



Full Length Research Paper

An examination into the impact of trading motives on the dynamic relationship between stock returns and trading volume: evidence from Egypt

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Numerous studies have examined the return correlation among different markets and the relationship between stock returns and trading volume. However, the impact of trading motives on the dynamic relationship between stock returns and trading volume especially in emerging markets is still vague and fragmented. Therefore, this study aims to examine the impact of trading motives on the dynamic relationship between stock returns and trading volume in Egypt by using the daily data of all listed 167 stocks traded in the Egyptian Exchange (EGX) for a period of 6 years, from January 2006 till December 2011. We used the model of Liorenate, Michaely, Saar and Wang (2002) {LMSW model} that utilizes information in volume return dynamics of individual stocks and show that bid-ask spread - which is used as asymmetric information proxy- can explain the extent of speculative trade across firms traded in the Egyptian Exchange. We found evidence supporting the notion that speculative trade is dominant in emerging markets and is also associated with positive serial autocorrelation in stock returns.

Keywords: Stock Returns, Trading Volume, Trading Motives, Egyptian Exchange (EGX), Serial autocorrelation, Asymmetric information, Hedging, Speculation

INTRODUCTION

Dynamic volume return relationship has been used in forecasting expected stock returns for long decades. Recently, this dynamic relationship has been used in describing the nature of stock trade in financial markets and the different roles of the various participants in the market. In this study, we utilize a model developed by Llorente, Michaely, Saar and wang (2002) (LMSW model) that investigate the relationship between trading

motives and serial autocorrelation in stock returns. In this model the different dynamic volume return relationship can unveil market participants trading motives. Our main objective in this research effort is to investigate the relationship between trading motives and different volume return relationships in the Egyptian Exchange (EGX). We will accomplish this objective by utilizing a simple model introduced by Llorente, Michaely, Saar and Wang (2002) (LMSW model). In this model, it is argued that stock returns autocorrelations under intensive trading volume can reveal the main motive for trading. This model generates coefficients that

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can be used to differentiate between asymmetric information-based trades and hedging motivated trades. Then the researchers will investigate the relation between the trading motive coefficients and asymmetric information proxies. The Egyptian financial market is one of the best emerging financial markets according to Morgan Stanley. In the last ten years, the Egyptian financial market has been considered as the fourth highest growing market in all emerging markets with a growth rate of 19%. Thus, the Egyptian financial market deserves more attention and investigation. We applied the LMSW model on all the 167 stocks traded on the Egyptian Exchange (EGX) and extracted coefficients that identify the main motives for trade for all stocks. Having done that, we tested these coefficients against different asymmetric information proxies to identify the relation between serial autocorrelation in stock returns and different trading motives (hedging versus speculation). The rest of this paper is organized as follows: in section 2, the related literature review is discussed and analyzed. Section 3, explains the research methodology, information on the research instruments used, the procedures followed, the techniques adopted to enhance the quality of the research as well as the model adopted (LMSW model) is also provided. The analysis and empirical results are presented in section 4. Section 5 reveals the summary and conclusions of this study.

LITERATURE REVIEW

According to market efficiency hypotheses, all short term and long term patterns in stock returns should be explained by variations in risk associated with these stocks. Thus, market efficiency hypotheses indicate that historical data cannot be used to forecast future patterns in stock prices and returns. However, empirical studies presented shocking evidence regarding price and returns patterns. Among these patterns is serial autocorrelation in stock prices and returns. Therefore, new models were developed to remedy the classical market efficiency theory. In this context there are three different approaches that tried to explain serial autocorrelation in stock prices and returns; i.e. Capital asset pricing models (CAPM), behavioral models, and dynamic-volume return relationship models.

First, the asset pricing model theory started with the work of Sharpe (1964) and Lintner (1969). They build a model where all investors are rational and analyze securities similarly. In their model, differences in asset returns can only be explained by risk variations in assets. After that, many attempts were made to relax the rigid assumptions previously introduced (for example, Merton, 1973; Solnik, 2000; Jacopy et al., 2000). Moreover, many scholars tried to add other factors to beta to explain variations in stock returns. Ross (1976) indicated that more factors are needed with beta in

order to explain stocks return differences; however, he did not indicate the number of factors needed or their nature. Later, Roll and Ross (1980) demonstrated that the five factors they indicated are sufficient to explain different financial assets return variability. Dhrymes, Friend and Gultekin (1984) and Roll and Ross (1984) argued that the number of variables required is changeable according to the variety of assets composing the portfolio. Furthermore, they reported that when the number of assets increases in the portfolio, the number of variables required also increases.

The second set of models; the behavioral models were introduced in response to the failure of classic models in explaining many phenomena in financial markets. The behavioral models contradict with the asset pricing models main assumption about investors' rationality. Behavioral models assume irrational or at least a bounded rational investors behavior. For instance, Barberis, Shleifer, and Vishny (1998) introduced a model that can interpret the long time that prices and returns need to reflect new information. They argued that this delay in response to new information occurs when the new information is in contradiction to investor's beliefs about the financial asset. They added that investor relies on heuristics in making their decisions and not on the new information available, thus it takes long time until prices reflect the new information that contradicts investors beliefs.

Danial, Hirshleifer, and Subrahmanyam (1998) introduced a new model that can interpret serial autocorrelation in stock returns. They claimed that investor's "over confidence and self attribution" are the main reasons for this phenomenon. Their model basically assumes that investors overreact to the signals driven from their private information, while they underestimate the signals driven from public information. Hence, when an investor trades based on his private information and the signals extracted from new public information are in the same direction with his private information, investor become overconfident and tends to overreact on his trade. While, when the signals from public information are different from his private signals, the investor underestimate the public signals and keep trading based on his private information. Therefore, when public information arrives and it boosts private signals, positive serial autocorrelation in prices and returns will be formed. However, when public information contradicts private signals, positive serial autocorrelation are formed first then prices start to reflect the public information and negative serial autocorrelations is formed.

The third set of models depends on the dynamic volume return relationship. This relationship has evolved dramatically in the last 50 years. Since the middle of the sixtieth, academics started to investigate the relationship between prices and volume. They were interested to find out whether a relationship does exist between them. Later in the middle of the seventieth, academics

and professionals were keen to find out whether this relationship can be utilized to forecast future returns. Recently, many researchers have started to use this relationship to describe certain phenomena in financial markets, among these phenomena is serial autocorrelations in stock returns (see for example Mores (1980), Campbell, Grossman and Wang (1993), Wang (1994), and Llorente, Michaely, Saar and Wang (2002))

Regarding the third set of models, Mores (1980) introduced a framework that explains investors' behavior in security markets in the case of asymmetric information presence. He tried to find the characteristics that differentiate between trading in asymmetric information presence and other cases like trading on public information. Using daily data for a sample of 25 securities traded in the American stock exchange, New York stock exchange, and over the counter, he found that asymmetric information trading is associated with both high raises in trading volume and positive serial correlation in returns. He argued that, when private information arrives, informed investors will try to trade with uninformed investors creating high trading volume. Since he assumed the sequential arrival of information, informed traders trade on several trading periods leading to positive serial autocorrelations in stock returns.

Campbell, Grossman and Wang (1993) investigated the relation between aggregate stock market trading volume and serial correlation of daily stock returns. They claimed that trading volume occurs not by the arrival of public information but by the occurrence of random shifts in the stock demand of non-informational traders accommodated by risk-averse market makers. Furthermore, they found that a large trading volume will be associated with a negative autocorrelation in returns. They related this phenomenon to risk allocations between investors. If a large subset of the investors trading in the market became more risk averse while the rest of the market do not change their attitude towards risk, risk will be allocated from investors who became more risk averse to the rest of the market. This reallocation is observed as a rise in trading volume accompanied with price reverse because the trading process does not reflect any change in the expected asset payoff, thus the asset must be sold with a discount to attract other investors.

Wang (1994) developed a model of stock trading in which investors are heterogeneous in their information and investment opportunities. In this model, investors' trade rationally for both informational and non-informational reasons. Their different trading motives trigger different return-volume dynamic relationship. He suggested that under asymmetric information presence, public news about the stock future dividends generate abnormal trading volume. While without information asymmetry presence, the price adjusts to reflect any new information about future dividends. He argued that without information asymmetry, investors will trade only to balance their portfolios when their private investment

opportunities change. In this scenario, trading will be accompanied by changes in the current price followed by price changes in the opposite direction (negative serial autocorrelation). However, with information asymmetry presence the uninformed traders will trade against the informed investors. And when the private information is made public, the uninformed investors realize their mistakes and trade to reverse their positions (leading to positive autocorrelation in returns) and the expected future returns increase.

Llorente, Michaely, Saar and Wang (2002) developed a model based on Wang (1994) model in which investors trade in the stock market for both hedging and speculation motives. They found that returns generated by hedging motivated trades reverse themselves (forming negative serial autocorrelation). While returns generated by speculation motives (using private information) continue themselves (forming positive serial autocorrelation). They argued that stock return autocorrelations under intensive trading volume could reveal the main motive to trade for individual stocks. They tested this model on both NYSE and AMEX stocks. And their empirical results revealed that stocks associated with a high degree of informed trading exhibited return continuation on high volume days. Schneider (2009) developed Llorente, Michaely, Saar and Wang (2002) model (LMSW model) and demonstrated how can trading volume plays a vital role for investors when judging their private information. He showed that when trading volume is high investors tend to follow the current trading trend even if it contradicts their private information leading to positive serial autocorrelations in returns. But when trading volume is low investors trade according to their private information, thus leading to different dynamic volume return relationship according to the difference in investor's private information.

Furthermore, the empirical evidence shows that several financial markets exhibit positive serial autocorrelations in stock returns. For instance, Llorente, Michaely, Saar and wang (2002) found evidence supporting the notion that return continuation associated with high volume is linked to a high degree of informed trading in stocks traded at NYSE and AMEX stock exchanges in the United States. Ciner and Karagozolu (2008) also found evidence for this relation in the Istanbul stock exchange. However, Gebka (2005) found no evidence for return continuation in the polish stock exchange.

From the previous literature review, it can be concluded that the capital asset pricing model (CAPM) failed to address some phenomena in financial markets. Thus, new models were needed to explain these phenomena. Behavioral models and dynamic volume return relationship models were introduced to solve this problem. Among the phenomena that could not be justified by classical asset pricing models is return continuation in stock prices and returns. In this research

effort, we use the Dynamic volume return model developed by Llorente, Michaely, Saar and wang (2002) to investigate the relationship between trading motives (speculative versus risk hedging trade) and dynamic volume return relationship in the Egyptian Stock Exchange.

METHODOLOGY

The main purpose of this section is to provide an outline of the importance of the study and the research methods used and to explain the procedures employed to collect and analyze the data

Research importance

The Egyptian Exchange (EGX) is considered one of the best developing exchanges in Africa and Middle East. In 2009, the Egyptian Exchange was announced the second best developing stock exchange in Africa (the Egyptian stock exchange, 2010). Also it was awarded the best stock exchange in Africa in a competition organized by New York stock exchange in 2008 (the Egyptian stock exchange, 2010). Thus, it is very crucial to understand whether the Egyptian Exchange has improved lately or not? In addition, Asymmetric information problems are more prevalent in emerging markets (Ciner and Karagozoglu, 2008). It can be argued that corporate governance tend to be less developed in these markets allowing insider trading to take place, weakening minority shareholders rights and offering unequal environment for foreign and domestic traders (Ciner and Karagozoglu, 2008). Therefore, we try to utilize a model that links trading motives (hedging vs. speculation based on private information) to serial autocorrelations in stock prices and returns.

In light of the above, we can claim that the following points reflect the research importance:

- This study identify whether the Egyptian market efficiency has increased or not during the past six years (from 2006 till 2011).
- There is a scarcity of studies that examined the relationship between autocorrelation in stock prices and revenues and asymmetric information phenomenon in the Arab markets and specifically the Egyptian market. Hence, this study will shed some light and hopefully pave the way for further future research in several Arab markets.

Research problem

The main research question that this study sets out to address is:

“What is the effect of the trading motives on the dynamic relationship between stock returns and trading volume in the Egyptian Exchange (EGX)?”

From this main question a set of subsidiary questions are further derived. These are:

- Are serial autocorrelations a prevalent phenomena in the Egyptian stock prices and returns?
- Are serial autocorrelations in stock returns attributed to asymmetric information presence in financial markets?

OBJECTIVES

The main objective of this study is to investigate the relationship between serial autocorrelations in stock returns and asymmetric information presence in the Egyptian Exchange (EGX). In addition, this study aims to highlight the extent to which Egyptian stocks are associated with serial autocorrelations in their prices and returns. Hence, we can identify the main objectives of this study as follows:

- To investigate the presence of serial autocorrelations in Egyptian stock returns.
- To examine the relationship between serial autocorrelations in stock returns and asymmetric information presence in the Egyptian Exchange (EGX).

Research hypotheses

Based on the research problem we can formulate the research hypotheses as follows:

- There are serial autocorrelations in Egyptian stock returns.
- There is a positive and significant relationship between serial autocorrelations in stock returns and asymmetric information presence.

Data collection and sample

In this respect, secondary data was collected in the summer of 2012 (i.e. in June 2012) by determining which stocks in the Egyptian Exchange (EGX) had been traded from January 2006 to December 2011. We collected daily data for closing prices, market capitalization, bid-ask spreads, and trading volume from the Egyptian Exchange. Our sample period starts from January 2006 until December 2011. This sample consists of all the 167 listed stocks on the Egyptian Exchange (EGX). We excluded 66 stocks that did not have enough trading days throughout the sample period (we excluded all the stocks that did not have at least 600 trading days). Thus, our final sample consists of only 101 stocks

The empirical model

The LMSW model represents a simple equilibrium model that uncovers trading motives in financial markets. This model depends on the dynamic volume return

relationship to reveal trader's main motives behind their trade (speculation based on private information vs. risk hedging). In this model, return is generated by three different sources: public information, speculation, and hedging. Public information only generates white noise, while returns created by hedging and speculation are serially correlated.

Speculation trade is caused by asymmetric information of informed traders in the market. This kind of trade generates positive return autocorrelations since private information needs several time periods to be fully reflected in prices. On the other hand, hedging trade is due to risk allocation decisions. Since this kind of trade does not reflect any new information, the expected payoff from the asset remains the same and it must be sold at a discount to attract investors to buy it. Thus, prices rise back to its original level in the following period. Therefore, a negative return in one period is followed by a positive return in the other period forming negative return autocorrelations.

Moreover, in the LMSW model (2002), volume plays a vital role to differentiate between price changes generated by new public information and price changes due to speculation or hedging. In this context, hedging and speculative trade are accompanied by large trading volume while public news is incorporated into prices accompanied by normal trade volume. Hence, the main empirical implication of this model is that high volume days will be followed by return reversals (if risk allocation is the main trade motive) or return continuation (if speculation based on private information is the main trade motive). This proposition can be tested using the following equation for each stock:

$$R_{i,t+1} = C0_1 + C1_i \cdot R_{i,t} + C2_i \cdot R_{i,t} \cdot V_{i,t} + error_{i,t} \quad (1) \text{Where}$$

$R_{i,t}$ is the daily return and $V_{i,t}$ is the daily trading volume measured as daily turnover. The daily turnover is the number of shares traded during day (t) divided by the total shares outstanding for each single stock. The empirical testing is very simple. In principle, a trade could contain both hedging and speculation component. If hedging is more dominant than speculation, high volume will be followed by price and return reversals and the coefficient $C2_i$ will be negative and statistically significant. On the other hand, if speculation is more dominant in trade high volume will be followed by price and return continuations and the coefficient $C2_i$ will be positive and significant.

STATISTICAL ANALYSIS

Having the appropriate instruments for this study clearly determined, the next logical step is to select a suitable measure of central tendency and dispersion, and the suitable statistical tests to be employed. Generally,

statistical tests can be classified into two main categories i.e. parametric (also called classical) and non-parametric. This study primarily utilizes five statistical techniques as follows:

- Augmented Dickey Fuller (ADF) test: It is a test used for testing data stationarity. In stationary time series, shocks will be temporary, and over time, their effects will be eliminated as the series revert to their long run mean values. On the other hand, non-stationary time series will necessarily contain permanent components. Therefore, the mean and the variance of a non-stationary time series will depend on time, which leads to cases where a series has no long run mean to which the series returns; and the variance will depend on time and will approach infinity as time goes to infinity (Asteriou and hall, 2011).

In this research effort, We use the augmented dickey fuller test for stationarity testing for both return and volume time series.

- Serial Autocorrelation: According to Studenmund (2010), serial autocorrelation imply that the value of the error term from one time period depends on a systematic way on the value of the error term in other time period. Thus, we can say that serial correlation is the degree to which the outcome of a function depends on the outcome of this function in a previous period(s). In this study, we are not concerned with serial autocorrelations in errors, we are only concerned with autocorrelation in stock prices and returns. Following Llorente, Michaely, Saar and wang (2002) we measure autocorrelation directly using equation (1).

- T-Test: The T-test is used in hypotheses testing. it is used to test whether a certain set of data follows the T-distribution or not. Econometricians usually use it to test hypotheses about individual regression slope coefficients. Simply, this test is used to determine the significance of the independent variables. We use the T-test in order to validate the significance of the estimated coefficients in both the time series and the cross-sectional analysis

- Regression Analysis: in general, regression analysis is used in order to explain the movements in a certain variable by movements in one or more other variables. Regression analysis is used in our study in order to understand the relationship between serial autocorrelation in stock returns and trading motives (hedging verses speculation)

- Cross Sectional Analysis: Cross sectional analysis is very close to regression analysis, however it investigate the relationship between a given variable and one or more other variables at a specific point of time. We use cross sectional analysis to examine the relationship between Trading motives coefficients (extracted from equation (1)) and asymmetric information proxies.

Test predictions

In accordance with the LMSW model, it is expected that the variations in information asymmetry between stocks

determine the cross sectional differences across them in the dynamic volume return relationship. Therefore, stocks with larger degree of information asymmetry are more likely to be exposed to speculative trade and exhibit price and return continuations following high volume days. While stocks associated with lower degrees of information asymmetry are less likely to be exposed to speculative trade and will exhibit price and return reversals following high volume days. Thus, information asymmetry proxies will explain the cross sectional variations between stocks according to the dominant trade motive for each individual stock. The following equation will be used in the cross sectional analysis:

$$C2_i = a + b \cdot Ord(A_i) + e_t \quad (2)$$

Where $Ord(A_i)$ represents the ordinal transformation of an information asymmetry proxy A_i , and $C2_i$ are the coefficient of trading motivation extracted from equation (1). Since the exact nature of the functional relation between information asymmetry and a proxy is not known, the LMSW model indicate that an ordinal transformation allows the use of proxy variables in a unified framework, without focusing too much on the differences in specific magnitudes.

The first proxy we consider is market capitalization (size). We use this proxy after Lo and Mackinlay (1990) who stated that larger firms have less information asymmetry problems while smaller firms may suffer more from asymmetric information problems. Accordingly, it is expected that larger firms are associated with smaller $C2_i$ coefficients. The second proxy we use is bid-ask spread. Our motivation to use this variable is due to Llorente, Michaely, Saar and Wang (2002), they reported that firms that tend to have asymmetric information problems exhibit bigger bid-ask spread, while firms that have less asymmetric information problems exhibit smaller bid-ask spread.

ANALYSIS AND EMPIRICAL RESULTS

Descriptive statistics

We conducted the empirical study on a sample of all the 167 firms registered at the Egyptian Exchange. We excluded 66 firms that had few trade days (we excluded all firms that have less than 600 days of trade through the period of 1st of January 2006 to 31 December 2011. Table (1) below highlights the descriptive statistics for our sample:

Data stationary

After testing for data stationary, we can claim that the data for all our variables is stationary. We used the augmented dickey fuller test for data stationary testing; table (2) - in the appendix- highlights the test results for stock returns and volume

Time series analysis

We used equation (1) for time series analysis to investigate the main trading motive for all the individual stocks in our sample. According to the LMSW model, if the coefficient C2 is positive and significant, the main trading motive is speculation based on private information. However, if the coefficient C2 is negative and significant, the main trading motive is hedging. Further, if the coefficient C2 is insignificant, neither hedging nor speculation is dominant motive for trade for this stock.

$$R_{i,t+1} = C0_1 + C1_i \cdot R_{i,t} + C2_i \cdot R_{i,t} \cdot V_{i,t} + error_{i,t} \quad (1)$$

Table 3 shows the results of the time series analysis. It can be seen from table (3) that 82.18% of the stocks (83 stocks) have a positive C2 coefficient, and 60 of these stocks have a significant coefficient. This result indicates that speculation trading is the main motive for trade in the Egyptian Exchange (EGX). Moreover, table (4) - in the appendix- represents the estimated coefficients for equation (1) for each individual stock and the significance level for each value:

We used equation (2) to examine the relationship between trading motives and asymmetric information in the Egyptian financial market.

$$C2_i = a + b * ORD[A_i] + e_t \quad (2)$$

In this respect, two proxies were employed for information asymmetry (i.e. market capitalization and bid-ask spread). As mentioned earlier, we followed Llorente, Michaely, Saar and Wang (2002) methodology in cross section analysis. $Ord [A_i]$ in equation (2) represents the ordinal transformation of an information asymmetry proxy A_i and $C2_i$ are the coefficient of trading motives obtained from the model in Eq. (1). Tables 5 and 6 show the cross section analysis results for our sample.

From tables 5 and 6 it can be concluded that regarding the bid-ask proxy, we found that the coefficient b is positive as the LMSW Model proposed however it is not significant. While as far as the market capitalization proxy is concerned we found that coefficient b is positive

Table 1. Sample Structure

Entire sample	Volume	Price	Shares Listed	Market Capitalization
average (mean)	797249	553	170724242	4119627655
median	120899	18	52992500	751491959
std. dev.	2667901	4464	421149373	10203812920
min	0	1	500000	6320000
max	140824114	40906	5245690620	138274000000
observations	109675	112416	111908	111908

Table 2. The Augmented Dickey Fuller Test results for stock returns and volume.

No	Company Symbol	Turnover Adf	Turnover P Value	Return Adf	Return P Value
1	EGS65901C018	-8.61	0.000	-35.23	0.000
2	EGS74081C018	-3.07	0.029	-38.03	0.000
3	EGS48031C016	-8.37	0.000	-38.03	0.000
4	EGS48011C018	-6.11	0.000	-31.82	0.000
5	EGS60121C018	-24.60	0.000	-34.63	0.000
6	EGS69101C011	-2.91	0.044	-6.02	0.000
7	EGS3C251C013	-6.44	0.000	-34.91	0.000
8	EGS380S1C017	-35.75	0.000	-37.05	0.000
9	EGS3G0Z1C014	-8.76	0.000	-33.78	0.000
10	EGS3D041C017	-37.48	0.000	-38.25	0.000
11	EGS3D061C015	-37.06	0.000	-34.64	0.000
12	EGS60081C014	-5.62	0.000	-35.73	0.000
13	EGS691S1C011	-4.09	0.001	-34.78	0.000
14	EGS69082C013	-36.08	0.000	-32.17	0.000
15	EGS3C181C012	-34.20	0.000	-35.80	0.000
16	EGS37091C013	-12.81	0.000	-41.14	0.000
17	EGS380P1C010	-36.69	0.000	-26.76	0.000
18	EGS3E181C010	-35.45	0.000	-37.64	0.000
19	EGS65591C017	-7.18	0.000	-32.24	0.000
20	EGS3C351C011	-7.44	0.000	-36.27	0.000
21	EGS65851C015	-6.11	0.000	-16.80	0.000
22	EGS65571C019	-12.19	0.000	-35.75	0.000
23	EGS70431C019	-4.87	0.000	-34.60	0.000
24	EGS30201C015	-15.68	0.000	-34.34	0.000
25	EGS44012C010	-3.16	0.022	-31.97	0.000
26	EGS673T1C012	-5.80	0.000	-35.81	0.000
27	EGS44031C010	-6.98	0.000	-11.76	0.000
28	EGS60041C018	-2.72	0.071	-38.29	0.000
29	EGS33041C012	-6.50	0.000	-37.13	0.000
30	EGS3C401C014	-36.69	0.000	-34.96	0.000
31	EGS69031C010	-37.50	0.000	-36.69	0.000
32	EGS42111C012	-4.67	0.000	-35.81	0.000
33	EGS38381C017	-7.89	0.000	-12.09	0.000
34	EGS3C121C018	-8.90	0.000	-33.45	0.000
35	EGS32221C011	-5.20	0.000	-31.11	0.000
36	EGS78021C010	-10.09	0.000	-28.53	0.000
37	EGS60301C016	-8.37	0.000	-26.67	0.000
38	EGS02051C018	-23.86	0.000	-40.54	0.000
39	EGS38081C013	-6.59	0.000	-38.88	0.000
40	EGS691L1C018	-4.18	0.001	-36.87	0.000

Table 2 Contd.

41	EGS69182C011	-4.38	0.000	-39.47	0.000
42	EGS60241C014	-23.90	0.000	-35.88	0.000
43	EGS3C371C019	-9.92	0.000	-38.98	0.000
44	EGS38171C012	-4.90	0.000	-33.68	0.000
45	EGS60231C015	-7.28	0.000	-34.70	0.000
46	EGS60101C010	-8.18	0.000	-25.76	0.000
47	EGS32041C013	-6.63	0.000	-35.01	0.000
48	EGS33061C010	-9.62	0.000	-38.37	0.000
49	EGS60111C019	-35.35	0.000	-37.32	0.000
50	EGS3G191C017	-7.52	0.000	-22.14	0.000
51	EGS690C1C010	-8.96	0.000	-33.01	0.000
52	EGS32131C012	-4.11	0.001	-33.19	0.000
53	EGS70271C019	-5.70	0.000	-37.68	0.000
54	EGS39011C019	-7.62	0.000	-40.27	0.000
55	EGS30431C018	-5.92	0.000	-36.36	0.000
56	EGS38311C014	-8.90	0.000	-38.50	0.000
57	EGS32331C018	-5.83	0.000	-30.51	0.000
58	EGS10001C013	-6.56	0.000	-37.42	0.000
59	EGS69021C011	-7.22	0.000	-15.89	0.000
60	EGS65071C010	-7.41	0.000	-35.34	0.000
61	EGS65061C011	-8.71	0.000	-32.60	0.000
62	EGS38211C016	-11.76	0.000	-31.74	0.000
63	EGS65091C018	-7.17	0.000	-34.28	0.000
64	EGS3G231C011	-4.71	0.000	-34.76	0.000
65	EGS3C071C015	-7.30	0.000	-35.78	0.000
66	EGS21531C016	-4.94	0.000	-38.52	0.000
67	EGS3C151C015	-7.14	0.000	-33.80	0.000
68	EGS74081C018	-6.06	0.000	-38.18	0.000
69	EGS65441C015	-13.22	0.000	-35.20	0.000
70	EGS65341C017	-4.39	0.000	-25.46	0.000
71	EGS07061C012	-3.83	0.003	-38.79	0.000
72	EGS21451C017	-8.34	0.000	-35.71	0.000
73	EGS70331C011	-7.30	0.000	-37.30	0.000
74	EGS67181C015	-5.41	0.000	-6.86	0.000
75	EGS47021C018	-5.49	0.000	-10.43	0.000
76	EGS36021C011	-4.36	0.000	-37.08	0.000
77	EGS70281C018	-34.63	0.000	-37.60	0.000
78	EGS65081C019	-7.90	0.000	-29.66	0.000
79	EGS30361C017	-5.83	0.000	-39.09	0.000
80	EGS3C111C019	-8.52	0.000	-33.62	0.000
81	EGS30401C011	-4.34	0.000	-37.68	0.000
82	EGS30441C017	-3.16	0.023	-39.21	0.000
83	EGS30451C016	-6.39	0.000	-38.77	0.000
84	EGS23111C015	-6.01	0.000	-31.43	0.000
85	EGS42051C010	-4.75	0.000	-32.10	0.000
86	EGS300L1C011	-5.63	0.000	-31.43	0.000
87	EGS21541C015	-4.85	0.000	-31.16	0.000
88	EGS51191C012	-8.27	0.000	-29.24	0.000
89	EGS3F021C017	-6.75	0.000	-31.34	0.000
90	EGS02211C018	-10.61	0.000	-7.42	0.000
91	EGS30421C019	-4.54	0.000	-39.12	0.000

Table 2 Contd 1.

92	EGS30351C018	-9.99	0.000	-40.72	0.000
93	EGS38421C011	-8.16	0.000	-34.31	0.000
94	EGS65211C012	-5.82	0.000	-35.63	0.000
95	EGS23141C012	-5.31	0.000	-20.61	0.000
96	EGS02091C014	-4.87	0.000	-39.56	0.000
97	EGS651B1C018	-5.15	0.000	-34.06	0.000
98	EGS3A221C018	-5.04	0.000	-33.13	0.000
99	EGS52041C018	-3.62	0.006	-35.92	0.000
100	EGS67291C012	-5.95	0.000	-34.65	0.000
101	EGS65461C013	-5.59	0.000	-32.35	0.000

Table 3. Results of the time series analysis

Entire sample	C0	C1	C2	t0	t1	t2	R-square
average	-0.0450	0.0296	55.0435	0.7221	2.0649	9.3415	8.66%
%c>0	12.87%	60.40%	82.18%	% t > 1.96	5.94%	37.62%	64.36%

Table 4. The estimated coefficients for equation (1) for each individual stock and the significance level for each value

No	company mbol	C0	C1	C2	t0	t1	t2	r
1	EGS65901C018	-0.019	0.07	0.748	0.074	1.131	0.024	0.005
6	EGS69101C011	-0.085	-0.194	13.764	1.012	2.4	5.187	0.059
7	EGS3C251C013	-0.044	0.071	0.825	0.989	1.486	0.213	0.006
8	EGS380S1C017	-0.047	0.049	82.903	0.971	2.405	31.493	0.41
9	EGS3G0Z1C014	-0.106	0.026	317.007	2.218	1.236	29.05	0.376
10	EGS3D041C017	-1.007	-0.009	7.023	0.736	0.326	2.103	0.003
11	EGS3D061C015	-0.02	0.081	20.617	0.549	3.114	6.747	0.038
12	EGS60081C014	-0.03	-0.009	404.799	0.846	0.363	12.912	0.104
13	EGS691S1C011	0	0.013	67.197	0.043	0.513	14.028	0.122
14	EGS69082C013	0.001	0.079	30.747	0.097	3.03	6.467	0.037
15	EGS3C181C012	-0.068	0.048	119.095	1.738	1.842	7.39	0.04
16	EGS37091C013	-0.268	-0.088	431.651	1.661	3.818	20.478	0.232
17	EGS380P1C010	-0.019	0.039	136.592	0.409	1.586	15.224	0.144
18	EGS3E181C010	-0.093	0	1420.051	1.162	0.001	17.284	0.173
19	EGS65591C017	-0.439	0.013	95.791	1.784	0.606	26.635	0.348
20	EGS3C351C011	0.003	0.054	108.515	0.17	6.539	115.36	0.903
21	EGS65851C015	-0.204	0.197	62.826	3.043	9.84	30.144	0.442
22	EGS65571C019	-0.128	0.002	47.314	0.832	0.076	23.028	0.273
23	EGS70431C019	0.022	0.027	43.336	1.069	5.004	178.51	0.957
24	EGS30201C015	-0.089	0.084	101.37	2.036	3.414	14.598	0.138
25	EGS44012C010	0.004	0.043	145.604	0.405	1.757	14.829	0.136
26	EGS673T1C012	0.028	-0.006	385.087	0.558	0.281	22.509	0.262
27	EGS44031C010	-0.016	0.076	139.459	1.222	4.121	38.452	0.519
28	EGS60041C018	-0.078	-0.012	255.904	1.307	0.45	3.514	0.009
29	EGS33041C012	-0.066	0.004	81.647	1.423	0.15	17.029	0.169
30	EGS3C401C014	0.019	-0.007	198.501	0.453	0.375	40.906	0.54
31	EGS69031C010	-0.041	0.033	65.504	1.319	1.422	20.472	0.227
32	EGS42111C012	-0.19	-0.023	234.535	1.2	0.993	20.793	0.233
33	EGS38381C017	-0.183	0.045	51.976	1.433	2.15	28.331	0.365
34	EGS3C121C018	-0.029	0.024	210.451	1.007	0.868	2.971	0.009

Table 4 Contd.

35	EGS32221C011	-0.024	-0.079	6.092	2.96	1.695	6.641	0.062
36	EGS78021C010	-0.01	0.178	6.878	1.531	4.681	2.342	0.064
38	EGS02051C018	-0.008	-0.097	19.413	0.222	3.598	2.368	0.011
39	EGS38081C013	-0.019	-0.028	1.153	0.729	0.974	0.087	0.001
40	EGS691L1C018	0	-0.141	13.069	0.054	3.294	3.648	0.01
41	EGS69182C011	-0.002	-0.116	30.381	0.234	3.562	3.852	0.012
42	EGS60241C014	-0.011	0.046	3.027	0.586	1.567	0.611	0.003
44	EGS38171C012	-0.007	0.076	44.486	0.296	2.588	3.048	0.02
45	EGS60231C015	-0.011	0.08	5.225	0.848	2.456	0.353	0.008
46	EGS60101C010	-0.007	0.18	8.639	0.663	4.93	2.074	0.058
47	EGS32041C013	0.004	0	9.948	0.044	0.01	1.87	0.008
48	EGS33061C010	-0.039	-0.022	23.402	1.07	0.807	2.035	0.003
50	EGS3G191C017	-0.011	0.033	12.757	0.615	1.1	4.782	0.027
51	EGS690C1C010	-0.017	0.088	2.737	2.008	2.517	2.237	0.023
52	EGS32131C012	-0.017	-0.031	5.738	0.715	0.837	5.364	0.032
53	EGS70271C019	0.001	-0.01	0.315	0.045	0.26	0.443	0
54	EGS39011C019	-0.189	-0.079	132.002	0.749	2.896	2.326	0.008
55	EGS30431C018	-0.037	0.028	21.703	0.612	0.976	0.995	0.002
57	EGS32331C018	-0.012	0.102	2.637	1.809	2.717	3.754	0.051
58	EGS10001C013	-0.006	-0.065	8.527	0.032	1.319	1.828	0.002
61	EGS65061C011	-0.018	0.061	3.192	1.307	1.66	2.808	0.023
62	EGS38211C016	-0.02	0.057	5.466	1.835	1.625	3.245	0.025
63	EGS65091C018	-0.01	0.039	5.298	0.867	1.021	1.87	0.011
64	EGS3G231C011	-0.008	0.062	2.198	0.757	2.193	1.958	0.01
65	EGS3C071C015	-0.022	-0.07	9.005	2.222	2.039	5.647	0.025
66	EGS21531C016	-0.024	-0.033	2.756	0.222	1.092	1.019	0.001
67	EGS3C151C015	-0.003	0.015	14.602	0.078	0.501	1.996	0.005
69	EGS65441C015	-0.021	0.065	1.14	0.389	2.012	0.419	0.005
70	EGS65341C017	-0.001	-0.072	0.54	0.032	1.885	1.566	0.003
71	EGS07061C012	-0.004	-0.073	11.67	0.122	1.973	1.809	0.003
72	EGS21451C017	-0.002	0.05	3.105	0.055	1.721	0.664	0.004
73	EGS70331C011	-0.003	0	12.016	0.085	0	1.242	0.001
74	EGS67181C015	-0.007	0.09	2.91	0.116	1.882	2.12	0.033
75	EGS47021C018	-0.012	0.082	4.383	0.423	2.777	2.499	0.018
76	EGS36021C011	-0.006	-0.036	14.38	0.193	0.982	1.866	0.003
77	EGS70281C018	-0.007	-0.003	9.018	0.014	0.094	0.558	0
78	EGS65081C019	-0.005	0.17	0.669	0.188	4.309	0.854	0.039
79	EGS30361C017	-0.033	-0.045	2.924	0.68	1.163	0.445	0.001
81	EGS30401C011	-0.018	-0.021	4.001	0.717	0.56	0.97	0.001
84	EGS23111C015	-0.032	-0.012	14.248	0.593	0.291	5.42	0.043
85	EGS42051C010	-0.008	0.058	2.648	0.256	1.239	2.517	0.029
86	EGS300L1C011	-0.008	-0.001	6.838	0.307	0.031	3.826	0.021
87	EGS21541C015	-0.038	0.043	2.774	0.551	0.834	3.183	0.041
88	EGS51191C012	-0.018	0.145	1.735	1.208	3.949	2.983	0.056
89	EGS3F021C017	-0.011	0.111	3.573	0.659	3.265	2.686	0.034
91	EGS30421C019	-0.024	-0.041	5.564	0.518	1.316	0.5	0.001
93	EGS38421C011	-0.003	-0.007	6.443	0.123	0.194	2.914	0.009
94	EGS65211C012	-0.013	-0.15	14.847	0.392	4.02	6.828	0.033
95	EGS23141C012	-0.014	-0.03	4.638	0.484	0.677	6.311	0.067
98	EGS3A221C018	-0.003	0.034	2.322	0.15	1.101	3.612	0.017
99	EGS52041C018	-0.006	-0.099	1.48	0.13	1.619	2.557	0.006
100	EGS67291C012	-0.013	0.046	1.394	0.366	1.434	2.247	0.011
101	EGS65461C013	-0.012	-0.056	2.39	0.267	1.13	4.104	0.025

Table 5. The cross section analysis results

	Constant	ORD(BAS)	R-squared
Coefficient	9.68	89.82	2.52%
t-Statistic	0.29	1.6	

Table 6. The cross section analysis results

	Constant	ORD(MC)	R-squared
Coefficient	-42.236	192.652	11.6%
t-Statistic	-1.35	3.6	

and significant in contradiction with what the LMSW model proposed.

Enhancing the model predictability

In the previous model, we did not use any variable that capture the common risk factors which affect all stocks return. Hence, leading to inaccurate C2 coefficient estimation in Equation (1) and leading to inaccurate cross sectional analysis. To remedy this problem we add market return variable to capture the common risk factors that affect stock returns. Thus, the new time series equation will be:

$$R_{i,t+1} = C0_1 + C1_i \cdot R_{i,t} + C2_i \cdot R_{i,t} \cdot V_{i,t} + C3_i \cdot R_{Market,t} + error_{i,t} \quad (3)$$

We used equation (3) for all the 101 stocks included in our sample; table (7) highlights the main results that have been achieved:

It can be seen from table (7) that the number of firms with positive C2 coefficient did not change significantly. The number of positive C2 coefficients increased slightly from 83 firms (82.18%) to 84 firms (83.17%). While the average significance increased from 82.18% to 83.17%. Remarkably, the model prediction power doubled after adding the new variable. The R^2 increased from 8.66% to 16.57%. This can lead to effective reduction in error correlations in the time series analysis and more accurate cross sectional estimation.

In addition, table (8) - in the appendix- presents the new coefficients estimated using equation (3) and their associated significance:

Cross sectional analysis

We recalculate the cross sectional relationship between asymmetric information proxies and trading motives coefficients after adding market return as an independent variable in equation (3). Tables 9 and 10 present the main findings.

From tables 9 and 10, It is obvious that adding the market return as an independent variable in equation (3) has positive results on the cross sectional analysis. The significance level for the Bid-ask proxy increased from 1.6 to 1.85 (to come close to 1.96 which is required at 95% confidence level).

CONCLUSIONS AND RECOMMENDATIONS

The results of our empirical analysis highlight some key findings such as positive serial autocorrelation is prevalent in the Egyptian Exchange (EGX). We found that 83% of our sample has positive serial autocorrelations and 60% of the sample has significant positive autocorrelations. This result is consistent with the literature as market anomalies tend to be more dominant in emerging markets.

The Egyptian stock market efficiency is weak. Positive serial autocorrelation in stock returns is dominant in 83% of the sample.

In addition, we found evidence for the relationship between trading motives and asymmetric information presence in the Egyptian stock market. We experienced positive relationship between bid-ask spread (information asymmetry proxy) and serial correlations in stock returns. Firms with higher bid-ask spread tend to have more positive serial autocorrelations in stock returns. This result is consistent with the LMSW model assumptions that bid ask spread widen when information asymmetry between investors increases. We also found that market capitalization (firm size) is positively related to serial autocorrelations. This result is different from what Llorente, Michaely, Saar and Wang (2002) revealed in the United States. They found that firm size is negatively associated with serial autocorrelations in returns. However, this is considered a normal result taking into account the difference in market efficiency between the two markets. In the United States, bigger firms tend to have less asymmetric information problems since they are followed by many analysts. However, in emerging markets (ex. Egypt) both large and small firms suffer from asymmetric information problems between investors.

We also discovered that adding a variable that captures common risk factors increases the predictability of the model and offers more accurate coefficients and less error correlations in the time series analysis. Also it enhanced the significance for the cross-sectional analysis.

Furthermore, this study has shown that several future research could be undertaken. Before identifying directions for future research as indicated by this study, it is crucial to address the urgent need to establish a database for the stock returns and trading volume in

Table 7. Main Results from equation (3)

coefficient		C0	C1	C2		t0	t1	t2	r
all	average	-0.0382	0.01145	55.106		0.695	1.915	9.3437	16.57%
n=101	%c>0	37.62%	58.42%	83.17%	% t > 1.96	5.94%	37.62%	65.35%	

Table 8. The new coefficients and their associated significance

S/N	company	C1	C2	C3	C0	t1	t2	t3	t0	r
1	EGS65901C018	0.056	-7.5	0.223	0.037	1.003	0.26	17.705	0.157	0.184
2	EGS74081C018	-0.002	-9.343	0.085	-0.427	0.063	0.5	4.736	1.26	0.016
3	EGS48031C016	0.049	-6.113	0.01	0.012	1.046	0.427	15.868	1.03	0.152
4	EGS48011C018	0.144	-51.983	0.089	-0.006	5.003	8.032	19.492	0.069	0.246
5	EGS60121C018	0.056	-7.5	0.223	0.037	1.003	0.26	17.705	0.157	0.184
6	EGS69101C011	-0.267	15.625	0.051	-0.075	3.466	6.165	12.014	0.938	0.145
7	EGS3C251C013	0.002	4.384	0.036	-0.038	0.036	1.234	16.798	0.951	0.17
8	EGS380S1C017	0.047	82.555	0.013	-0.044	2.317	31.648	5.315	0.912	0.421
9	EGS3G0Z1C014	0.006	255.914	0.039	-0.073	0.323	23.622	15.547	1.638	0.466
10	EGS3D041C017	-0.019	5.946	0.497	-0.877	0.726	1.807	6.926	0.651	0.036
11	EGS3D061C015	0.059	19.771	0.02	-0.015	2.359	6.713	10.553	0.426	0.107
12	EGS60081C014	-0.01	399.466	0.002	-0.029	0.388	12.624	1.231	0.826	0.105
13	EGS691S1C011	0.019	57.638	0.002	0.001	0.767	11.621	6.347	0.099	0.147
14	EGS69082C013	0.052	21.047	0.007	0.004	2.125	4.68	14.372	0.406	0.158
15	EGS3C181C012	0.041	112.603	0.016	-0.064	1.608	7.12	7.728	1.667	0.079
16	EGS37091C013	-0.096	423.911	0.045	-0.258	4.181	20.253	5.318	1.613	0.247
17	EGS380P1C010	0.036	130.262	0.011	-0.017	1.467	14.403	4.237	0.35	0.154
18	EGS3E181C010	0.001	1412.756	0.004	-0.092	0.035	17.117	0.93	1.148	0.173
19	EGS65591C017	0.004	92.208	0.09	-0.402	0.202	25.776	6.896	1.663	0.369
20	EGS3C351C011	0.052	108.176	0.007	0.005	6.452	116.595	6.73	0.256	0.906
21	EGS65851C015	0.172	52.777	0.066	-0.169	9.725	27.689	20.157	2.852	0.565
22	EGS65571C019	0.004	45.74	0.06	-0.11	0.173	22.556	7.433	0.734	0.3
23	EGS70431C019	0.028	43.298	0.004	0.023	5.065	179.214	4.115	1.13	0.958
24	EGS30201C015	0.074	96.058	0.021	-0.083	3.106	14.181	9.208	1.96	0.186
25	EGS44012C010	0.044	132.226	0.004	0.005	1.808	13.317	6.213	0.509	0.158
26	EGS673T1C012	-0.007	361.665	0.017	0.032	0.302	20.881	6.129	0.635	0.281
27	EGS44031C010	0.062	127.499	0.011	-0.012	3.702	38.187	18.09	1.008	0.609
28	EGS60041C018	-0.011	243.549	0.005	-0.076	0.431	3.331	1.727	1.278	0.011
29	EGS33041C012	0.002	74.95	0.022	-0.06	0.102	15.9	9.277	1.346	0.216
30	EGS3C401C014	-0.006	192.387	0.025	0.025	0.354	41.013	11.08	0.594	0.576
31	EGS69031C010	0.009	59.635	0.02	-0.035	0.402	19.322	12.115	1.188	0.299
32	EGS42111C012	-0.028	218.486	0.083	-0.155	1.243	19.82	10.019	1.011	0.283
33	EGS38381C017	0.039	50.232	0.042	-0.169	1.849	27.41	6.212	1.338	0.382
34	EGS3C121C018	0.014	220.949	0.009	-0.027	0.519	3.158	6.149	0.954	0.034
35	EGS32221C011	-0.121	6.396	0.007	-0.023	2.899	7.823	19.271	3.198	0.255
36	EGS78021C010	0.096	11.132	0.006	-0.011	2.84	4.309	20.761	1.884	0.281
37	EGS60301C016	0.339	-3.061	0.027	-0.017	11.673	1.42	8.854	0.294	0.151
38	EGS02051C018	-0.098	19.266	0.008	-0.006	3.662	2.364	4.2	0.166	0.023
39	EGS38081C013	0.014	220.949	0.009	-0.027	0.519	3.158	6.149	0.954	0.034
40	EGS691L1C018	-0.128	12.405	0.002	0	3.046	3.532	7.759	0.067	0.05
41	EGS69182C011	-0.123	29.416	0.004	-0.001	3.853	3.801	7.528	0.128	0.05
42	EGS60241C014	0.04	3.767	0.009	-0.009	1.426	0.785	9.597	0.489	0.063
43	EGS3C371C019	-0.029	-1.672	0.009	-0.064	1.07	0.068	1.337	0.483	0.002
44	EGS38171C012	0.069	43.926	0.01	-0.004	2.397	3.076	8.03	0.189	0.062

Table 8 Contd.

45	EGS60231C015	0.077	-1.478	0.008	-0.009	2.483	0.104	11.748	0.664	0.095
46	EGS60101C010	0.182	8.145	0	-0.027	4.964	1.943	1.06	1.244	0.058
47	EGS32041C013	0.001	9.866	0.009	0.006	0.011	1.856	1.88	0.069	0.011
48	EGS33061C010	-0.021	22.854	0.004	-0.038	0.796	1.989	2.016	1.038	0.006
49	EGS60111C019	0.016	-1.815	0.008	-0.005	0.575	0.736	5.729	0.191	0.023
50	EGS3G191C017	0.004	13.196	0.015	-0.007	0.144	5.457	17.66	0.461	0.201
51	EGS690C1C010	0.029	3.485	0.008	-0.017	0.948	3.253	20.94	2.236	0.252
52	EGS32131C012	-0.071	6.426	0.013	-0.015	1.979	6.259	11.367	0.673	0.112
53	EGS70271C019	-0.022	0.461	0.005	0.002	0.603	0.655	5.664	0.112	0.022
54	EGS39011C019	-0.074	116.214	0.039	-0.173	2.704	2.044	2.886	0.689	0.013
55	EGS30431C018	0.017	19.611	0.019	-0.031	0.615	0.911	6.083	0.532	0.027
56	EGS38311C014	-0.014	-2.138	0.006	-0.033	0.52	0.131	1.904	0.532	0.003
57	EGS32331C018	0.042	2.804	0.006	-0.011	1.281	4.578	21.277	1.918	0.28
58	EGS10001C013	-0.067	8.597	0.045	0.005	1.364	1.854	4.287	0.026	0.015
59	EGS69021C011	0.178	0.439	0.031	-0.006	4.081	0.338	19.604	0.212	0.242
60	EGS65071C010	-0.09	3.422	0.013	-0.017	2.975	6.089	17.372	1.134	0.192
61	EGS65061C011	0.009	3.505	0.015	-0.016	0.284	3.652	24.019	1.328	0.304
62	EGS38211C016	-0.003	5.952	0.013	-0.018	0.109	4.533	30.417	2.111	0.408
63	EGS65091C018	-0.027	7.326	0.012	-0.008	0.836	3.094	24.936	0.885	0.311
64	EGS3G231C011	0.061	2.206	0.002	-0.008	2.153	1.97	3.097	0.719	0.016
65	EGS3C071C015	-0.095	7.709	0.01	-0.019	3.187	5.595	22.134	2.169	0.274
66	EGS21531C016	-0.034	2.79	-0.002	-0.025	1.097	1.031	0.289	0.227	0.001
67	EGS3C151C015	0.009	14.947	0.01	-0.001	0.299	2.056	4.491	0.022	0.018
68	EGS74081C018	0.177	-95.769	0.007	0.055	5.624	10.156	2.667	1.054	0.07
69	EGS65441C015	0.063	0.721	0.017	-0.016	1.979	0.268	6.128	0.297	0.031
70	EGS65341C017	-0.076	0.53	0.009	0.002	2.03	1.576	8.822	0.089	0.054
71	EGS07061C012	-0.059	9.525	0.008	-0.001	1.608	1.486	5.099	0.021	0.021
72	EGS21451C017	0.046	3.35	0.012	0.001	1.598	0.725	6.103	0.023	0.029
73	EGS70331C011	-0.002	11.525	0.009	0	0.086	1.205	5.822	0.003	0.024
74	EGS67181C015	0.068	3.517	0.041	0.001	1.504	2.699	12.659	0.018	0.131
75	EGS47021C018	0.079	4.32	0.005	-0.01	2.693	2.473	3.531	0.374	0.026
76	EGS36021C011	-0.031	11.385	0.01	-0.003	0.84	1.491	5.924	0.093	0.026
77	EGS70281C018	-0.002	7.072	0.121	0.027	0.076	0.441	4.903	0.058	0.017
78	EGS65081C019	0.129	0.836	0.022	0	3.663	1.197	19.211	0.015	0.236
79	EGS30361C017	-0.036	1.598	0.017	-0.027	0.941	0.247	6.897	0.571	0.033
80	EGS3C111C019	0.135	-0.611	0.041	0.017	2.734	0.566	7.315	0.163	0.05
81	EGS30401C011	-0.028	5.494	0.011	-0.016	0.781	1.368	8.953	0.669	0.054
82	EGS30441C017	-0.027	-3.406	0.008	-0.026	0.846	0.288	3.059	0.523	0.008
83	EGS30451C016	0.032	-17.251	0.016	-0.016	0.691	1.402	3.325	0.177	0.01
84	EGS23111C015	-0.092	17.061	0.044	-0.029	2.509	7.065	16.543	0.586	0.197
85	EGS42051C010	0.017	2.866	0.029	-0.002	0.409	3.034	18.624	0.063	0.218
86	EGS300L1C011	-0.064	7.623	0.025	-0.003	1.921	4.942	22.199	0.124	0.272
87	EGS21541C015	0.032	2.439	0.055	-0.02	0.673	3.053	16.521	0.309	0.195
88	EGS51191C012	0.063	2.093	0.018	-0.016	2.179	4.557	29.426	1.361	0.412
89	EGS3F021C017	0.091	3.216	0.012	-0.007	2.868	2.598	14.926	0.456	0.164
90	EGS02211C018	0.29	-0.277	0.014	0.003	7.56	0.59	12.375	0.124	0.169
91	EGS30421C019	-0.038	4.406	0.005	-0.023	1.195	0.396	1.881	0.491	0.004
92	EGS30351C018	-0.038	-13.146	0.006	-0.026	1.169	1.677	2.641	0.628	0.012
93	EGS38421C011	-0.044	7.311	0.02	0.001	1.421	3.579	15.741	0.03	0.155
94	EGS65211C012	-0.165	14.6	0.017	-0.008	4.562	6.958	10.34	0.25	0.1
95	EGS23141C012	-0.034	4.406	0.018	-0.008	0.803	6.292	12.157	0.301	0.154

Table 8 Contd.

96	EGS02091C014	0.022	-17.56	0.018	0.075	0.777	5.893	3.572	0.78	0.033
97	EGS651B1C018	0.021	3.412	0.028	-0.009	0.691	3.873	15.521	0.253	0.161
98	EGS3A221C018	0.02	2.241	0.013	0.001	0.712	3.798	16.387	0.079	0.173
99	EGS52041C018	-0.112	1.572	0.028	0	1.925	2.842	11.728	0.006	0.094
100	EGS67291C012	0.038	1.465	0.018	-0.008	1.227	2.445	10.221	0.254	0.079
101	EGS65461C013	-0.111	2.859	0.031	-0.008	2.383	5.234	14.244	0.198	0.146

Table 9. the cross sectional relationship between asymmetric information proxies and trading motives coefficients

	Constant	ORD(MC)	R-squared
Coefficient	-39.47098	187.3002	11.26%
t-Statistic	-1.284185	3.54437	

Table 10. the cross sectional relationship between asymmetric information proxies and trading motives coefficients

	Constant	ORD(BAS)	R-squared
Coefficient	3.329362	102.5387	3.37%
t-Statistic	0.103806	1.859526	

Egypt, which would be useful for both researchers and policy makers. The Egyptian Financial Supervisory Authority (EFSA) and the Egyptian Exchange (EGX) are the only official sources for providing data relating to stock returns and trading volume in Egypt. However, these agencies generally have disorganized and inadequate data about the stock returns and trading volume.

Finally, comparative research that covers the impact of trading motives on the dynamic relationship between stock returns and trading volume in different developing countries is needed. In particular, in the Middle East region and North Africa, as this part of the world seems to be much neglected in terms of research. These countries (such as Saudi Arabia, Kuwait, UAE, Qatar, Oman and Bahrain) have also embarked on the road of daily extensive trading and a study, which compares this, would be extremely useful and would shed important light on the impact of trading motives on the dynamic relationship between stock returns and trading volume

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