy, 1979, 1982, Blume, 1980, Keim, 1985). On the other hand, Christie and Huang (1994) find an inverse relationship between stock returns and dividend yield.

Some researchers examine the empirical relationship between leverage and excess return and find that stock return is positively affected by financial leverage (Fama and MacBeth, 1973, Ben-Zion and Shalit, 1975, Basu, 1983, Bhandari, 1988, Fama and French, 1992, Korteweg, 2004, Adami *et al*, 2010). The higher the ratio of debt in capital structure, the higher the risk and in turn, the higher the stock return. However, others find an inverse relationship between financial leverage and stock returns (Masulis, 1983). On the other hand, Gharaibeh (2014) finds no relationship between capital structure and stock return.

Some studies find a negative relationship between stock returns and firm's size (Ben-Zion and Shalit, 1975, Banz, 1981, Keim, 1983, 1985, Chan *et al.*, 1991, Fama and French, 1992, Rao *et al.*, 1992, Morgan and Thomas, 1998, McManus *et al.,* 2004, AL–Qudah, 2012, Gunarathna, 2014). Investors in large firms require less return on their stocks than investors in small firms because large firms are more diversified, have easy access to financial markets and show less risk than small firms.

Some researchers investigate the relation between stock return and market return and suggest a positive relationship between the two variables (Fama and MacBeth, 1973, Blume, 1980, Reinganum, 1981, Keim, 1985, 1986, Lakonishok and Shapiro, 1986, Fama and French, 1992, Bae and Duvall, 1996, Morgan and Thomas, 1998, McManus *et al.*, 2004). That is, the higher the market returns, the higher the stock return. Market return leads to increase risk, which in turn leads to increase stock return.

Previous literature suggests an inverse relationship between stock return and stock liquidity (Baradarannia and Peat, 20113, Akram, 2014, Gharaibeh, 2014, Chiang and Zheng, 2015). That is, the higher the liquidity, the lower the return. Investors who hold liquid stocks can sell their stocks readily and quickly without a significant loss of value, accordingly, require less return. However, some studies find a positive relationship between stock liquidity and stock return (Zaremba and Konieczka, 2014).

Previous studies argue a positive relationship between the ratio of the market value per share to the book value per share, as a proxy of growth, and stock return (Bergrren *et al*., 2014). Firms borrow to expand

their operations which cause increasing debt in their capital structure which leads to increase risk and, as a result, increasing stock return.

Many studies examine the relationship between profitability and stock return. Some studies find a negative relationship between stock return and return on assets (Bergrren *et al*., 2014). However, (Gharaibeh *et al*., 2007, Alnajjar, 2014) find a positive relationship between stock return and profitability. On the other hand, Njoki (2014) finds no relationship between stock return and return on assets.

Previous literature disagree on the relationship between stock return and inflation. Some studies find a positive relationship between inflation and stock return (Apergis *et al.,* 2011, Ouma and Muriu**,** 2014) which is most likely clarified by the insufficiency of the hedging role of stocks against inflation. However, El-Nader and Alraimony, 2012; and Ramadan, 2016 suggest that stock return is inversely affected by inflation. The increasing inflation rate, in general, tights the future economic policies and the whole economy is inversely affected (Maysami and Koh, 2000). On the other hand, some studies find no relationship between inflation and stock return (Bae and Duvall, 1996, Rapach, 2002, Sun, 2008**,** Butt *et al.,* 2010, Kirui *et al.,* 2014, Alam and Rashid, 2014).

Previous research suggests that gross domestic product (GDP) is related to stock return. Some studies find a positive relationship between stock return and gross domestic product (Hassapis and Kalyvitis, 2002, Singh and Varsha, 2011, El-Nader and Alraimony, 2012, Ramadan, 2016). This relationship is due to the response of stock market participants to macroeconomic factors tightening to increasing (decreasing) production. For example, increasing (decreasing) employment, is affecting positively by earnings and future business conditions. This relation is most likely due to the relationship between expected economic growth and the cost of capital (Hassapis and Kalyvitis, 2002). On the other hand, some studies find no relationship between gross domestic product and stock return (Sloan, 2012, Kirui *et al.,* 2014).

Previous research debates the relationship between stock returns and interest rates. Some studies find a negative association between interest rate and stock return (Maysami and Koh, 2000, Alam and Rashid, 2014, Ramadan, 2016). This relationship is due to increasing the cost of investment in the stock market as well as the increasing of the cost of borrowing from banks. However, some studies find no relationship between stock return and interest rate (Bae and Duvall, 1996, Sun, 2008, Butt *et al.,* 2010, Quadir, 2012, Kirui *et al.,* 2014, Ouma and Muriu, 2014).

Previous research suggests a relationship between stock return and money supply. Some studies find a positive relationship between money supply and stock return (Ouma and Muriu, 2014, Alam and Rashid, 2014, Ramadan, 2016). The movements in money supply could affect economic activities positively. Gan *et al.* (2006) show the cost of keeping cash is negatively affected by increasing interest rates which in turn leads to reduce stock returns. However, others find no relationship between stock return and money supply (Butt *et al.,* 2010, El-Nader and Alraimony, 2012).

A few studies carried out in the context of Jordan identify the determinants of stock returns (AL–Qudah, 2012, El-Nader and Alraimony, 2012, Ramadan, 2016). However, this study differs from the studies of AL–Qudah (2012), El-Nader and Alraimony (2012) and Ramadan (2016) in the following aspects. AL–Qudah (2012) considers the following independent variables (Balance of payments, Number of Employees and the size of the company, interest rate, budget deficits, gross domestic, and inflation rate). Ramadan (2016) considers the following independent variables (interest, inflation rates, money supply, and GDP). El-Nader and Alraimony (2012) examine the independent variables (Real money supply, real gross domestic product, consumer price index, real exchange rate, and weighted average interest rates on loans and advances. In contrast, this study examines the independent variables (financial leverage, earnings per share, the size of the firm, stock liquidity, profitability, the ratio of the market value of share to the book value per share, dividend yield, market return, inflation rate, interest rate, money supply, and GDP). AL–

Qudah (2012) and El-Nader and Alraimony (2012) examine the determinants of stock return. Ramadan (2016) identify the determinants of stock prices. In contrast this study examines excess return.

DATA AND METHODOLOGY

This section presents the population and the sample of study, sources of data, statistical approach, variables definition, study hypotheses and the model of study. All industrial firms listed in the Amman Stock Exchange during the period (2007- 2014) are selected to identify the determinants of excess return. The sample differs from year-to-year during the period of study because of missing data for some firms in some years. The final number of observations is 516. We use industrial firms because the industrial sector considers is the biggest sector in Jordan and contributes most to the Jordanian Gross Domestic Product (GDP). The Amman Stock Exchange and the Central Bank of Jordan are the main sources of data.

We use a T–test to determine the significance of associations between each explanatory variable and the explained variable. We use an F–test to examine overall significance of the regression model. We use two statistical software packages (SPSS and STATA) for obtaining summary statistics and diagnostic tests as well as the multiple regression model results. We use an unbalanced panel data statistical approach for identifying the determinants of excess return. In addition, we use a correlation coefficients matrix to identify initial information about relationship direction between each explanatory variable and the explained variable as well as detecting Multicollinearity. Variance inflation factor (VIF) can also be used for checking Multicollinearity (Asteriou and Hall, 2007**;** Gujarati and Porter, 2010; and Wooldridge, 2013).

Variable Definitions

Excess return (the dependent variable) is calculated by subtracting risk free rate on T-bills from the natural logarithm of stock return. However, we calculate stock return itself by dividing the sum of the stock price at the last trading day and the dividends paid during the year on the price of stock at the first trading day in the same year. Twelve-month treasury bills are used instead on three-month because of data availability. The calculations algebraically appear as follows:

$$(LnRi,_t - R_{f,t}) = Ln(\frac{Pi,_t + Di,_t}{Pi,_{t-1}}) - R_{f,t} \quad (1)$$

Where, $R_{f,t}$, $Pi,_t$, $Pi,_{t-1}$, $Di,_t$ are the risk free rate, stock price at the last trading day, stock price at the first trading day, and dividends for firm i in year t, respectively.

We calculate financial leverage by dividing total liabilities by total assets, algebraically expressed as follows:

$$LEVi,t = \frac{TLi,t}{TAi,t} \quad (2)$$

Where, TLi,t, TAi,t are total liabilities, total assets for firm i in year t, respectively.

We calculate market to book ratio by dividing the market value of stock by its book value. Algebraically the calculation appears as follows:

$$MBi,t = \frac{MVi,t}{BVi,t} \quad (3)$$

Where, MVi,t , BVi,t are market value of stock, book value of stock for firm i in year t, respectively. We calculate firm size by taking the natural logarithm of the market capitalization, expressed algebraically as:

$$SIZEi,t = LN(MCi,t) \tag{4}$$

Where, MCi,t equals market capitalization for firm i in year t.

Earnings per share equals net income divided by the number of shares outstanding as follows:

$$EPSi,t = \frac{NIi,t}{\#Si,t} \tag{5}$$

Where, NIi,t $\#Si,t$ denote net income and number of shares outstanding for firm i in year t, respectively.

Return on assets equals net income divided by total assets as follows:

$$ROAi,t = \frac{NIi,t}{TAi,t} \tag{6}$$

Where, NIi,t , TAi,t are net income and total assets, for firm i in year t, respectively.

Turnover ratio equals the number of shares traded divided by the number of shares outstanding as follows**:**

$$TURNi,t = \frac{\#TSi,t}{\#OSi,t} \tag{7}$$

Where, $\#TSi,t$, $\#OSi,t$ are the number of shares traded and the number of shares outstanding for firm i in year t, respectively.

We calculate excess market return by subtracting the risk free rate from the natural logarithm of market return. Market return equals market index (ASE index) in the current year divided by market index (ASE index) in the previous year as follows:

$$(LnR_{m,t} - R_{f,t} = Ln(\frac{INDEX_t}{INDEX_{t-1}}) - R_{f,t} \tag{8}$$

Where, $INDEX_t$, $INDEX_{t-1}$ are ASE market index in the current and previous year, respectively.

Dividend yield equals cash dividends per share divided by stock price at the first trading day of year as follows:

$$DYi,_t = \sum \frac{DIVi,_t}{Pi,_{t-1}} \tag{9}$$

Where, $DIVi,t$, $Pi,t-1$ are dividends and stock price in the first trading day for firm i in year t, respectively.

Interest rate equals the interest rate on loans.

We calculate inflation by dividing the product of the difference in consumer price index in the previous year and consumer price index in the current year by the consumer price index in the previous year. This relationship is represented algebraically as:

$$INF\ t = (\ CPIt - CPI\ t-1) \div CPI\ t-1 \quad (10)$$

Where, $CPIt, CPI\ t-1$ are the consumer price index in the current and previous year, respectively.

Money supply: equals the yield from subtracting the money supply in the narrower from (M1) in the previous year from the money supply in the current year on the money supply in the previous year as follows:

$$M1\ t = (M1,t - M1,t-1) \div M1,t-1 \quad (11)$$

Where,

$M1,t,\ M1,t-1$ are the money supply in the current and the previous year, respectively.

Gross domestic product is calculated by dividing the product of the annual change in gross domestic product by the gross domestic product in the previous year as follows:

$$GDP\ t = (GDP\ t - GDP\ t-1) \div GDP\ t-1 \quad (12)$$

Where, $GDP\ t,\ GDP\ t-1$ are the gross domestic product in the current and previous year, respectively.

Study Hypotheses

To answer the questions posed in this study, the following hypotheses are constructed:

H01: There is no relationship between financial leverage and excess return.
H02: There is no relationship between market to book ratio and excess return.
H03: There is no relationship between firm's size and excess return.
H04: There is no relationship between return on assets and excess return.
H05: There is no relationship between earnings per share and excess return.
H06: There is no relationship between turnover ratio and excess return.
H07: There is no relationship between dividend yield and excess return.
H08: There is no relationship between excess market return and excess return.
H09: There is no relationship between interest rate and excess return.
H010: There is no relationship between inflation and excess return.
H011: There is no relationship between money supply and excess return.
H012: There is no relationship between GDP and excess return.

The Model of Study

We develop the following model for identifying the determinants of excess stock return:

$$ERi,t = \beta 0 + \beta 1TURNi,t + \beta 2MBi,t + \beta 3EPSi,t + \beta 4SIZEi,t + \beta 5LEVi,t + \beta 6ROAi,t + \beta 7IRt + \beta 8INFt + \beta 9GDPt + \beta 10M1t + \beta 11EMRt + \beta 12DYi,t + Ei,t \quad (13)$$

Where: $ER, TURN, MB, EPS, SIZE, LEV, ROA, IR, INF, GDP, M1, EMR, DY,$ are excess return, turnover ratio, market to book ratio, earnings per share, firm's size, financial leverage, return on assets, interest rate, inflation rate, gross domestic product, money supply, excess market return, and dividend yield, respectively. E is a random error, i denotes firm, t denotes year, $\beta(s)$ denotes the parameters.

RESULTS

We examine the reliability of results by doing some tests. We use diagnostic tests for examining whether data is ready for analysis as well as the reliability of results. We use correlation matrix and variance inflation factor (VIF) for detecting Multicollinearity problems.

Diagnostic Tests

We use a correlation coefficients matrix to provide us with a picture of the direction of relationship between two independent variables as well as the dependent variable. A correlation coefficient of 70% or more indicates Multicollinearity (Asteriou and Hall, 2007; Gujarati and Porter, 2010; and Wooldridge, 2013). Table (1) provides the correlation coefficients between independent variables as well as between independents and the dependent variable for detecting Multicollinearty problems and shows the direction among variables.

Table 1: The Correlation Matrix

	ER	**EMR**	**TURN**	**MB**	**EPS**	**SIZE**	**LEV**
ER	1.000						
EMR	0.2402**	1.000					
TURN	0.1061*	0.0035-	1.000				
MB	0.2920**	0.0353	0.1029*-	1.000			
EPS	0.2069**	0.0070	-0.1367**	0.3201**	1.000		
SIZE	0.1628**	0.0280	-0.1987**	0.4104**	0.6419**	1.000	
LEV	0.1666**-	-0.0116	0.0993*	-0.0091	-0.2296**	-0.1543**	1.000
ROA	0.2906**	0.077-	-0.2413**	0.1195**	0.6688**	0.5003**	-0.2651**
IR	0.1180**-	-0.5558**	0.0729	0.0339	0.0063-	0.0184	-0.0214
INF	-0.1077*	0.5440**-	0.0561	0.0451	0.0204	0.0217	-0.0070
GDP	0.0026	-0.0052	0.0842	0.1367**	0.0380	0.0767	-0.0407
M1	-0.0548	-0.3301**	-0.0158	0.0097	-0.0124	0.0093	0.0105
DY	0.3588**	0.1343**	-0.0691	0.0332	0.2817**	0.2078**	-0.1798**
	ROA	**IR**	**INF**	**GDP**	**M1**	**DY**	
ROA	1.000						
IR	-0.0180	1.000					
INF	-0.0092	0.6729**	1.000				
GDP	0.0561	0.4167**	0.6868**	1.000			
M1	-0.0504	0.3845**	0.4171**	0.1396**	1.000		
DY	0.4009**	-0.1007*	-0.0663	0.0085	-0.0645	1.000	

*This table presents the correlation coefficients among variables. ER, EMR, TURN, MB, EPS, SIZE, LEV, ROA, IR, INF, GDP, M1, and DY are excess return, excess market return, turnover ratio, market to book ratio, earnings per share, firm's size, leverage, return on assets, interest rate, inflation rate, gross domestic product, money supply, and dividend yield, respectively. **, * Correlation coefficient is significant at 0.05, 0 .10, respectively by using 2-tailed test.*

Table (1) shows the highest correlation coefficient is 0.6868 which is less than 0.70 (cut-off point) which is an evidence against the presence of multicollinearty. Table (1) also shows the highest correlation occurs between gross domestic product (GDP) and inflation rate, which is positive and equal to 0.6868. That is, the higher the gross domestic product, the higher the inflation rate. Next the correlation between inflation rate and interest rate is also positive, implying that the higher the inflation rate, the higher the interest rate. On the other hand, the lowest correlation coefficient is between gross domestic product (GDP) and excess stock return, which is positive and equals 0.0026, indicating that the higher the GDP, the higher the stock return.

Table (2) presents the Variance Inflation Factor (VIF) for all independent variables, which is an alternate method to detect multicollinearity (Asteriou and Hall, 2007; Gujarati and Porter, 2010; and Wooldridge, 2013). Table (2) shows that the highest variance inflation factor (VIF) is for inflation rate which equals 4.93 followed by gross domestic product. The lowest VIF occurs for financial leverage at 1.10, implying that the variance inflation factor (VIF) for all independent variables is less than 10 (cut-off point) which is an evidence against the multicollinearity problem among variables.

Table 2: Variance Inflation Factor (VIF)

Variable	VIF	1/VIF
INF	4.93	0.2027
GDP	3.24	0.3088
EMR	2.52	0.3968
EPS	2.48	0.4028
ROA	2.21	0.4528
IR	2.12	0.4715
SIZE	1.93	0.5180
M1	1.31	0.7645
MB	1.29	0.7752
DY	1.22	0.8182
TURN	1.11	0.9001
LEV	1.10	0.9105
Mean VIF	2.12	

This table shows the variance inflation factor (VIF) for all independent variables used in the analysis and the mean of VIF as well. Column headed variable provides the independent variables while the second column shows the variance inflation factor. The last column reports the tolerance value for all independent variables.

Table (3) provides the Durbin-Watson (DW) tests statistics, which detect the autocorrelation among errors. It ranges from zero to four. A DW statistic equal to two or close to two, it is evidence against autocorrelation among errors (Asteriou and Hall, 2007; Gujarati and Porter, 2010; and Wooldridge, 2013). In addition, this table provides the R Square and adjusted R2.

Table (3) shows the Durbin-Watson value is very close to two, implying that there exists no autocorrelations among errors. Further, Table (3) shows that all independent variables included in the model explains about 32 percent of the variability in the excess stock return, while 68 percent can be attributed to external factors not included in the regression model.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.5670	0.3220	0.3060	0.3410	2.077

This table demonstrates the model summary. The first column labeled model indicates the number of models to be included in the analysis. R refers to the correlation coefficient. The column headed R Squre reports the amount of the coefficient of determination. The fifth column labeled Std. Error of the estimate refers to the standard error of the estimated regression. The last column provides the value of Durbin-Watson (test for detecting autocorrelation among errors).

Summary Statistics

Table (4) presents the mean, standard deviations, minimum, and maximum for all variables (independent and dependent) used in the study. Table (4) shows that the turnover ratio, a proxy of stock liquidity, ranges from about 0.00, implying that at least one industrial firm has no trading for some time during the period of study, to about 31 with a mean of 0.88 and a standard deviation of 2.175, showing a high variation among industrial firms regarding turnover ratio. The market to book ratio ranges from 0.222 to 7.47 with a mean of 1.42, and a standard deviation of 1.07. Earnings per share varies from -0.657, implying that some firms having losses during the period of study to 3.74 with a mean of 0.081 and a standard deviation of 0.427.

Table 4: Summary Statistics

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
TURN	516	0.8848	2.175	0.0000	30.73
MB	516	1.426	1.069	0.2225	7.473
EPS	516	0.0810	0.4271	-0.6573	3.737
SIZE	516	7.067	0.6601	5.712	9.588
LEV	516	0.3393	0.2061	0.0039	0.9447
ROA	516	0.0004-	0.1117	-0.9687	0.4329
IR	516	8.993	0.2250	8.670	9.480
INF	516	0.0532	0.0421	-0.0070	0.1490
GDP	516	0.0353	0.0134	0.0230	0.0600
M1	516	0.0935	0.0505	-0.0083	0.1660
EMR	516	-0.0929	0.1439	-0.3625	0.1370
ER	516	-0.0932	0.4092	-1.863	1.1370
DY	516	0.0230	0.0416	0.0000	0.4486

This table reports the descriptive statistics for all variables. The first column refers to the variables. The second column labeled Obs. Refers to the number of observations for all variables. Mean is the average for each variable over the period (2007-2014). The column labeled Std. Dev. reports the standard deviation for each variable. Min and Max are the minimum value and the maximum for each variable over the period of study, respectively.

The natural lograthim of firm's size ranges from 5.7 to 9.588 with a mean of 7.06 and a standard deviation of 0.66. Financial leverage varies from 0.003 to 0.944, implying that some firms based slightly on debt to finance activates. It has a mean of 0.339 indicating that 0.339 of the capital structure of industrial firms in Jordan depend on debt for funding, on average, and a standard deviation of 0.206. Return on assets varies from about -0.96, indicating that some firms have losses, to 0.432, implying that some firms earn (JOD0.432) net income.

Interest rate ranges from 0.0867 to 0.0948 with a mean of 0.0899 and a standard deviation of 0.0225, implying a slight variation in interest rate in Jordan over the period of study. Inflation rate ranges from -0.007, indicating that the consumer price index in some year is less than the consumer price index in the previous year, to 0.149 with a mean of 0.05 and a standard deviation of 0.04 indicating that the inflation rate in Jordan varies slightly over the period of (2007-2014).

Gross domestic product varies from 0.023 to 0.06 with a mean of 0.035 and a standard deviation of 0.013. Money supply varies from -0.0083, indicating that money supply in one year is less than money supply in the previous year, to 0.166 with a mean of 0.09 and a standard deviation of 0.05, indicating that the gross domestic product varies slightly during the period of study. Excess market returns range from -0.36 to 0.137 with a mean of -0.09 and a standard deviation of 0.14. Dividend yield, the last independent variable, varies from zero, indicating that some firms do not pay dividends at all at least in one year, to 0.448 with a mean of 0.02 and a standard deviation of 0.04. Excess stock return, the dependent variable, varies from -1.86 to 1.58 with a mean of -0.09 and a standard deviation of 0.41.

Table (5) provides the Hausman test used for determining the appropriate model for analysis (fixed effect or random effect). Rejection of the null hypothesis provides evidence against the random effect. However, the random effect model is more suitable to our data if we fail to reject the null hypothesis. As can be seen from Table (5) the random effect is the more appropriate model than the fixed because the p-value of 0.8191 is higher than both 0.01 and 0.05 (the significance levels) which is an evidence against the fixed effect.

Table 5: Hausman Test

	Coefficients			
Variables	(b) Fe.	B)(Re.	b-B)(Difference	Sqrt (diag (v_b-v_B) S.E.
TURN	0.0358	0.0397	-0.0038	0.0035
MB	0.1404	0.1311	-0.0092	0.0076
EPS	-0.0954	-0.0946	-0.0008	0.0260
SIZE	-0.0658	-0.0456	-0.0202	0.0170
LEV	-0.1847	-0.2065	0.0218	0.0421
ROA	1.009	0.9700	0.0399	0.0813
IR	0.0036	-0.0110	0.0147	0.0121
INF	1.132	1.183	-0.0510	0.1024
GDP	-4.750	-4.807	0.0569	0.2428
M1	0.2499	0.2522	-0.0023	0.0282
EMR	0.6886	0.7029	-0.0143	0.0265
DY	2.900	2.561	0.3387	0.1855

b = Consistent under Ho and Ha; obtained from xtreg
B = Inconsistent under Ha, efficient under Ho; obtained from xtreg
Test: Ho: difference in coefficients not systematic
$chi2\ (12) = 7.550$
$prob > chi2 = 0.8191$
This table shows the results of Hausman test. The first column presents the independent variables. The two columns labeled Fe., Re. indicate the coefficient for each independent variable by using fixed effect model and random effect model, respectively. The column labeled difference indicates the difference between the coefficient of each variable by using fixed effect model and random effect model, respectively. The last column refers the standard error for each independent variable.

Regression Results

Table (6) presents the regression estimates of the equation:

$$ERi,t = \beta 0 + \beta 1 TURNi,t + \beta 2 MBi,t + \beta 3 EPSi,t + \beta 4 SIZEi,t + \beta 5 LEVi,t + \beta 6 ROAi,t + \beta 7 IRt + \beta 8 INFt + \beta 9 GDPt + \beta 10 M1t + \beta 11 EMRt + \beta 12 DYi,t + Ei,t$$

Table 6: Regression Coefficients

ER	Coef.	Std. Err.	Z	$P > \|Z\|$	[95% Conf. Interval]	
Constant	0.2738	0.8645	0.3200	0.7510	-1.420	1.968
TURN	0.0397***	0.0072	5.450	0.0000	0.0254	0.0540
MB	0.1311***	0.0159	8.200	0.0000	0.0998	0.1625
EPS	-0.0946*	0.0555	-1.700	0.0890	-0.2035	0.0143
SIZE	-0.0456	0.0317	-1.440	0.1510	-0.1079	0.0166
LEV	-0.2065***	0.0767	-2.690	0.0070	-0.3570	-0.0560
ROA	0.9700***	0.1999	4.850	0.0000	0.5780	1.361
IR	0.0110-	0.0966	-0.1100	0.9090	-0.2003	0.1782
INF	1.183	0.7866	1.500	0.1320	-0.3583	2.725
GDP	-4.807**	1.994	-2.410	0.0160	-8.717	-0.8977
M1	0.2522	0.3378	0.7500	0.4550	-0.4099	0.9145
EMR	0.7029***	0.1646	4.270	0.0000	0.3802	1.025
DY	2.561***	0.3991	6.420	0.0000	1.420	3.343

*This table reports the regression estimates based on equation 13. The first column presents the variables to be included in the analysis. The second column reports the regression coefficient for each independent variable and the constant as well. The column headed Std. Err. Indicates the standard error for each independent variable and constant as well. The fourth column refers to the Z-score for constant and all independents. The fifth column reports the significance for each independent variable and the constant as well. The last column shows the confidence level for each independent variable and the constant as well. ***,**,* indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.*

Table (6) shows that excess stock return is highly significantly positively affected by turnover ratio with a coefficient of 0.039, implying that a 1 unit increase in turnover ratio (TURN) would have an increase about 0.039 percent in excess stock return, other things being equal. That is, the lower the turnover ratio, the lower the excess stock returns. This relationship is explained by investors who hold highly liquid stocks require higher returns because their stocks are easily to trade. This result is similar to the results of the

study of (Zaremba and Konieczka, 2014), while inconsistent with the results of the study of (Baradarannia and Peat, 2013, Akram, 2014, Gharaibeh, 2014, Chiang and Zheng, 2015).

Excess stock return is highly significantly positively affected by the ratio of the market value per share to the book value per share with a coefficient of 0.131, implying that a 1 unit increase in market to book ratio would have an increase about 0.131 percent in excess stock return, other things being equal. That is, the higher the market to book ratio, the higher the excess stock returns. Firms borrowing to expand their operations can cause an increasing of debt in their capital structure that in turn leads to increase risk and as a result increasing stock return. This result is similar to results of the study of (Bergrren *et al*., 2014).

There is an insignificant negative relationship between earnings per share and excess stock return with a coefficient of -0.095. This result is in contrast with the results of the study of (Chambers *et al*., 2013) who finds a positive relationship between earnings per share and stock return.

There is an insignificant negative relationship between the size of the firm and excess stock return with a coefficient of -0.0456. This result is in contrast with the results of the study of (Ben-Zion and Shalit, 1975, Banz, 1981, Keim, 1983, 1985, Chan *et al.,* 1991, Fama and French, 1992, Rao *et al.*, 1992, Morgan and Thomas, 1998, McManus *et al.,* 2004, AL–Qudah, 2012, Gunarathna, 2014), who find a negative relationship between stock return and the size of the firm.

Excess stock return is highly significantly negatively affected by financial leverage with a coefficient of -0.21, implying that a 1 unit increase in financial leverage would have a decrease about 0.21 percent in excess stock return, other things being equal. The higher the financial leverage, the lower the excess stock return. This relationship depends on signaling theory, where investors in firms that borrow to invest in profitable projects receive a positive signal that this firm will obtain profits in the future. This in turn leads to decreases in default risk and in turn a lower required rate of return. This result is inconsistent with the results of the study of (Fama and MacBeth, 1973, Ben-Zion and Shalit, 1975, Basu, 1983, Bhandari, 1988, Fama and French, 1992, Korteweg, 2004, Adami *et al*., 2010).

Excess stock return is highly significant positively affected by return on assets with a coefficient of 0.97, implying that a one-unit increase in return on assets would have an increase about 0.97 percent in excess stock return, other things being equal. That is, the higher return on assets, the higher the excess stock returns. Firms borrow to expand their operations which cause an increase of debt in their capital structure which in turn leads to increase risk and increasing stock return. This result is similar to results of the study of (Gharaibeh *et al*., 2007, Alnajjar, 2014) while inconsistent with results of (Bergrren *et al*., 2014).

There is an insignificant negative relationship between interest rate and excess return with a coefficient of -0.011. This result is consistent with the results of the study of (Bae and Duvall,1996, Sun, 2008, Butt *et al.*, 2010, Quadir, 2012, Kirui *et al.*, 2014, Ouma and Muriu, 2014). However, this result is in contrast with the results of the study of (Maysami and Koh, 2000, Alam and Rashid, 2014, Ramadan, 2016) who find a negative relationship between the two variables. This relationship is due to increasing the cost of investment in the stock market as well as the increasing of the cost of borrowing from banks.

There is an insignificant positive relationship between inflation rate and excess stock return with a coefficient of 1.18. This result is consistent with the results of the study of (Bae and Duvall,1996, Rapach, 2002, Sun , 2008, Butt *et al.*, 2010, Kirui *et al.*, 2014, Alam and Rashid, 2014). However, this result contrasts with results of the study of (Apergis *et al.,* 2011, Ouma and Muriu, 2014) who find a positive relationship between inflation rate and stock return. Insufficiency of the hedging role of stocks against inflation clarifies this result. Further, this result is inconsistent with the results of the study of (El-Nader and Alraimony, 2012, Ramadan, 2016) who find a negative relationship between inflation rate and stock

return. The increasing of inflation rate, in general, tightens future economic policies and the whole economy is expected to be inversely affected (Maysami and Koh, 2000).

Excess stock return is highly significant negatively affected by gross domestic product (GDP) with a coefficient of -4.80, implying that a one-unit increase in gross domestic product (GDP) implies a decrease about 4.80 percent in excess stock return, other things being equal. That is, the higher the gross domestic product (GDP), the lower the excess stock returns. This result is inconsistent with the results of (Hassapis and Kalyvitis, 2002, Singh, 2011, El-Nader and Alraimony, 2012, Ramadan, 2016) who find a positive relationship between stock return and gross domestic product. This relationship is due to the response of participants in the stock market to macroeconomic factors tightening to increasing (decreasing) production. For example, increasing (decreasing) employment, positively affects earnings and future business conditions. In addition, this relation is may be due to the relationship between expected economic growth and the cost of capital (Hassapis and Kalyvitis, 2002).

There is an insignificant positive relationship between money supply, as a proxy of monetary policy, and excess stock return with a coefficient of 0.25. This result is consistent with the results of (Butt *et al.*, 2010, El-Nader and Alraimony, 2012) while in contrast with the results of (Ouma and Muriu, 2014); Alam and Rashid (2014); and Ramadan (2016) who find a positive and significance relationship between money supply and stock return. The movements in money supply affect economic activities positively. Gan *et al.* (2006) show the cost of keeping cash is negatively affected by increasing the interest rate which in turn leads to reduce stock return.

Excess stock return is highly significant and positively affected by market return with a coefficient of 0.70, implying that a one-unit increase in excess market return results in an increase about 0.70 percent in excess stock return, other things being equal. This result is similar to results of the studies of (Fama and MacBeth, 1973, Blume, 1980, Reinganum, 1981, Keim, 1985, 1986, Lakonishok and Shapiro, 1986, Fama and French, 1992, Bae and Duvall, 1996, Morgan and Thomas, 1998, McManus *et al.,* 2004). That is, the higher the market returns, the higher the stock return. Market return leads to increase risk that in turn leads to increase stock return.

Finally, excess stock return is highly significant positively affected by dividend yield with a coefficient of 2.56, implying that a one-unit increase in dividend yield would have an increase about 2.56 percent in excess stock return, other things being equal. That is, the higher the dividend yields, the higher the excess stock return. This result is similar to results of the study of (Fama and French, 1992, Morgan and Thomas, 1998, McManus *et al.,* 2004) who find a positive relationship between excess return and dividend yield. This relationship justified by tax payment where tax rate on capital gains is less than tax rate on cash dividend (Litzerberger and Ramaswamy, 1979, 1982, Blume, 1980, Keim, 1985). This contrasts with results of the study of (Christie and Huang, 1994) who find a negative relationship between dividend yield and stock return.

CONCLUDING COMMENTS

This study concludes that: excess stock return is highly significant positively affected by (turnover ratio, the ratio of the market value per share to the book value per share, return on assets, market return, and dividend yield). Excess return is significantly inversely affected by (financial leverage and gross domestic product). There is an insignificant negative relationship between excess stock return and the following variables (earnings per share, the size of the firm, and interest rate). There is an insignificant positive relationship with inflation rate and money supply. W e recommend the future research to extend the sample by including all sectors, and add more independent variables to the analysis such as: exchange rates, payout ratio. Future studies might also use monthly or quarterly data.

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