Investigation the Equilibrium Relationship Between Micro and Macroeconomic Variables and Amman Stock Exchange (ASE) Index Through ARDL Model (The Bound Test Approach)

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Abstract: This paper investigates the equilibrium relationship between micro and macroeconomic variables and Amman stock exchange (ASE) index, through ARDL model (the bound test approach), by using monthly data for the period 2011:1 to 2014:3. Unit root test based on Augment Dickey Fuller (ADF) test procedure shows that the set of the study variables (industrial production index (IPI), money supply (MS), Investors confidence (NJII), market capitalization (MC), and market price/earnings (PE)) are integrated of orders one and zero. Consequently the Autoregressive Distributed Lag (ARDL) approach to Cointegration is used. The empirical results reveal that the Amman Stock Exchange (ASE) performance as measured by ASE price index, and its determinants namely industrial production index (IPI), money supply (MS), Investors confidence (FII NJII), market capitalization (MC), and market price/earnings (PE) have a long–run equilibrium relationship. To test the stability of short run, and long run coefficients in the ARDL error correction model the CUSUM, and CUSUMS Q tests were employed, and the results show that the model is structurally stable.

Keywords: Amman Stock Exchange stock price index; ARDL Model, Microeconomic, Jordan.

1. INTRODUCTION
The relationship between stock market, and selective macroeconomic factors has attracted a great deal of interest in the past whether from researchers practitioners or investors due to their believe that the stock market considered as a fuel for economic growth by pooling of saving from different parties, and availing them to companies in order to activate productive investment project (kimani,2013). The subscribed, and traded in shears of public shareholding companies in Jordan back to early thirties, before the Amman financial market established in 1967. The Amman Stock Exchange (ASE) established on march 1999 ,after the restructure process of Amman financial market in 1997, as a non-profit institution with administrative, and financial autonomy, and authorized to function as an exchange for the trading of securities in Jordan, to achieve the following objectives: creating an attractive, and safe environment for investment, developing processes and methods of trading securities in the stock market enhance the public awareness of all segments of society and disseminating trading information to the largest possible number of dealers and interested parties (http://www.ase.com). The main aim of this study is to investigate the equilibrium relationship between micro and macroeconomic variables and Amman stock exchange (ASE) index through ARDL model (the bound test approach ). The structure of this study is organized as follow: Section 2 presents the literature review. Section 3 discusses the methodology and data description and Source. Section4 reports the Empirical Investigation, and finally section 5 provides the study conclusions.
2. Literature Review

The literature regarding the effect of macroeconomic variables on stock market performance has attracted a great deal of interest in the past, it is initiated at the late of 1970’s, such as Fama (1977), Fama (1981), Pearce and Riley (1985), Roll and Ross (1986), and others. Many of these studies revealed adversity of conclusions depend on the methodologies, test and variables used.

A. A Brief literature survey upon the Jordanian economy

A study carried out by Mayhyereh (2002) employed Johansen’s (1988) cointegration analysis to test the causal relationship among stock market prices and macroeconomics factors in Jordan. The results showed that the macroeconomics were echoed in the stock prices of capital market in Jordan. Al-Sharkas. Adel (2004) investigated the dynamic relationship between macroeconomic factors and the Jordanian stock market utilized vector error correction model (VECM), the empirical results showed that the stock prices and macroeconomics variables namely real economic activity, money supply, inflation, and interest rate have a long –term equilibrium. Another study by El-Nader and Alraimouny (2012) investigated the impact of macroeconomics factors namely real money supply (RMS2), real gross domestic product (RGDP), inflation (CPI), real exchange rate (E1), weighted average interest on loan and advances (WAIR), and a dummy variable (DUM) on Amman stock market (ASE) returns used ARCH /GARCH estimation models. The results showed that RMS2, CPI, E1, and the dummy variable have a negative role on the ASE returns. In contrast the RGDP has a positive impact. In their article Bekhet and Matar (2012) examined the short and long –run equilibrium relation between the stock prices index (SPI) and the macroeconomics variable in Jordan, namely industrial production index (IP), money supply (M2), exchange rate (EX), inflation (CPI), and discount rate (DR). The results suggest the existence of long-term equilibrium relationship between SPI and the macroeconomics variables (IP,M2,EX,CPI,and DR) .Al-Shubiri (2013) investigated the relationship between economic variable and abnormal returns in Amman stock exchange, the results showed that the consumer price index, gross fixed capital formation, and money supply on index abnormal stock returns is statistically significant, while the industrial production index and interest rate were insignificant. Al –Assaf and Al-Majali (2014) studied the long and short run relationship between stock market index(SPI), and main macroeconomics variables performance in Jordan (gross domestic product (GDP), consumer price index (CPI), credit facilities extended licensed banks to private sector (CP), weighted average interest rate on time deposits (DR), and dummy variable denote to global financial crisis (DUM-CRIS) by using vector error correction (VECM). The results revealed that there is a bi-direction long run relationship between SPI and CP, DR, CPI.

B. Foreign studies

Maysami et al. (2004) examined the long –term equilibrium relation between selected macroeconomic variables, and the Singapore stock market index, as well as with various Singapore exchange sector indices – the finance index, the property index, and the hotel index. The study concludes that the Singapore's stock market, and the property index form cointegration relationship with changes in the short and long –term interest, industrial production, price level, exchange rate and money supply. In his article Ali (2011) investigated the impact of changes in selective microeconomics and macroeconomics variable on stock returns at Dhaka stock exchange, based on regression coefficient, it was found that inflation, and foreign remittance have a negative influence, while industrial production index, market price/earnings, and monthly percent average growth in market capitalization have a positive influence on stock returns. Aamir et al. (2012) analyzed the causal relationship both long –run and short –run between Karachi stock exchange and some macroeconomics variable in Pakistan, the study revealed the presence of long–run association between macroeconomics variables and stock prices. Monjurul Muhammed, (2012) investigates the effects of macroeconomic variables of treasury bill interest rate and industrial production on stock returns on Dhaka Stock Exchange for the period between January 2000 and February 2007 on the basis of monthly time series data using Autoregressive Integrated Moving Average (ARIMA) model. The paper has taken the overall market stock returns as an independent variable. It does not consider the stock returns of different companies separately. The ARIMA model finds a positive relationship between Treasury bill interest rate and industrial production with market stock returns but the coefficients have turned out to be statistically insignificant. Singh (2012) explore the causal relation between stock market index i.e. BSE Sensex and the macroeconomic variables of Indian economy namely wholesale price index ,indexed industrial production, and exchange rate. Results showed that the indexed industrial production is the only variable having bilateral causal relationship with BSE Sensex, while wholesale price index is having unilateral causality with BSE Sensex .Also the study concluded that Indian stock market is approaching towards informational efficiency. Makan et al.( 2012) studied the effect of macroeconomic
variables namely industrial production index, consumer price index, interest rate, exchange rate, oil price, foreign institutional investment, and gold price on Indian stock market. The results showed that the exchange rate, foreign institutional investment, and interest rate have a significant influence on Indian stock market, also the study reveals that in long run the Indian stock market is more driven by domestic macroeconomic factors rather than the global factors.

The survey of literature upon the Jordanian economy shows that numerous studies have been analyzed the factors influence Amman stock exchange performance, majority of them entirely focused on the relationship between Amman stock exchange and selective macroeconomic variables likes gross domestic product, exchange rate, inflation, interest rate, etc. Accordingly, there is a scarce evidence on the nature of interaction between microeconomic variables and Amman stock exchange price index, as far to the knowledge of the researcher, this study attempt to shed light on the relationship between Amman stock exchange price index, and selective microeconomic variables namely capitalization (MC), and market price/earnings.

3. METHODOLOGY
A. Data description and Source
In this paper the Amman Stock Exchange (ASE) performance measured by ASE price index weighted by market capitalization of free – float shares is considered as dependent variable, while the industrial production index (IPI), money supply (M1), Investors confidence (NJI), market capitalization (MC), and market price/earnings (PE) are considered as independent variables. Monthly data of all the dependent and independent variables have been taken for the period between 2011:1 to 2014:3. The data of industrial production index (IPI), and money supply variables were collected from central bank of Jordan data base, while the data of Investors confidence (NJI), market capitalization (MC), and market price/earnings (PE) variables were collected from (ASE) data base. Based on the economy theory and coupled with the results of previous studies, this paper hypothesize certain relationships between the independent variables and Amman Stock Exchange (ASE) performance as measured by ASE price index, the full descriptions of the above mentioned variables, and their hypothesize relationships are explained below.

Amman Stock Exchange (ASE) performance (ASEPI);
It is the dependent variable of the model which measured by ASE price index weighted by market capitalization of free float shares, which is a major stock market index that tracks the performance of Amman Stock Exchange, and constructed as a result of global development in the domain of the indices calculation (http://www.ase.com).

Industrial Production Index (IPI)
This independent variable has been used as a proxy to measure the growth rate in real sector. Industrial production index measures monthly developments of real activity in the industrials sector, comprising Mining and Quarrying, Manufacturing, and Electricity, and it is calculated according to production quantity of a sample representing most domestic industries, and weighted by the production values for industry in base year, according to the production survey carried by department of statistics in 1999 (CBI monthly statistical bulletin, vol.50 no.4 April 2014). IPI affects stock prices through its influence on expected future cash flows. It is hypothesized that an increase in industrial production is positively related to ASE price index.

Money Supply (M2)
The Money Supply (M2) is equals money supply (M1) plus quasi-money, on the asset side it equals net domestic assets plus foreign assets of the banking system (CBI monthly statistical bulletin, vol.50 no.4 April 2014). Increase in money supply leads to increase in liquidity that ultimately results in upward movement of nominal equity prices. It is therefore hypothesized that an increase in money supply is positively related to ASE price index (Hasan and Nasir, 2008).

Investors confidence (NJI)
The percent of the Non-Jordanian Ownership of Market Capitalization (NJI) has been used as proxy of Investors confidence, It's expected that an increase in NJI will positively affect the ASE price index

Market Capitalization (MC)
Market Capitalization (MC) represents the number of subscribed shares times the last closing price of the company. It is hypothesized that an increase in Market Capitalization (MC) will leads to an increase in market prices of shares, so it is positively related to ASE price index.

Market Price /Earnings Ratio (PE)
This independent variable is calculated by divided the Market Capitalization by Earnings, and it is expected that an increase in Market Price /Earnings Ratio (PE) will positively affect the ASE price.

B. Research Methods and Model Specification

To check the existences of the long run and short run relationship among study variables, the current study applies the Autoregressive Distributed lag (ARDL) approach to Cointegration (The bounds test method
Cointegration). This methodology is chosen as it has certain advantages on other co-integration procedures like Engle and Granger (1987) test, fully modified OLS procedure of Phillips and Hansen’s (1990), maximum likelihood based Johansen (1988, 1991) and Johansen-Juselius (1990) tests. The Bounds test method for Cointegration is being applied irrespective of whether the underlying regressors are purely I(0), I(1) or mutually, but no variable is integrate of I(2) or higher (Pesaran et al,2001), as well as the short-run and long-run coefficients of the model are estimated simultaneously. To estimate the parameters of long-run equilibrium relationship between Amman Stock Exchange (ASE) performance (ASEPI), and macro and micro -economic factors, and the short-run dynamic error correction model. The following model is used:

\[ \text{ASEPI} = f(\text{MPIRICAL} , \text{MS} , \text{MC}, \text{NJI},\text{PE}) \]  

 Which can be written in a semi log liner form as

\[ \text{LNASEPI} = \alpha_0 + \alpha_1 \text{LNIPI}_{t-1} + \alpha_2 \text{LNMS}_{t-1} + \alpha_3 \text{LNMC}_{t-1} + \alpha_4 \text{LNNJI}_{t-1} + \alpha_5 \text{PE}_{t-1} + \epsilon_t \]  

The conditional error correction of ARDL model for ASE price index and its determinants is given by:

\[ \Delta \text{LN}(\text{ASEPI}_t) = \alpha_0 + \sum_{i=1}^n \alpha_i \Delta \text{LN}(\text{ASEPI}_{t-i}) + \sum_{i=1}^n \alpha_2 \Delta \text{LN}(\text{LNIPI}_{t-i}) + \sum_{i=1}^n \alpha_3 \Delta \text{LN}(\text{LNMS}_{t-i}) + \sum_{i=1}^n \alpha_4 \Delta \text{LN}(\text{LNMC}_{t-i}) + \sum_{i=1}^n \alpha_5 \Delta \text{LN}(\text{LNNJI}_{t-i}) + \sum_{i=1}^n \alpha_6 \Delta (\text{PE}_{t-i}) + \psi_1 \Delta \text{LN}(\text{ASEPI})_{t-1} + \psi_2 \Delta \text{LN}(\text{MPIRICAL})_{t-1} + \psi_3 \Delta \text{LN}(\text{MS})_{t-1} + \psi_4 \Delta \text{LN}(\text{MC})_{t-1} + \psi_5 \Delta \text{LN}(\text{NJI})_{t-1} + \psi_6 \Delta \text{PE}_{t-1} + \epsilon_t \]  

Where LnASEPI, LNIPI, LNMS, LNMC,LNNJI, and PE are the macroeconomic and microeconomic variables that have been defined in section (3), \( \Delta \) is the first difference operator, \( \alpha_2, \alpha_3, \alpha_4, \alpha_5, \alpha_6, \) and \( \alpha_6 \) are the short run coefficients, and \( \psi_2, \psi_3, \psi_4, \psi_5 \) and \( \psi_6 \) are the long run coefficients, and \( \epsilon_t \) is the white noise error term. As industrial production, money supply, market capitalization, Investors confidence and Market Price/Earnings Ratio (PE) are expected to have a positive effect on Amman Stock Exchange (ASE) performance (ASEPI), therefore the coefficients \( \alpha_2, \alpha_3, \alpha_4, \alpha_5, \) and \( \alpha_6 \) are expected to be positive, i.e. \( \alpha_2, \alpha_3, \alpha_4, \alpha_5, \) and \( \alpha_6 > 0 \)

4. EMPIRICAL INVESTIGATION

A. Unit Root Test For Stationary

Augmented Dickey – Fuller (ADF) unit root test was exercised to check the order of integration of the variables, the obtained results clearly indicated that the null hypothesis of unit root for all variables in level forms cannot be rejected at 5%, and 10% significance level except for LNMC and PE variables which are level stationary i.e. I(0), however the null hypothesis of unit root for the rest variables namely LNASEPI, LNMS, LNIPI, and LNNJI can be rejected at 1% significance level when ADF test applied to the first difference i.e. I(1). The applied ADF test reveals that the variables have different orders to be integrated, I(1) or I(0), therefore we cannot apply the Engle Granger (1987) or Johansen Juselius (1990) techniques to find out the co-integration between study variables, since these techniques require that all variables must be stationary and with equal order of integration (Bekhket,2012), the mutually cointegration of I(0) and I(1) gives justification to adopt the bounds test or ARDL approach to be applied in this study, since the bound test method for cointegration is being applied irrespectively the order of integration of the variable, there may be either integrated I(1) or I(0). The ADF unit root test results are reported in table (1) below.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Level</th>
<th>First Differences</th>
<th>Decision Inference</th>
</tr>
</thead>
<tbody>
<tr>
<td>LNASEPI</td>
<td>-2.913847</td>
<td>-5.380774***</td>
<td>I(1)</td>
</tr>
<tr>
<td>LNMS</td>
<td>-0.117340</td>
<td>-5.885899***</td>
<td>I(1)</td>
</tr>
<tr>
<td>LNIPI</td>
<td>-1.086994</td>
<td>-6.700244***</td>
<td>I(1)</td>
</tr>
<tr>
<td>LNMC</td>
<td>2.981279**</td>
<td></td>
<td>I(0)</td>
</tr>
<tr>
<td>LNNJI</td>
<td>-1.515554</td>
<td>-6.080789***</td>
<td>I(1)</td>
</tr>
<tr>
<td>PE</td>
<td>-2.724938*</td>
<td></td>
<td>I(0)</td>
</tr>
</tbody>
</table>

Note: ***, **,* imply significance at the 1% ,5% ,10% level respectively  
Source: output of EVViews Packing , version 7.2

B. ARDL Bounds Test For Cointegration

Having concluded from the ADF results table (1) that the variables have a mutually Cointegration of both I(0) and I(1), which gives justification to adopt the ARDL approach in this study, according to this approach there are two types of relationships among variables; the long –run relationship and short –run dynamic relationship (Malawi,2013). The ARDL approach to Cointegration is consists of three stages (Hasan and Nasir,2008). In the first step, the existence of a long- run relationship between the variables is established by testing for the significance of lagged variables in an error correction mechanism regression. Then the first lag of the levels of each variable are added to the equation to create the error correction mechanism equation , and a variable addition test is performed by computing an F-test on the significance of all the lagged variables to test the null hypothesis of no long run relationship, which defined by

\[ H_0 : \psi_2 = \psi_3 = \psi_4 = \psi_5 = \psi_6 = 0 \] against its alternative

\[ H_1 : \psi_2 \neq 0, \psi_3 \neq 0, \psi_4 \neq 0, \psi_5 \neq 0, \psi_6 \neq 0 \]

the decision of rejecting or accepting the null hypothesis of no Cointegration among the variable is based on the following procedures (Malawi,2014):

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1- If the F statistic > upper bound, the H₀ can be rejected, and the variables are co-integrated

2- If the F statistic < lower bound, the H₀ cannot be rejected, and the variables are not co-integrated

3- If the F statistic falls between the lower and upper critical values, the results is inconclusive.

If the F statistic reveals the existence of Cointegration among the study variable, we move to the second stage to estimate the ARDL form of equation where the optimal lag length is chosen according to Schwartz Bayesian. The third stage entails the estimation of the error correction equation using the differences of the variables, and determines the speed of adjustment of returns to equilibrium. The table (2) reveals that the result of the bounds co-integration test demonstrate that the null hypothesis of against its alternative is rejected at 1% significance level since the calculated F-statistics of 7.7906 is greater than the upper critical values 5.06, and thus, infer that there exists a co-integrating relationship among the study variable in the level form.

**Table (2) Bound test result**

<table>
<thead>
<tr>
<th>The Model</th>
<th>Calculated F-statistics</th>
<th>Critical values</th>
<th>Inference</th>
</tr>
</thead>
<tbody>
<tr>
<td>F₁( LNASEPI, LNNJI, LNMS)</td>
<td>F= 7.7906 [0.000]</td>
<td>1%: 3.74 5.06 10%: 2.26 3.35</td>
<td>Cointegration</td>
</tr>
</tbody>
</table>

The critical values are obtained from Persaran el. al. (2001) table C(iii) Case III: Unrestricted intercept and no trend

Source: output of Micro fit Package ,version 4

The results of long run representations of our analysis are presented in table (3). The estimated coefficients of all variables are statistically significant at 1% level, and have a positive sign as hypothesized, and expected, except the variable LNNJI, indicating that one percent increase in industrial production (IPI), money supply (MS), and market price/earnings (PE) leads to increase in (ASE) index by (0.3968),(0.428),(0.9217),(0.0034948) respectively.

**Table (3) : Estimated Long Run Coefficients of LN ASEPI using the ARDL Approach: ARDL(1,2,0,1,0,1) selected base on Schwarz Bayesian**

<table>
<thead>
<tr>
<th>The Long-Run Estimation Results</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-statistics</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-12.9492</td>
<td>1.241</td>
<td>-10.4298</td>
<td>0.000</td>
</tr>
<tr>
<td>LNMC</td>
<td>0.92177</td>
<td>0.06338</td>
<td>23.2279</td>
<td>0.000</td>
</tr>
<tr>
<td>LNNJI</td>
<td>-1.4924</td>
<td>0.11778</td>
<td>-12.6710</td>
<td>0.000</td>
</tr>
<tr>
<td>PE</td>
<td>0.034948</td>
<td>0.7260E-3</td>
<td>4.8137</td>
<td>0.000</td>
</tr>
<tr>
<td>LN IPI</td>
<td>0.39687</td>
<td>0.011246</td>
<td>3.5291</td>
<td>0.002</td>
</tr>
<tr>
<td>LN MS</td>
<td>0.42803</td>
<td>0.052765</td>
<td>8.1119</td>
<td>0.000</td>
</tr>
</tbody>
</table>

R Squared = 0.99570  Adjusted R Squared = 0.994128  D-W Statistic = 2.5579
Durbin's h- Statistic = -1.9056 [0.057]  F-Statistic = 410.0082 [0.000]

Source: output of Micro fit Package ,version 4.1

The results of error correction representations of estimated ARDL model are shown in table (4). As can been from the table(4) below , the results are in line with the long–run results, except for the PE variable which its coefficient turned out to be statistically insignificant in short run .The one percent increase in industrial production (IPI), money supply (MS) and market capitalization (MC) , leads to increase in (ASE) index by (0.0371),(0.205),(0.953) respectively. Also the results showed that the market capitalization (MC), and money supply (MS) have a great impact on (ASE) index in both short and long run . The equilibrium correction coefficient ECM(-1) estimated (-0.77393) has the right sign (negative ) and is highly significant at 1% . The absolute value of coefficient ECM(-1) is very big indicating the very high speed of adjustment to equilibrium following short run shock , the (0.77%) of the disequilibrium caused by the previous months shock converges back to long -run equilibrium in the current month. , this results provides the evidence of Cointegration (long –run relationship) among variables in the model (Samreth.2009).

**Table (4) The Short Run Dynamic for Δ LNASEPI : Error Correction Representation for the selected ARDL Model**

<table>
<thead>
<tr>
<th>Regressor</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-statistics</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ΔLNMC</td>
<td>0.95358</td>
<td>0.35441</td>
<td>26.9058</td>
<td>0.000</td>
</tr>
<tr>
<td>ΔLN IPI</td>
<td>-1.1550</td>
<td>0.14456</td>
<td>-7.9901</td>
<td>0.000</td>
</tr>
<tr>
<td>ΔPE</td>
<td>0.46478E-3</td>
<td>0.7341E-3</td>
<td>-0.63023</td>
<td>0.533</td>
</tr>
<tr>
<td>ΔLN MS</td>
<td>0.030715</td>
<td>0.0082482</td>
<td>3.7328</td>
<td>0.000</td>
</tr>
<tr>
<td>ECM(-1)</td>
<td>-0.77393</td>
<td>0.074842</td>
<td>-10.3409</td>
<td>0.000</td>
</tr>
</tbody>
</table>

F = LNASEPI - 0.92177L NMC + 0.4924 LNNJI - 0.034948PE
(25.2279) (-12.6710) (4.8137)
-0.039687 LN IPI + 0.42803 LN MS + 12.9492C
(3.5291) (8.1119) (-10.4298)

Source: output of Micro fit Package ,version 4.1

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The robustness of the model has been definite by several diagnostic test such as serial correlation, normality, function form, and Heteroscedasticity by using LM test, skewness and kurtosis test, Ramsey Reset test, and white test respectively. All diagnostic test reveals that the model has the aspiration econometric properties, it has a correct functional form, and the models residuals are serially uncorrelated, and normally distributed, and the Heteroscedasticity problem doesn’t appear, result of diagnostic test are reported in table (5).

<table>
<thead>
<tr>
<th>Item</th>
<th>Test Applied</th>
<th>CHSQ(x2)</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial Correlation</td>
<td>Lagrange Multiplier Test</td>
<td>20.6624</td>
<td>1.4755</td>
</tr>
<tr>
<td>Prob</td>
<td></td>
<td>0.241</td>
<td></td>
</tr>
<tr>
<td>Normality</td>
<td>Test of Skewness and Kurtosis</td>
<td>1.5200</td>
<td>1.0710</td>
</tr>
<tr>
<td>Functional Form</td>
<td>Ramsey RESET Test</td>
<td>.933849</td>
<td>NA</td>
</tr>
<tr>
<td>Heteroscedasticity</td>
<td>White Test</td>
<td>1.1605</td>
<td>1.1333</td>
</tr>
</tbody>
</table>

NA: Not applicable
Source: output of Micro fit Package, version 4.1

Finally to check the stability of short run and long run coefficient in the ARDL error correction model the current study employed the cumulative sum (CUSUM) and cumulative sum of squares (CUSUMSQ) statistics. The CUSUM and CUSUMSQ statistics are plotted against the break points. If the plots of CUSUM and CUSUMSQ statistics stay within the critical bounds of 5 percent level of significance, the null hypothesis of all coefficients in the given regression are stable and cannot be rejected, so the model is structurally stable (Green, 1993). A graphical presentation of these two test is provided in figures 1 and 2, show that both the CUSUM and CUSUMSQ are within the critical bounds of 5 percent level of significance indicates that the model is structurally stable. The Fig (3) shows the actual fitted values.

5. CONCLUSION
This paper investigates the equilibrium relationship between micro and macroeconomic variables, and Amman stock exchange (ASE) index through ARDL model (the bound test approach), by using monthly data for the period 2011:1 to 2014:3. Unit root test based on Augment Dickey Fuller (ADF) test procedure shows that the set of the study variables; the industrial production index (IPI), money supply (MS), Investors confidence (FNJI), market capitalization (MC), and market price/earnings (PE) are mutually integrated i.e. I(1), I(0). Consequently the Autoregressive Distributed Lag (ARDL) approach to cointegration was used to explore the long run relationship as well as short term dynamics of relationship between micro and macroeconomic variables, and Amman stock exchange (ASE) index. Results of ARDL long run coefficients reveal that industrial production (IPI), money supply (MS), Investors confidence (FNJI), market capitalization (MC), and market price/earnings (PE) are statistically significant in determining (ASE) index in a long run, indicating that an increase in industrial production index (IPI) as a proxy of the growth rate in real sector, money supply(MS), Market Capitalization (MC), and Market Price /Earnings Ratio (PE) will lead to an increase in ASE price index as a proxy of Amman Stock Exchange (ASE) performance.
The results of error correction model based upon ARDL approach which captures the short term dynamics of (ASE) index and it's determinant, are in line with the long –run results except the results of market price/earnings (PE) which became insignificant. The error correction variable ECM (–1) has been found negative and statistically significant. The Coefficient of the ECM term suggests that adjustment process is quite fast and 77 percent of the previous months disequilibrium in (ASE) index from its equilibrium path will be corrected in the current month.

Data has been tested to examine econometric problems like serial correlation, functional form, normality, Heteroscedasticity. Results indicate that econometric problems like autocorrelation, conflict to normal distribution has not been observed, no model specification error exists with reference to Functional form, and the Heteroscedasticity does not exists. The plots of CUSUM and CUSUMSQ are drawn to check the stability of short run and long run coefficients in the ARDL error correction model. These plots show both CUSUM and CUSUMSQ as within the critical bounds of 5 percent which is an indication of the fact that the model is structurally stable.

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