European Journal of Business and Management
ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online)
Vol.8, No.36, 2016


# The Impact of Interest Rate & Inflation Rate on the Stocks Returns in Abu Dhabi Securities Exchange (ADX): Evidence from United Arab Emirates

Dr. Anas Ali Al-Qudah Dr. Myriam Aloulou
Assistant Professors
ECT, Emirates College of Technology, Banking & Finance Dept., Millennium Tower, Sheikh Hamdan Street
P. O. Box: 41009, Abu Dhabi, United Arab Emirates

**Abstract**
This study aims to discover the Impact of Interest Rate & Inflation Rate on the Stocks Returns in Abu Dhabi Securities Exchange (ADX). The researchers take approximately 45% as a random sample of the companies listed in ADX, for many sectors to achieve this goal.After researchers collect the data needed to achieve this study, they calculate some of ratios as variables of study, like the annual Return for the companies ($R_{it}$), Interest Rate ($Int.R_{it}$), Inflation Rate ($Inf.R_{it}$) and they used Statistical Package for the Social Science (SPSS) to analyze the data collected.The results of this study were the existence statistically significant *Impact* for the Interest Rate & Inflation Rate on the Stocks Return (Rit) in the companies listed in Abu Dhabi Securities Exchange (ADX) for the study period. And The Independent variables in this study Inflation Rate ($Inf.R_{it}$) and Interest Rate ($Int.R_{it}$) can explain 19.6% of changes that happened in the stock return (Rit) in (ADX).And there is a *Negative* statistically significant Impact for the Interest Rate ($Int.R_{it}$) on the Stocks Return (Rit) in the companies listed in (ADX) for the same period, and the Interest Rate ($Int.R_{it}$) only, can explain 10.9 % of changes that happened in the stock return ($R_{it}$) in (ADX).And there is a *Negative* statistically significant Impact for the Inflation Rate ($Inf.R_{it}$) on the Stocks Return ($R_{it}$) in the companies listed in (ADX) for the study period, and the inflation rate ($Inf.R_{it}$) only, can explain 5.1% of changes that happened in the stock return ($R_{it}$) in Abu Dhabi Securities Exchange (ADX).
**JEL classification**: ***G20, G21, G24, G30, G31, E31, E3, G12, G1***
**Keywords:** Abu Dhabi securities Exchange **(ADX),** Stock Return **($R_{it}$)**, study Inflation Rate (**$Inf.R_{it}$**), Interest Rate (**$Int.R_{it}$**).

## 1. Introduction

Fluctuations of Interest rate are broadly recognized as a major source of uncertainty for firms. According to survey evidence conducted by Graham and Harvey (2001), from the U.S. firm manager's view that the interest rate risk is the second most important risk factor in the U.S market, only behind market risk. Financial theory states that movements in interest rates affect both the firm's expectations about future corporate cash flows and the discount rate employed to value these cash flows and, hence, the value of the firm.

The impact of interest rate volatility on the market value of companies has received a great deal of attention in the economic studies, although much of the empirical research has focused on financial institutions, because of the particularly interest rate sensitive stain of the banking industry (Flannery and James, 1984; Staikouras, 2003 and 2006; Hahm, 2004). Interest rate volatility may also spend a significant impact on nonfinancial corporations, especially through its effect on the valuing costs and the value of financial assets and liabilities possession by the firms (Bartram, 2002).

Inflation Rate in the United Arab Emirates is expected to be 1.20 percent by the end of 2016, according to Trading Economics global macro models and analysts expectations. The estimate Inflation Rate in the United Arab Emirates to stand at 2.10 in 12 months, in the long-term, the United Arab Emirates Inflation Rate is projected to trend around 3.30 percent in 2020, according to econometric models.

United Arab Emirates Inflation Rate Forecasts are projected using an autoregressive integrated moving average (ARIMA) model calibrated using analysts expectations. the model the past behavior of United Arab Emirates Inflation Rate using vast amounts of historical data and adjust the coefficients of the econometric model by taking into account analysts assessments and future expectations.

## 2. The study Objective

The aim of this study is to survey the impact each inflation rate & interest rates on the Abu Dhabi Securities Exchange (ADX) stocks returns at many industry level across different years by using SPSS method. The application of SPSS enables us to study the impact interest rates and inflation on the stock return during specified period, as well as SPSS regression, variance, and correlation used to a deeper understanding of the true relationship between these variables. In this study, the main contribution is the proposal of a hybrid model between Fama and French (1993) three-factor model and Flannery and James (1984), to estimate the Abu Dhabi

(ADX) stocks returns sensitivity to interest rate fluctuations and inflation rate movements.

## 3. Literature review

The volatility in interest rates on the value of firms has given rise to a abundance research activity during the past decades. This literature has concentrated on the banking industry due to the special nature of the financial business. In particular, the maturity misallocate between banks' financial assets and liabilities resulting from the maturity transformation function of banking institutions, i.e. the financing of long-term loans with short-term deposits, has been usually identified as the main factor responsible for the high interest rate sensitivity of banks (Flannery and James, 1984; Hahm, 2004; Czaja et al., 2009 and 2010).

A broad consensus emerges from the literature regarding several relevant issues. First, the practical research in this area generally reports a significant passive effect of changes in market interest rates on stock returns of both financial and nonfinancial companies (Lynge and Zumwalt, 1980; Prasad and Rajan, 1995; Dinenis and Staikouras, 1998; Reilly et al., 2007). Second, the sensitivity of stock returns to volatility in long-term interest rates is bigger greater than the sensitivity to changes in short-term rates (Oertmann et al., 2000; Bartram, 2002; Czaja et al., 2009; Ferrer et al., 2010). Third, nonfinancial firms in regulated and/or highly indebted industries such as Utilities, Electricity, Real Estate and Technology and Telecommunications are commonly recognized as the most interest rate sensitive (Sweeney and Warga, 1986, Bartram, 2002; Reilly et al., 2007; Ferrer et al., 2010).

Nevertheless, since 1992, Fama and French have outlined the importance of three factors (an overall market factor and factors related to firm size and book-to-market equity) in explaining security returns (L'Her et al., 2004, and Faff, 2004). Besides, this decision is backed up by some recent literature (Black, 2000, Brennan et al., 2004, Aretz et al., 2005, and Petkova, 2006) which concludes that SMB (size factor) and HML (growth factor) are good for predicting macroeconomic variables, specifically economy expectations and default risk premium.

### 3.1. The Fama and French (1993) three-factor model

Fama and French (1993) suggest a three-factor model which embodies most of the variations stock return. In the regard of this model, the three factors are: the market return, and the return on a "size" and "growth" factor portfolio. The both portfolio returns capture the risk factors related with the stock size and growth opportunities. Fama and French (1993):

$$R_{jt} = \alpha_j + \beta_{jm} * R_{mt} + \beta_{jSMB} * SMB_t + \beta_{jHML} * HML_t + \bar{e} \qquad (1)$$

*Where,*
$R_{jt}$*: is the stock j return in month t*
$J$*: shows the stock sensitivity to factor k movements*
$R_{mt}$*: is the excess return on the market portfolio*
$SMB_t$*: (Small minus Big) is the return on the size factor portfolio*
$HML_t$*: (High minus Low) denotes the return on the growth factor portfolio*
$\bar{e}$*: is the error term*

### 3.2. Flannery and James (1984) two-factor model

Empirical evidence about interest rate sensitivity normally has been based on the extension of the CAPM (Capital Asset Pricing Model), which adds an interest rate change factor. This two-factor model was proposed by Stone (1974), who extends the single-factor market model to a two-factor model to "better" explain the stochastic process that generates security returns (e.g. Arango et al., 2002):

$$R_{jt} = \alpha_j + \beta_j * R_{mt} + \gamma_j * \Delta i_t + \bar{e} \qquad (2)$$

*Where,*
$R_{jt}$*: is the stock j return in month t*
$J$*: shows the stock sensitivity to factor k movements,*
$R_{mt}$*: is the return on the market portfolio,*
$i_t$*: represents (unexpected) changes in nominal interest rates and, finally,*
$\bar{e}$*: is the error term.*

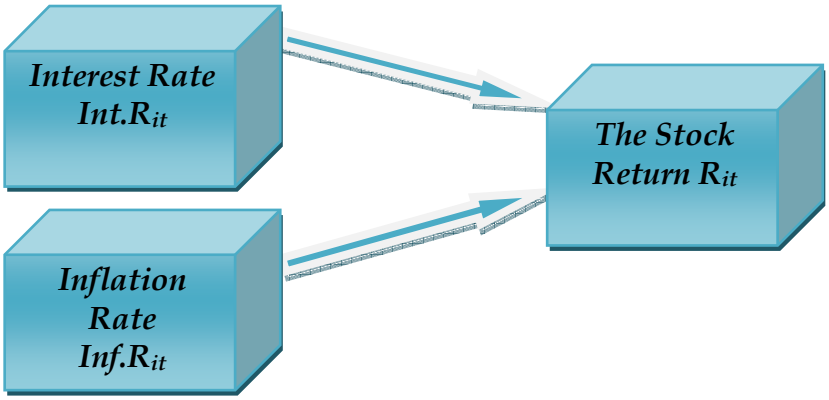
## 4. The Study Model

### 4.1. Virtual Model

The aim of this study is to survey the impact each inflation rate & interest rates on the Abu Dhabi Securities Exchange (ADX) stocks returns at many industry level across different years by using SPSS method.

***Figure 1: The virtual model of study***




*Where,*
***Rit****: is the stock i return in month t*
***Int.Rit****: Interest Rate for the i Market in the period t*
***Inf.Rit****: Inflation Rate for the i Market in the period t*

### 4.2. Mathematical Model of Study

Depend on virtual model that suggested by researchers, they put the following equation: (*Equation*: 3)

$$R_{jt} = \alpha_j + \beta_j * Int._t + \beta_j * Inf._t + \bar{e} \qquad (3)$$

*Where,*
***Rit****: The Stocks Returns for the Company (j) for the Period (t)*
***Int.t:*** *Interest Rate for the period (t)*
***Inf.t:*** *Inflation Rate for the period (t)*
***é :*** *Random Error*

## 5. The Study Hypotheses

According to the Mathematical model above, the researchers derive the following Hypothesis:

### 5.1. The Main Hypothesis:

- **H0**: there is **no** significant Impact for the Interest Rate & Inflation Rate on the Stocks Return ($R_{it}$) in the companies listed in the Abu Dhabi Securities Exchange (ADX) for the period (01/11/2011-01/11/2016).
- **H1**: there is significant Impact for the Interest Rate & Inflation Rate on the Stocks Return ($R_{it}$) in the companies listed in the Abu Dhabi Securities Exchange (ADX) for the period (01/11/2011-01/11/2016).

### 5.2. The 1st Sub-Hypothesis

- **H0**: there is **no** significant Impact for the Interest Rate on the Stocks Return ($R_{it}$) in the companies listed in the Abu Dhabi Securities Exchange (ADX) for the period (01/11/2011-01/11/2016).
- **H1**: there is significant Impact for the Interest Rate on the Stocks Return ($R_{it}$) in the companies listed in the Abu Dhabi Securities Exchange (ADX) for the period (01/11/2011-01/11/2016).

### 5.3. The 2nd Sub-Hypothesis

- **H0**: there is **no** significant Impact for the Inflation Rate on the Stocks Return ($R_{it}$) in the companies listed in the Abu Dhabi Securities Exchange (ADX) for the period (01/11/2011-01/11/2016).
- **H1**: there is significant Impact for the Inflation Rate on the Stocks Return ($R_{it}$) in the companies listed in the Abu Dhabi Securities Exchange (ADX) for the period (01/11/2011-01/11/2016).

## 6. The Study Variables

### 6.1. Dependent Variable: The Stock Return (Rit)

Stock return (Rit) has been measured during each financial period by using the equation of the return divided by the acquisition period (HPR: Holding Period Return). Annual stock return is considered to be the only dependent variable in this study:

$$R_{it} = (P_t - P_{t-1}) \div (P_{t-1}) \qquad (4)$$

*Whereas,*
*$R_{it}$: return on acquisition period representing return on stock*
*$P_{(t)}$: stock price at the end of year*
*$P_{(t-1)}$: stock price at the beginning year*

### 6.2. Independent Variables

#### 6.2.1. Inflation Rate

Because the term inflation is such a generic term used in many contexts, there is no commonly accepted definition of inflation, nor is there a common agreement on what constitutes acceptable levels of inflation, bad inflation, or hyperinflation. Generally it can be said that inflation is a measure of a general increase of the price level in an economy, as represented typically by an inclusive price index, such as the Consumer Price Index in the United States. The term indicates many individual prices rising together rather than one or two isolated prices, such as the price of gasoline in an otherwise calm price environment.

Inflation is a process in which the price level is rising and money is losing value. So, inflation is a loss of money's purchasing power as is usually measured through some price index. If we want to know how much prices have increased over the last 12 months, we would subtract last year's Consumer Price Index from the current index and divide by last year's number and multiply the result by 100 and add a % sign. And the following equation is using to calculate the Inflation Rate (Inf.$R_{it}$):

$$Inf.R_t = ((CPI_t - CPI_{t-1}) \div (CPI_{t-1})) * 100\% \quad (5)$$

*Whereas,*
***Inf.$R_t$**: Inflation Rate for the Period t*
***CPI** $_{(t)}$: Consumer Price Index for the current period*
***CPI** $_{(t-1)}$: Consumer Price Index for the last period*

Table (1) below shows some of Economics variables forecast like: GDP Growth Rate, Unemployment Rate, Inflation Rate, Interest Rate, Balance of Trade and Government Debt to GDP in United Arab Emirates:

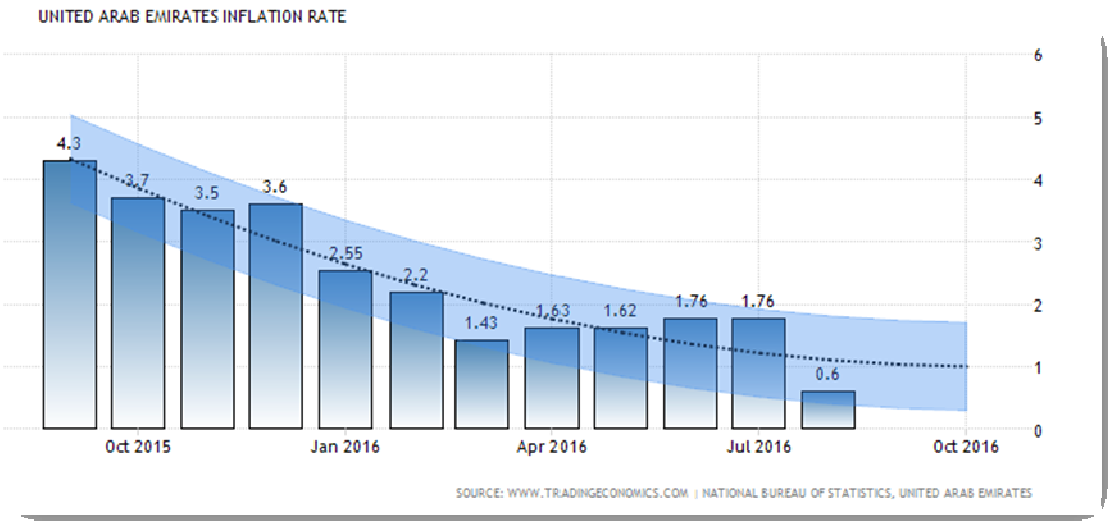
**Table 1: United Arab Emirates | Economic Forecasts | 2016-2020**

| *Overview* | *Actual* | *Q4/16* | *Q1/17* | *Q2/17* | *Q3/17* | *2020* | |
|---|---|---|---|---|---|---|---|
| ***GDP Growth Rate*** | ***3.90*** | ***2.4*** | ***2.3*** | ***2.3*** | ***2.3*** | ***4.3*** | ***percent*** |
| ***Unemployment Rate*** | ***4.20*** | ***4.5*** | ***4.6*** | ***4.6*** | ***4.6*** | ***4.9*** | ***percent*** |
| ***Inflation Rate*** | ***0.60*** | ***1.2*** | ***1.5*** | ***1.8*** | ***2.1*** | ***3.3*** | ***percent*** |
| ***Interest Rate*** | ***1.25*** | ***1.75*** | ***2*** | ***2*** | ***2*** | ***5.25*** | ***percent*** |
| ***Balance of Trade*** | ***328300.00*** | ***102000*** | ***236000*** | ***236000*** | ***236000*** | ***580000*** | ***AED Million*** |
| ***Government Debt to GDP*** | ***15.68*** | ***21*** | ***19.8*** | ***19.8*** | ***19.8*** | ***22.32*** | ***percent*** |

Source: http://www.tradingeconomics.com

Figure 1: below also shows the inflation rate in United Arab Emirates:

***Figure 1: Inflation Rate - UAE***




#### 6.2.2. Interest Rate

An interest rate is the amount of interest due per period, as a proportion of the amount lent, deposited or borrowed (called the principal sum). The total interest on an amount lent or borrowed depends on the principal

sum, the interest rate, the compounding frequency, and the length of time over which it is lent, deposited or borrowed.
There are two types of interest rate: the simple interest rate and the compounded interest rate.

$$Int.R_t = Lo_t * int_s * t \quad (6)$$

*Whereas,*
***Int.R$_t$**: Interest Rate for the Period t.*
***Lo $_{(t)}$**: Loan (Amount of money).*
***int$_s$**: Simple interest.*

$$(F.V) \text{ or } Int.R_t = 1 \div (1+r)^t \quad (7)$$

*Whereas,*
***Int.R$_t$**: Interest Rate for the Period t.*
***F.V**: future value for 1 Currency Unit*
***r**: Discount Rate.*
***t**: Number of periods in the future.*

However, the simple rate of return method does not consider the time value of money. It considers a dollar received 10 years from now as just as valuable as a dollar received today. Thus, the simple rate of return method can be misleading if the alternatives being considered have different cash flow patterns. Additionally, many projects do not have constant incremental revenues and expenses over their useful lives. So, the simple rate of return will fluctuate from year to year, with the possibility that a project may appear to be desirable in some years and undesirable in other years.

## 7. The Study sample & period

### 7.1. The study sample

There are many sectors in the Abu Dhabi Securities Exchange (ADX), But it consider a small number companies in this financial market compared to other markets, so the researchers take approximately 50% as random sample from the a whole companies listed in (ADX). The following table includes the study sample:

***Table 2: The Study Sample***

| SR | Sector | Symbol | Company |
|---|---|---|---|
| 1 | Services | ADAVIATION | Abu Dhabi Aviation Co. |
| 2 | Insurance | ABNIC | Al Buhaira National Insurance Company |
| 3 | Services | ADNH | Abu Dhabi National Hotels |
| 4 | Insurance | ADNIC | Abu Dhabi National Insurance Co. |
| 5 | Industrial | ADSB | Abu Dhabi Ship Building PJSC |
| 6 | Consumer Staples | AGTHIA | AGTHIA GROUP PJSC |
| 7 | Banks | ADCB | Abu Dhabi Commercial Bank |
| 8 | Banks | ADIB | Abu Dhabi Islamic Bank |

A random sample among the companies in the (ADX) has been chosen for conducting this study after omitting all companies which didn't meet the following criteria:

7.1.1. Trading in the company stocks wasn't suspended according to a decision made by the board of directors of the market during the period from (01/11/2011-01/11/2016).
7.1.2. Trading in the company stocks wasn't interrupted, and its type of ownership wasn't transformed or merged during the period from (01/11/2011-01/11/2016).
7.1.3. Availability of all monthly closing prices for the companies stocks during the whole period in which the study was conducted.

### 7.2. The Study Period

The Period of this study represents (01/11/2011-01/11/2016).2015 including the monthly closing price for each company in the study sample for this period, the Inflation Rate in UAE and Interest Rate in UAE.

## 8. Data Collecting

The researchers used two types of data tools:

**8.1. Secondary Sources:** Companies Guide issued by the (ADX) (several versions) covering the period of the study. Including the monthly closing price for each company in the study sample for this period, the Inflation Rate in UAE and Interest Rate in UAE.

**8.2. Primary Sources**: Metrics and ratios which necessary to accomplish the purposes of the study, represented

in the calculation each of: (**Inf.$R_t$**), (**Int.$R_t$**) and (**$R_{it}$**).

## 9. Data Analysis Methods

Adopting the statistical analysis method SPSS (Statistical Package for Social Sciences) based on examining coefficient of determination ($R^2$) in addition to the adjusted coefficient of determination (Adjusted $R^2$). The coefficient of determination ($R^2$) measures to which degree the dependent variable is affected by independent variables.

If all the changes occurring in the dependent variable are derived from the changes that occur in the independent variables, the coefficient of determination will be equal to one. The more the coefficient is close to number one; this will give us an impression that independent variables have a huge impact on the dependent variable. We can also refer to (Adjusted $R^2$) in order to explain the results with more accuracy

## 10. Analyzing Data

For the purpose of testing hypotheses the researcher used SPSS method to gain the following tables as an output from the SPSS:

***Table 3: Correlations***

| | | *Rit* | *Inf.R* | *Int.R* |
|---|---|---|---|---|
| *Rit* | *Pearson Correlation* | *1* | *-.226-*** | *-.257*** |
| | *Sig. (2-tailed)* | | *.000* | *.000* |
| | *N* | *384* | *384* | *384* |
| *Inf.R* | *Pearson Correlation* | *-.226*** | *1* | *.522*** |
| | *Sig. (2-tailed)* | *.000* | | *.000* |
| | *N* | *384* | *384* | *384* |
| *Int.R* | *Pearson Correlation* | *-.257*** | *.522*** | *1* |
| | *Sig. (2-tailed)* | *.000* | *.000* | |
| | *N* | *384* | *384* | *384* |

***. Correlation is significant at the 0.01 level (2-tailed).*

Pearson Correlation - These numbers measure the strength and direction of the linear relationship between the two variables. The correlation coefficient can range from -1 to +1, with -1 indicating a perfect negative correlation, +1 indicating a perfect positive correlation, and 0 indicating no correlation at all. (A variable correlated with it will always have a correlation coefficient of 1.) You can think of the correlation coefficient as telling you the extent to which you can guess the value of one variable given a value of the other variable. Sig. (2-tailed) - This is the p-value associated with the correlation. The footnote under the correlation table explains what the single and double asterisks signify.

***Table 4: Model Summary***

| *Model* | *R* | *R Square* | *Adjusted R Square* | *Std. Error of the Estimate* |
|---|---|---|---|---|
| *1* | *.443[a]* | *.196* | *.173* | *.201* |

*a. Predictors: (Constant), Int.R, Inf.R*

The table (4) above shows the model summary, the table consider very important, it shows the following:

- R: Multiple correlation coefficients between all the predictors in the model and the Dependent variable.
- R Square: ($R^2$) Proportion of variance in the dependent variable predictable by the predictor variables
- Adjusted ($R^2$): As more predictors are added to the model equation, they will explain more variance just by chance—this "shrunken R-squared" adjusts (or penalizes) the $R^2$ dependent on the number of variables used in the equation.
- Std. Error of the Estimate: The standard error of the estimate, also called the root mean square error, is the standard deviation of the error term, and is the square root of the Mean Square Residual (or Error).

***Table 5: ANOVA[a]***

| *Model* | | *Sum of Squares* | *Df* | *Mean Square* | *F* | *Sig.* |
|---|---|---|---|---|---|---|
| *1* | *Regression* | *5.152* | *2* | *2.576* | *16.031* | *.000[b]* |
| | *Residual* | *61.221* | *381* | *.161* | | |
| | *Total* | *66.373* | *383* | | | |

*a. Dependent Variable: Rit*
*b. Predictors: (Constant), Int.R, Inf.R*

ANOVA table above: ANOVA source tables, tells you the F-ratio (and likelihood) associated with the amount of variance the predictors explain in the dependent variable.

| Table 6: Coefficients[a] | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | .965 | .214 | | 4.510 | .000 |
| | Inf.R | -.037 | .017 | -.126 | -2.188 | .000 |
| | Int.R | -.734 | .222 | -.191 | -3.311 | .000 |

a. Dependent Variable: Rit

In the Coefficients table (6) above,

- B: These are the values for the regression equation for predicting the dependent variable from the independent variable. These are called unstandardized coefficients because they are measured in their natural units. As such, the coefficients cannot be compared with one another to determine which one is more influential in the model, because they can be measured on different scales.
- Std. Error: These are the standard errors associated with the coefficients. The standard error is used for testing whether the parameter is significantly different from 0 by dividing the parameter estimate by the standard error to obtain a t-value (see the column with t values and p-values).
- Beta: These are the standardized coefficients. These are the coefficients that you would obtain if you standardized all of the variables in the regression, including the dependent and all of the independent variables, and ran the regression. By standardizing the variables before running the regression, you have put all of the variables on the same scale, and you can compare the magnitude of the coefficients to see which one has more of an effect. You will also notice that the larger betas are associated with the larger t-values.

## 11. Hypotheses Testing

### 11.1. The Main hypothesis

**$H_0$**: there is **no** statistically significant Impact for the Interest Rate & Inflation Rate on the Stocks Return ($R_{it}$) in the companies listed in the Abu Dhabi Securities Exchange (ADX) for the period (01/11/2011-01/11/2016).

By return to the table (5) as shown below, the relationship between dependent & predictors (independent) variables existed in this table:

| Table 5: ANOVA[a] | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
| 1 | Regression | 5.152 | 2 | 2.576 | 16.031 | .000[b] |
| | Residual | 61.221 | 381 | .161 | | |
| | Total | 66.373 | 383 | | | |

a. Dependent Variable: Rit
b. Predictors: (Constant), Int.R, Inf.R

The results indicate that the overall model is statistically significant (F = 16.031, p = 0.000). Furthermore, all of the predictor variables are statistically significant. Which meaning there is statistically significant Impact for the Interest Rate & Inflation Rate on the Stocks Return ($R_{it}$) in the companies listed in the Abu Dhabi Securities Exchange (ADX) for the period (01/11/2011-01/11/2016).This mean **Accept** the main Hypotheses **$H_1$**.

| Table 4: Model Summary | | | | |
|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .443[a] | .196 | .173 | .201 |

a. Predictors: (Constant), Int.R, Inf.R

In addition to the previous result; According to the output shown in the table (4) above, $R^2$ (R-Square) value above, (R- Square = 0.196: 19.6%), which is mean this model can explains (19.6%) of the changes that happened in the Dependent variable ($R_{it}$), in other meaning the (Inf.R) and (Int.R) can explain 19.6% of changes that happened in $R_{it.}$

### 11.2. The 1st Sub-Hypothesis

**$H_0$**: there is **no** statistically significant Impact for the Interest Rate on the Stocks Return ($R_{it}$) in the companies listed in the Abu Dhabi Securities Exchange (ADX) for the period (01/11/2011-01/11/2016).

The SPSS output table (7) below shows the result of the 1st sub-hypothesis.

| Table 7: Coefficients[a] | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1.121 | .203 | | 5.526 | .000 |
| | Int.R | -.987 | .190 | -.257 | -5.197 | .000 |
| a. Dependent Variable: Rit | | | | | | |

We see that the relationship between (Int.R) and ($R_{it}$) is Negative (B= - 0.987) and based on the t-value= (-5.197) and p-value (sig = 0.000), we would conclude this impact is statistically significant. Hence, we would say there is a statistically significant Negative Impact between (Int.R) and ($R_{it}$). This meaning there is significant Impact for the Interest Rate on the Stocks Return ($R_{it}$) in the companies listed in the Abu Dhabi Securities Exchange (ADX) for the period (01/11/2011-01/11/2016). So the researcher **Accept** the 1st sub-hypothesis **$H_1$,** But it's Negative Impact.

And for the Explanatory Power for the independent variable to the dependent variable the researcher used the table (8) below:

| Table 8: Model Summary | | | | |
|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .330[a] | .109 | .092 | .403 |
| a. Predictors: (Constant), Int.R | | | | |

The $R^2$ above shows a value 10.9% which is mean this model can explains (10.9%) of the changes that happened in the Dependent variable ($R_{it}$), in other meaning the (Int.R) can explain 10.9 % of changes that happened in $R_{it}$.

### 11.3. The 2nd Sub-Hypothesis

**$H_0$**: there is **no** significant Impact for the Inflation Rate on the Stocks Return ($R_{it}$) in the companies listed in the Abu Dhabi Securities Exchange (ADX) for the period (01/11/2011-01/11/2016).

The SPSS output table (9) below shows the result of the 2nd sub-hypothesis.

| Table 9: Coefficients[a] | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | .275 | .049 | | 5.580 | .000 |
| | Inf.R | -.066 | .015 | -.226 | -4.535 | .000 |
| a. Dependent Variable: Rit | | | | | | |

We see that the relationship between (Inf.R) and ($R_{it}$) is Negative (B= - 0.066) and based on the t-value= (- 4.535) and p-value (sig = 0.000), we would conclude this Impact is statistically significant. Hence, we would say there is a statistically significant Negative for the (Inf.R) on ($R_{it}$). This meaning there is significant Impact for the Inflation Rate (Inf.R) on the Annual Return ($R_{it}$) in the companies listed in the Abu Dhabi Securities Exchange (ADX) for the period (01/11/2011-01/11/2016). So the researchers **Accept** the 2nd sub-hypothesis. **$H_2$**. But it's Negative Impact.

And for the Explanatory Power for the independent variable to the dependent variable the researcher used the table (10) below:

| Table 10: Model Summary | | | | |
|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .226[a] | .051 | .049 | .406 |
| a. Predictors: (Constant), Inf.R | | | | |

The $R^2$ above shows a value 5.1% which is mean this model can explains (5.1%) of the changes that happened in the Dependent variable ($R_{it}$), in other meaning the Inflation Rate (Inf.R) can explain 5.1 % of changes that happened in the Annual Return $R_{it}$.

## 12. The Study Results

After the researchers test the hypotheses they found the following:

12.1. There is statistically significant Impact for the Interest Rate & Inflation Rate on the Stocks Return ($R_{it}$) in the companies listed in Abu Dhabi Securities Exchange (ADX) for the period (01/11/2011-01/11/2016).

12.2. The Independent variables in this study Inflation Rate (Inf.R) and Interest Rate (Int.R) can explain 19.6% of changes that happened in the stock return ($R_{it}$) in Abu Dhabi Securities Exchange (ADX).

12.3. There is a Negative statistically significant Impact for the Interest Rate (Int.R) on the Stocks Return ($R_{it}$) in the companies listed in the Abu Dhabi Securities Exchange (ADX) for the period (01/11/2011-01/11/2016).

12.4. The Independent variable interest Rate (Int.R), can explain 10.9 % of changes that happened in the stock return ($R_{it}$) in Abu Dhabi Securities Exchange (ADX).

12.5. There is a Negative statistically significant Impact for the Inflation Rate (Inf.R) on the Stocks Return ($R_{it}$) in the companies listed in the Abu Dhabi Securities Exchange (ADX) for the period (01/11/2011-01/11/2016).

12.6. The Independent variable inflation rate (Inf.R), can explain 5.1% of changes that happened in the stock return ($R_{it}$) in Abu Dhabi Securities Exchange (ADX).

## 13. References

ADAMS, G., MCQUEEN, G. AND R. WOOD (2004), 'The Effects of Inflation News on High Frequency Stock Returns', Journal of Business, Vol. 77, Nº 3, pp. 547-574.

ALONSO, F. BLANCO, R. AND A. RÍO (2001), 'Estimating inflation expectations using French government inflation-indexed bonds', Banco de España – Servicio de Estudios. Documento de trabajo Nº 0111

ANARI, A. AND J. KOLARI (2001), 'Stock Prices and Inflation', The Journal of Financial Research, Vol. XXIV, Nº 4, pp. 587-602.

ANDERSEN, T. G., BOLLERSLEV, T., DIEBOLD, X. AND C. VEGA (2003), 'Micro Effects of Macro Announcements: Real-Time Price Discovery in Foreign Exchange', The American Economic Review, Vol. 93, Nº 1, pp. 38-62.

ARANGO, L. E., GONZÁLEZ, A. AND C. E. POSADA (2002), 'Returns and the interest rate: a non-linear relationship in the Bogota' stock market', Applied Financial Economics, Vol. 12, Nº 11-1, pp. 835-842.

ARAY, H. AND GARDEAZABAL, J. (2004), 'Macroeconomic Announcements and Stock Returns: The Case of Spain', Working paper.

ARETZ, K., BARTRAM, S. M. AND POPE, P. F. (2005), 'Macroeconomic Risks and the Fama and French / Carhart Model', EFA 2005 Moscow Meeting

ARIÑO, M. A. AND M. A. CANELA (2002), 'Evolución de la inflación en España?', IESE, Centro Internacional de Investigación Financiera (CIIF), Documento de investigación Nº 446.

ASIKOGLU, Y. AND M. R. ERCAN (1992), 'Inflation Flow- Through and Stock Prices', Journal of Portfolio Management, Vol 18, Nº 3, pp: 63-68

BARNARD, I. AND J. DE VILLIERS (2003), 'Size effects, growth opportunities and the sensitivity of share prices to interest rates', Working Paper

BARTRAM, S. M. (2002), 'The Interest Rate Exposure of Nonfinancial Corporations', European Finance Review, Vol. 6, Nº 1, pp. 101-125.

BENINK, H. AND C. WOLFF (2000), 'Survey Data and the Interest Rate Sensitivity of US Bank Stock Returns', Economic Notes, Vol. 29, Nº 2-2000, pp. 201-213.

FLANNERY, M. J. AND A. A. PROTOPAPADAKIS (2002), 'Macroeconomic Factors Do Influence Aggregate Stock Returns', The Review of Financial Studies, Vol. 15, Nº 3, pp. 751-782.

FLANNERY, M. J. AND C. JAMES (1984), 'The effect of interest rate changes on the common stock returns of financial institutions', The Journal of Finance, Vol. 39, pp. 1141-1153

FLANNERY, M. J. AND C. JAMES (1984), 'The effect of interest rate changes on the common stock returns of financial institutions', The Journal of Finance, Vol. 39, pp. 1141-1153

FRASER, D., MADURA, J. AND R. A. WEIGAND (2002), 'Sources of Bank Interest Rate Risk', The Financial Review, Vol. 37, Nº 3, pp. 351-368.

FROOT, K. (1989), 'New Hope for the Expectations Hypothesis of the Term Structure of Interest Rates', The Journal of Finance, Vol. 44, pp. 283-305.

GAPEN, M. T. (2003), 'Seasonal indexation bias in US Treasury Inflation-indexed Securities', Applied Financial Economics, Vol. 13, Nº 7, pp. 509-516.

HAGMANN, M. AND C. LENZ (2004), 'Real Asset Returns and Components of Inflation: A Structural VAR Analysis', Working Paper, FAME Research Paper No. 118.

HEINRICH BORTIS, (2004) "Money and Inflation – A New Macroeconomic Analysis", Journal of Economic Studies, Vol. 31 Iss: 2, pp.158 – 164

HEVERT, K. T., MCLAUGHLIN, R. M. AND R. A. TAGGART (1998 a), 'Growth Options and Equity

Duration', Journal of Portfolio Management, Vol. 25, Nº 1, Fall 1998. pp. 43-50.
HEVERT, K. T., MCLAUGHLIN, R. M. AND R. A. TAGGART (1998 b), 'Interest Rates, Inflation and the Value of Growth Options', The Quarterly Review of Economics and Finance, Vol. 38, Special Issue, pp. 599-613.
HU, X. AND T. D. WILLETT (2000), 'The variability of inflation and real stock returns', Applied Financial Economics, Vol. 10, pp: 655-665
JAREÑO, F. (2005), 'Flow-through capability: the Spanish case', Journal of Asset Management, Vol. 6, Nº 3, pp. 191-205.
JAREÑO, F. (2006), 'Sensibilidad de los rendimientos sectoriales a tipos de interés reales e inflación', Investigaciones Económicas, Forthcoming
JOYCE, M. A. S. AND V. READ (2002), 'Asset price reactions to RPI announcements', Applied Financial Economics, Vol. 12, pp.253-270
KADIYALA, P. (2000), 'The Relation Between the Magnitude of Growth Opportunities and the Duration of Equity', The Journal of Financial Research, Vol. XXIII, Nº 3, Fall 2000, pp. 285-310.
KANE, E. J. AND H. UNAL (1988), 'Change in market assessments of deposit-institution riskiness', Journal of Financial Services Research, Vol. 1, pp. 207-229.
KRAMER, J. (1998), 'Determinants of the expected real long-term interest rates in the G7-countries', Applied Economics, Vol. 30, Nº 2-1, pp. 279-285.
PETKOVA, R. (2006), 'Do the Fama-and French factors proxy for innovations in state variables?', The Journal of Finance, Vol. 61, Nº 2, pp. 581-612.
SACK, B. (2000), 'Deriving Inflation Expectations from Nominal and Inflation-indexed Treasury Bills', Journal of Business, Vol. 60, Nº 4, pp: 473-489
SCHWERT, G. W. (1981), 'The Adjustment of Stock Prices to Information about Inflation', the Journal of Finance, Nº 36, Nº 1, pp. 15-29.
SOTO, G. M., FERRER, R. AND GONZÁLEZ, C. (2004), 'Determinants of Interest Rate Exposure of Spanish Non-financial Firms', European Review of Economics and Finance, Vol. 4, Nº 3, pp. 55-71.
STAIKOURAS, S. K. (2005), 'Equity returns of financial institutions and the pricing of interest rate risk', Applied Financial Economics, Vol. 15, Nº 7-1, pp. 499-508.
STONE, B. K. (1974), 'Systematic Interest-Rate Risk in a Two-Index Model of Returns', Journal of Financial and Quantitative Analysis, Vol. 9 (November 1974), pp. 709-721.
SWEENEY, R. J. AND A. D. WARGA (1986), 'The pricing of interest rate risk: evidence from the stock market', The Journal of Finance, Vol. 41, Nº 2, pp. 393-410.
TESSAROMATIS, N. (2003), 'Stock Market Sensitivity to Interest Rates and Inflation', Working Paper, EFMA 2003 Meeting in Helsinki
ZELLNER, A. (1962), 'An Efficient Method of Estimating Seemingly Unrelated Regressions, and Tests for Aggregation Bias', Journal of the American Statistical Association, Vol. 57, pp. 348-368.