Islamic University - Gaza
Research and Postgraduate Affairs
Faculty of Commerce
Business Administration Department

The Impact of Information Asymmetry on the cost of equity capital in the Palestine Exchange

Prepared by
Mohammed Yousef Eid

Supervised by
Dr. Wael Hamdi Daya

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ABSTRACT

The purpose of this study is to examine the impact of information asymmetry on the cost of equity capital (COEC). The study population and sample are the listed companies in Palestine Exchange (PEX) from 2006 to 2013, which are 50 companies. Hypotheses are tested by using multiple linear regression analysis method, through Stata software, based on extracted high frequency (long term data) trading data from the Palestine Exchange (PEX). In this study, information asymmetry is measured by the bid–ask spread of companies, while the cost of equity capital is measured by required rate of return which is computed based on closing price. Five hypotheses are used to test the model of information asymmetry. In addition, the main argument is that there is positive relationship between information asymmetry (bid-ask spread) and the cost of equity capital. The results show significant and very weak relationship between information asymmetry, bid-ask spread, and cost of equity capital. Furthermore, the numbers of trades, trading volume and trades volume have almost the same impact on the COEC due to high multicollinearity among them; they do not have relationship on COEC. Also, there is no relationship between volatility and COEC. Finally, the results indicated that PEX is an inefficient market.

الملخص

تهدف هذه الدراسة إلى اختبار تأثير تباين المعلومات على تكلفة حقوق الملكية، تم إجراء الدارسة على 50 شركة مدرجة ببورصة فلسطين من 2006 حتى 2013، تم اختبار الفرضيات باستخدام تحليل الانحدار الخطي المتعدد باستخدام برنامج Stata وذلك بعد الحصول على بيانات التداول من بورصة فلسطين للأوراق المالية، تم قياس تباين المعلومات في هذه الدراسة باستخدام الفرق بين أفضل عرض وطلب، كما تم احتساب تكلفة حقوق الملكية بناء على تغير سعر الإغلاق، تم وضع خمس فرضيات لاختبارها باستخدام نموذج رياضي، وكانت الفرضية الأساسية بوجود علاقة طردية بين تباين المعلومات وتكلفة حقوق الملكية، النتائج أظهرت وجود علاقة طردية ضعيفة بين تباين المعلومات وتكلفة حقوق الملكية، كما تبين وجود ارتباط قوي بين عدد الصفقات وحجم الصفقة (عدد أسهم الصفقات) وقيمة الصفقة، بالإضافة إلى أن ليس لهم أي تأثير على تكلفة حقوق الملكية، كما تبين أنه لا يوجد علاقة بين سرعة تغير سعر الإغلاق على تكلفة حقوق الملكية، وأخيراً تشير النتائج إلى أن بورصة فلسطين سوق غير كفؤة.

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Dedication

To Allah (The Merciful God), To My Family, and to My Friends

To my Father and Mother: God With you

To my Brothers and sisters: I hope to be the best for you

To my Wife for her understanding and patience and for My son Yousef

I Love you all

To my Friends

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List of Acronyms

1q	First Quartile
3q	Third Quartile
ADF	Augmented Dickey-Fuller
AIC	Akaike's Information Criterion
AMEX	American Stock Exchange
ASX	Australian Stock Exchange
CDS	Clearing, Depository and Settlement Center
COC	Cost of Capital
COEC	Cost of Equity Capital
EPS	Earnings Per Share
ERP	Equity Risk Premium
GR	Growth Rate
IV	Intrinsic Value
JD	Jordanian Dinar
KPSS	Kwiatkoowski-Phillips-Schmidt-Shin
Max	Maximum Value
Min	Minimum value
MV	Market Value
NASDAQ	National Association of Securities Dealers Automated Quotations
NT	Number of Trades
NYSE	New York Stock Exchange
OCF	Operating Cash Flow
PEX	Palestine Exchange
PP	Phillips Perron
SSM	Saudi Stock Market
SSM	Saudi Stock Market
Stdev	Standard deviation
TVa	Trading Value
TVo	Trading Volume
USD	United Stated Dollar
Var	Variance

Chapter One: Introduction

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Chapter One
Introduction

1.1. Background:

The financial markets or stock exchange markets have great impact upon the economy in any country. Beside the enormous attention among stock exchange markets, these markets work as a collective tool of capitals to promote the investments and the development projects. The performance of stock exchange markets is considered as indicator of the economy strength, stability, and efficiency. Accordingly, stock markets have critical tasks which perform to send messages for many groups. Firstly, governments care about the stock market stability which considers essential base of promoting its political, economic, and social programs. Secondly, investors and owner of equity care about the assets' risk level and the expected return on their investments. Thirdly, lenders and banks care about their loans and interests repayments on the maturity date. Fourthly, financial analysts care about the financial reports, which disclosed by companies, to use it in companies ranking based on profitability, risk, and other ratios. Fifthly, the companies' management take care about the company status, since fundamental decisions like investing, expanding, pricing, distributing, buying and financing need to be taken under certain or riskless probabilities. Sixthly, suppliers care about the levels of profitability and liquidity. Finally, all these groups give huge consideration regarding the information which could affect one or many aspects of their concerns. Despite the importance and impact of information quality on stock markets, getting the necessary information to support the investor or the relevant authorities is one of the biggest challenges that face stock markets. Accordingly, the stock market's management works to implement rules and systems which provides enough, correct, and transparent information. As a result, various parties can benefit from these information fairly and without any possibility, from any party, to make unusual profits.

Practically, delivering all the necessary information to all parties fairly imposes big challenge to the relevant authorities. Therefore, Information asymmetry is existed mostly but with different forms and volumes. The most important concern is that it affects stock markets negatively. One of the most important effects of information asymmetry is on cost of equity capital. Easley and O'hara (2004) finds that the differences in the composition of information between public and private

information affect the cost of capital and investors demand higher return to hold stocks with greater private information. This higher return reflects the fact that private information increases the risk to uninformed investors of holding stock because informed investors are better able to shift their portfolio weights to incorporate new information. Prior work suggests that better information can reduce required rate of return by enlarging the firm's investor base, thereby improving risk sharing Merton (1987), and reducing estimation risk (Leuz and Verrecchia, 2004). Additionally, recent literature like Nuryaman (2014), He et al. (2013), Lambert et al. (2012), Armstrong et al. (2011), Verdi (2005), Botosan et al. (2004), Easley and O'hara (2004), Leuz and Verrecchia (2004), Easley et al. (2002), Botosan (1997), Diamond and Verrecchia (1991), and Amihud and Mendelson (1986) emphasize that information is not a separate factor in determining the cost of equity capital and play an important role in determining the cost of equity capital. Further, firms with more forthcoming information disclosure policies are shown to be associated with lower cost of equity capital.

The purpose of this study is to examine the Impact of information asymmetry on the cost of equity capital in PEX. It is first study which examines information asymmetry term in PEX.

The first chapter is an introductory which aims to present problem statement, variables, hypotheses development, study objectives, and study importance. The second chapter discusses the information asymmetry concept and types. Additionally, it explains bid-ask spread, liquidity, trader types, market efficiency and their relations with information asymmetry. Also, the second chapter present the concept of cost of capital, cost of equity capital, and Palestine Exchange rules, index, and the its activity development. The third chapter shows literature review of information asymmetry and its relation with cost of equity capital studies, related studies, and PEX studies. The fourth chapter clarifies study methodology and results. This chapter illustrates study sample and data, model, the descriptive analysis, and results. The fifth chapter shows the conclusions and recommendations

1.2. Problem Statement

The fundamental information is considered the source of decision making in stock markets. Therefore, investors look for fundamental information to make rational decisions. In addition, the companies and the stock markets management are required to provide investors with necessary information because information have direct impact on stock prices. As a result, investors try to protect their investments while the opposite situation can happen when the information asymmetry prevent traders, or some of them, of being updated or having completed information. Consequently, information asymmetry will affect the cost of equity capital. So, the main question of this study is:

- What is the impact of Information asymmetry on the cost of equity capital?

The sub-questions are:

- What is the impact of bid-ask spread on the cost of equity capital?
- What is the impact of volatility on cost of equity capital?
- What is the impact of number of trades on cost of equity capital?
- What is the impact of trading volume on cost of equity capital?
- What is the impact of trading value on cost of equity capital?

1.3. Variables:

1.3.1. Dependent variables

- Cost of equity capital is the rate of return on a stock that realized through capital gain or loss in the value of stock.

1.3.2. Independent variables:

- Bid-ask spread is the daily difference among the highest purchasing prices and the lowest selling prices.
- Volatility is a daily measure of share price variation.
- Number of trades is daily amount of trades that are being made among stock.
- Trades volume is the daily amount of shares that are being traded among a security.
- Trades value is the equivalent market price of traded stock in U.S. Dollars or Jordanian Dinar.

1.4. Hypotheses Development

A number of recent studies suggest that there is link between the cost of equity capital and information asymmetry. Studies like Nuryaman (2014) who found that information asymmetry has positive influence on the cost of equity capital. He et al. (2013) ,who used the bid–ask spread as a measure of information asymmetry, documents a significant and positive relation between information asymmetry and ex ante investor's required rate of return.

Lambert et al. (2012) and Armstrong et al. (2011) studies investigate the relation between information asymmetry and cost of equity capital when markets are imperfectly and perfectly competitive. Lambert et al. (2012) demonstrate that information asymmetry influences the amount of market illiquidity, which influences the amount of information that is reflected in prices. This reduces investors' average precision and raises the cost of capital in imperfect markets. When markets are perfectly competitive, Information asymmetry does not affect the cost of capital. Armstrong et al. (2011), who used five measures of information asymmetry two of them are market-based which are the adverse selection component of the bid-ask spread and the bid-ask spread itself, find positive relation when equity markets are imperfectly competitive and no relation when equity markets are perfectly competitive.

Verdi (2005) used bid-ask spreads, share depth, firm age, number of analysts following the firm, trade volume, and share turnover as indicators of Information Asymmetry. He finds that information asymmetry has a significant negative relation with the implied equity cost of capital.

Easley and O'hara (2004) show that differences in the composition of information between public and private information affect the cost of capital. They clarify that investors demanding a higher return to hold stocks with greater private information. This higher return arises because informed investors are better able to shift their portfolio to incorporate new information, and uninformed investors are thus disadvantaged. In equilibrium, the quantity and quality of information affect asset prices. In the same context, Botosan et al. (2004) find that cost of equity capital is increasing in the precision of private information and cost of equity capital is decreasing in the precision of public information (after controlling for the precision of private information). In addition, researchers document a negative association

between cost of equity capital and the precision of public information. Leuz and Verrecchia (2000) show that higher information quality leads to a lower cost of capital via its effect on expected cash flows. Also, Diamond and Verrecchia (1991) show that revealing public information to reduce information asymmetry can reduce a firm's cost of capital by attracting increased demand from large investors due to increased liquidity of its securities.

Amihud and Mendelson (1986) study the effect of the bid-ask spread on asset pricing. The results suggest that liquidity-increasing financial policies can reduce the firm's opportunity cost of capital, and provide measures for the value of improvements in the trading and exchange process. The higher yields required on higher-spread stocks give firms an incentive to increase the liquidity of their securities, thus reducing their opportunity cost of capital. Consequently, liquidity-increasing financial policies may increase the value of the firm.

The study argument resets on the discussed theory which implies an association is existed between the information asymmetry and cost of equity capital. At the same time, theory and empirical evidence support this relation. Accordingly the study hypotheses are:

1. $H_{1:}$ There is positive relationship between bid-ask spread and cost of equity capital.
2. H_2: There is positive relationship between volatility and cost of equity capital.
3. H_3: There is positive relationship between number of trades and cost of equity capital.
4. H_4: There is positive relationship between trading volume and cost of equity capital.
5. H_5: There is positive relationship between trading value and cost of equity capital.

1.5. Study Objectives:

This study aims to achieve many objectives:

1. Determining the status of information asymmetry in PEX.
2. Quantifying the bid-ask spread, volatility, number of trades, trades volume, and trades value.
3. Comparing and ranking the market sectors among study variables, to define the relations.
4. Investigating the impact of bid-ask spread, volatility, number of trades, trades volume, and trades value on COEC.
5. Recommending many suggestions to develop the PEX.

1.6. Study Importance

The impact of information asymmetry on the cost of equity capital in PEX is examined in this study. Since, the Palestine Exchange is an indicator of the Palestine economy. Additionally, this stock market have a great economic stamp regarding many groups e.g. government, investors, banks, financial analysts, the listed companies, suppliers, and dealers. So, this study is very valuable to the economy and the relevant authorities and parties.

Moreover, it tries to explore the information status especially the information asymmetry problem. Considering the information is the source of decision making in stock markets. Therefore, the related parties and investors look for the information particularly the fundamental information to make rational decisions. Because the decisions that are based on this information have direct impact on the stock prices values. In conclusion, it affects the cost of equity capital, which is considered one of the most critical variables that investors look for it. Additionally, the study argument was not discussed before on PEX, according to the researcher observation.

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Chapter Two

Information Asymmetry

2.1 Introduction

Information Asymmetry occurs when one party in a transaction has more or better information than other. Many examples are used like car sale, stock broking, real estate business, and life insurance transactions. Usually, the seller has more information about his or her product than the buyer although reverse may also be true. This situation was first explained by Kenneth Arrow in 1963. Kenneth Arrow, Nobel Prize winner in 1972, is considered the first one who discussed the asymmetric information, when he investigate it for medical-care industry in 1963. In 2001, George Akerlof, Michael Spence, and Joseph Stiglitz win with Nobel Prize in Economics filed for their contributions of information asymmetry (Wankhade and Dabade, 2010). The Royal Swedish Academy of Sciences (2001) in its notification for the Nobel Prize said:

> "Akerlof, Spence, and Stiglitz's analyses form the core of modern information economics. Their work transformed the way economists think about the functioning of markets. The analytical methods they have suggested have been applied to explain many social and economic institutions, especially different types of contracts."(Wankhade and Dabade, 2010,p. 13)

Since, investment is very important decision. In addition, every and organization or investor should decide how to invest their funds, evaluate the profitability of investments, and cost of equity capital to compare between the best strategies for financing their operations (Beneda, 2003). Many important investigations related to the asymmetric information are done on the cost of equity capital in the stock markets. Studies like Fama (1970), Botosan and Plumlee (2000), Joos (2000), Leuz and Verrecchia (2000), Healy and Palepu (2001), Easley and O'hara (2004), Leuz and Verrecchia (2004), Habib (2005), Verdi (2005), Armstrong et al. (2011), Lambert et al. (2012), He et al. (2013), Daya (2014), Ebihara et al. (2014), and Mazouz et al. (2014) introduce new theories and empirical evidences that examined information asymmetry.

2.2 Information Asymmetry Concept

In the literature review, there are many terms used for information asymmetry like Information imbalance, information imperfections, information disadvantage, and private information as exclusive information. Furthermore, many definitions clarifies the information asymmetry concept.

Asymmetric information is a situation when the managers of a company have access to information that is not available for the outside parties (Nuryaman, 2014).

The difference in information between the parties of a transaction is called "Information Asymmetry". In most cases, the seller has more or better information about his/her product than the buyer, although vice versa can happen (Wankhade and Dabade, 2010).

Stiglitz (2002,p. 469) state one of the simplest and clearest definitions:

> "… fact that different people know different things: workers know more about their ability than does the firm; the person buying insurance knows more about his health, e.g., whether he smokes and drinks immoderately, than the insurance firm; the owner of a car knows more about the car than potential buyers; the owner of a firm knows more about the firm than a potential investor; the borrower knows more about the riskiness of his project than the lender does"

Harris (2002) identifies the information asymmetries as traders know more about values and what other traders intend to do. Therefore, traders are either well-informed or less-informed. Well-informed traders have a great advantage over those who do not. Furthermore, those traders profit at the expense of less informed traders. So, less informed traders, called noise traders also, try to avoid well-informed traders.

2.3 Information Asymmetry Types and Examples

There are two types of information asymmetry, which are adverse selection and moral hazard. The first is adverse selection, called sometimes ex-ante hidden information. It happens when the required information by shareholders, for decision making, are not delivered to them, like interior conditions and prospects of the company. This problem can happen even before signing any contracts or making any transactions. The second is moral hazard, called ex-post hidden information. It involves activities conducted by the company's managers that are not entirely noticed by shareholders and lenders. Therefore, the manager could perform actions outside the knowledge of shareholders. This issue happens after making deal or transaction (Scott, 2003). Richardson (2000) shows that there is positive relation between them. This means that managers are more aware of internal information and prospects of the company in the future compared to shareholders. As a result, asymmetric information encourages managers to present biased or even unreal information, especially if the information relates to the measurement of their performance.

Akerlof (1970) clarifies an example of used cars in resale market to discuss the information asymmetry case. He utilizes the term "lemons" for any low-quality product that throw out a high-quality product from a market. He argued that, when the buyer is less informed than the seller or uncertain about the product quality then he might not or refuse to pay the price for the good quality products, since the product might be bad. As a result, the seller has no incentive to make good-quality products. In other words, the bad-quality product pushes the good-quality product out of the market.

Another example of information asymmetry is optimal matching savings to investment opportunities. Usually, many new entrepreneurs attract household savings to fund their business ideas. While both savers and entrepreneurs would like to do business with each other, matching savings to business investment opportunities is complicated for at least two reasons. First, entrepreneurs typically have better information than savers about the value of business investment opportunities and incentives to overstate their value. Savers, therefore, face an ‘‘information problem’’ when they make investments in business ventures. Second, once savers invest in their

business ventures, entrepreneurs have an incentive to expropriate their savings, creating an ‘‘agency problem’’(Healy and Palepu, 2001).

There are several solutions to the lemons problem. Optimal contracts between entrepreneurs and investors will provide incentives for full disclosure of private information. Another potential solution is regulation that requires managers to fully disclose their private information. Finally, because of the lemons problem, there is a demand for information intermediaries, such as financial analysts and rating agencies, who engage in private information production to uncover managers’ superior information (Healy and Palepu, 2001).

Figure 1 provides a schematic of the role of disclosure, and information and financial intermediaries in the working of capital markets. The left side of **Figure 1** presents the flow of capital from savers to firms.

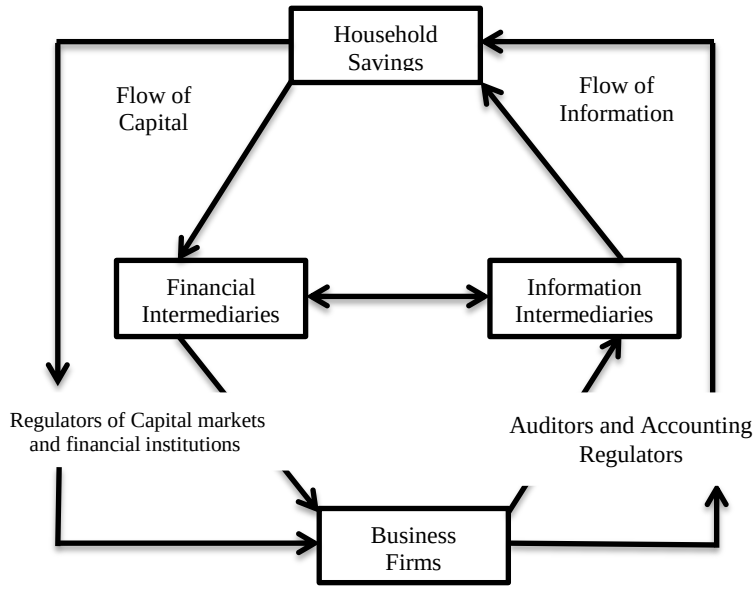

Figure 1: Financial and information flows in a capital market economy (Healy and Palepu, 2001)

Capital can flow to business ideas in two ways. First, it can flow directly from savers to businesses. A second and more typical way for capital to flow from savers to businesses is through financial intermediaries, such as banks, venture capital funds, and insurance companies. The right side of the figure presents the flow of information from businesses to savers and intermediaries. Firms can communicate directly with investors through such media as financial reports and press releases. They also communicate with financial intermediaries or through information intermediaries, such as financial analysts. A variety of economic and institutional factors determine

whether contracting, regulation and information intermediaries eliminate information asymmetry, or leave some residual information problem. These factors include the ability to write, monitor, and enforce optimal contracts, proprietary costs that might make full disclosure costly for investors, regulatory imperfections, and potential incentive problems for intermediaries themselves (Healy and Palepu, 2001).

Also, There are several solutions to the agency problem. Optimal contracts between entrepreneurs and investors, such as compensation agreements and debt contracts, seek to align the interests of the entrepreneur with those of external equity and debt claimants. These contracts frequently require entrepreneurs to disclose relevant information that enables investors to monitor compliance with contractual agreements and to evaluate whether entrepreneurs have managed the firm's resources in the interests of external owners. A second mechanism for reducing agency problems is the board of directors, whose role is to monitor and discipline management on behalf of external owners. Finally, information intermediaries, such as financial analysts and rating agencies, engage in private information production to uncover any manager misuse of firm resources (Healy and Palepu, 2001).

Stiglitz (2002) discusses incentives for gathering and disclosing information. He argues that more able individuals (lower risk individuals, firms with better products) will receive a higher wage (will have to pay a lower premium, will receive a higher price for their products) if they can establish that they are more productive (lower risk, higher quality).

In addition, some actions convey information. The quality of firm's guarantee conveys information about the quality of the product. The guarantee is desirable not just because it reduces risk, but because it conveys information. So, customers are more willing to treat a firm that issues a better guarantee as its product is better and therefore are more willing to pay a higher price. The willingness of an entrepreneur to hold large fractions of his wealth in a firm conveys information about his beliefs in the firm's future performance. If a firm promotes an individual to a particular job, it may convey information about the firm's assessment of his ability. On other side, selling entrepreneur's shares convey a negative signal concerning his views of the future prospects of his firm (Stiglitz, 2002).

For that reasons, some individuals have an incentive to disclose information and some have not. Either because, such information might lead others to think less well of them, or because conveying information may interfere with their ability to

appropriate rents. For example, with perfect information and perfect competition, any firm that charged a price higher than the others would lose all of its customers. In either case, the fact that actions convey information leads people to alter their behavior, and changes haw markets function. This is why information imperfections have such profound effects (Stiglitz, 2002).

Once one recognizes that actions convey information, two results follow. First, in making decisions about what to do, individuals will not only think about what they like but how it will affect others' beliefs about them. Secondly, it is noted earlier that individuals have an incentive to "lie", the less able to say that they are more able. For example, if it becomes recognized that those who walk up to the fifth floor to apply for insurance are more healthy, then the insured person might be willing to do so even if he/she is not so healthy, to fool the insurance company (Stiglitz, 2002).

2.4 Bid – Ask Spread

Bid – Ask spread is the most famous measure of information asymmetry and liquidity in stock exchange markets. It represents the difference among the highest purchase prices which the trader (stock trader) is willing to buy a stock with the lowest selling price which the trader is willing to sell (Nuryaman, 2014). In addition, it reflects the difference between what active buyers must pay and what active sellers receive. It is an indicator of the cost of trading and the illiquidity of a market (Stoll, 2001).

Leuz and Verrecchia (2000) choose three proxies for the information asymmetry component of capital from the theoretical and empirical literature: the bid-ask spread, trading volume, and share price volatility. In addition, Bartov and Bodnar (1996) assume that the bid-ask spread is a "natural" proxy for information asymmetry.

Stoll (1989) and Wuyts (2007) suggest that bid–ask spread has three components. The first one is Order processing cost, handling cost, which is the fixed cost of doing business. In other words, maintaining a continuous market, as well as costs of matching and clearing orders. The second one is Inventory holding cost, for market maker, which is generated from imbalances order flow. It is known that order flow is uncertain for market makers. Therefore, they have to deal with this uncertainty

when managing their inventory while setting their prices. The third one is adverse selection cost, which shows up as a result of information asymmetry between informed trader, who holds private information, and the market maker, who holds public information or uninformed trader.

In the same context, Harris (2002) indicates that the bid-ask spread components are transaction cost and adverse selection cost.

The first one is transaction cost which compensates dealers for their normal costs of doing business. This component also funds any monopoly profits that the dealer may make and any risk premium that dealers may require for bearing inventory risk. Transaction cost, transitory spread component or called market frictions, includes all trading costs which are explicit costs, implicit costs, and missed trade opportunity costs. Explicit transaction costs are all costs that can be identified easily by a cost accountant. These costs include commissions paid to brokers, fees paid to exchanges, taxes paid to government, and any allocated resources to the trading process like costs of setting up staffing, and running a buy side trading desk. Implicit transaction costs are the costs of trading that arise because traders generally have an impact upon prices. For example, bid-ask spread when buying at asking prices and selling at biding prices. Missed trade opportunity costs arise when traders fail to fill their orders or when they fail to fill their orders in a timely manner. Similarly, Sarr and Lybek (2002a) discriminate between explicit transaction costs, which relate to expenses such as order processing costs and taxes associated with trades, and implicit transaction costs, execution costs. Because bid-ask spreads may capture nearly all of these costs, they are the most commonly used measure of transaction (execution) costs. In dealer markets, the bid-ask spreads may reflect order-processing costs, asymmetric Information costs, inventory-carrying costs, and oligopolistic market structure costs. In the case of reduction in the number of market participants due to high transaction costs, breadth and resiliency will be affected. Since breadth implies having numerous participants, high transactions costs may lead to thin markets. Similarly, since large transactions costs may deter trades, they reduce resiliency by preventing orders from flowing to correct order imbalances that tend to move prices away from their fundamental level. Consequently, the elasticity of orders' flow is also likely to result in a market with substantial price discontinuities.

The second one is the adverse selection cost which compensates dealers for the losses that they carry when trading with well-informed traders. This component allows dealers to earn from uninformed traders what they lose to informed traders. When some traders are better informed than other traders, then they are asymmetrically informed. The two components together, transaction cost and adverse selection cost, are the total spread. Unless, if all traders knew instrument values with complete certainty, which is mostly impossible, the transaction cost component would cover the entire spread.

The factors determining spreads are not mutually exclusive. All may be present at the same time. The three factors related to uncertainty (inventory risk), option effect, and asymmetric information may be distinguished as follows:

- The inventory effect arises because of possible adverse public information after the trade in which inventory is acquired. The expected value of such information is zero, but uncertainty imposes inventory risk for which suppliers of immediacy must be compensated.
- The option effect arises because of adverse public information before the trade and the inability to adjust the quote. The option effect really results from an inability to monitor and immediately change resting quotes.
- The adverse selection effect arises because of the presence of private information before the trade, which is revealed sometime after the trade. The information effect arises because some traders have superior information.

2.5 Information Asymmetry and Liquidity

2.5.1 Liquidity

Easley and O'hara (2004,p. 1) identifies liquid market as "buyers and sellers can trade into and out of positions quickly and without having large price effects". In addition, she indicated to the microstructure definition of an asset liquidity which is the availability of large number of ready buyers and sellers. Another prospective is introduced by Harris (2002) and Wuyts (2007) who consider the liquidity is the ability to trade large size or large numbers of shares quickly at low cost and without large price effects. Furthermore, Harris (2002) indicates that the market is liquid when traders can trade without significant adverse effect on price. In other words, markets with many standing limit orders and small bid/ask spreads are usually quite liquid.

Black (1971) considers an asset is liquid if it can be sold in a short time and at a price not too much below the selling price, if he/she took plenty of time to sell it. Furthermore, he points out that the market for a stock is liquid if the following conditions are available:

- An investor who wants to buy or sell small amounts can find bid and ask prices for the stock immediately.
- The spread, difference between the bid and ask price, is always small.
- An investor who is buying or selling a large amount of stock, in the absence of special information, can expect to do so over a long period of time at a price not very different, on average, from the current market price.
- An investor can buy or sell a large block of stock immediately, but at a premium or discount that depends on the size of the block

In other words, the liquid market is a continuous market and efficient one. The continuous market is liquid when almost any amount of stock can be bought or sold immediately. An efficient market is liquid when small amounts of stock can always be bought or sold very near the current market price, and large amounts can be bought or sold over long periods of time at prices that, on an average, are very near the current market price. It means that the ability to handle large amounts of stock in short periods of time without changing the price of the stock is not a characteristic of liquid market (Black, 1971).

Sarr and Lybek (2002a) distinguish between financial market's liquidity and the liquidity of financial institution. A financial market's liquidity depends on the substitutability among the various assets traded in a particular market, and how liquid each of these assets are. If there are different issuers, particularly in the corporate bond markets and equities markets, credit risk can prevent substitutability and result in significant segmentation of the market. Institutional liquidity refers to how easily financial institutions can engage in financial transactions with a view to quickly cover mismatches between their assets and liabilities, which may be measured by liquid asset ratios, etc. and to settle their obligations. The more liquid the assets in its portfolio are and the less liquid the liabilities are, the greater the flexibility in managing asset-liability mismatches and its ability to meet settlement obligations.

In the same context, many microstructure researchers define liquidity dimensions. Black (1971) explains that liquidity has many dimensions including depth, breadth, and resiliency. Depth is the amount of stock that can be traded at a given price. Breadth is the ability to trade across assets without affecting the price. Resiliency describes how quickly the price returns to the pre-trade price.

Harris (1990) distinguishes between four dimensions of liquidity. Note that, these dimensions may interact with each other and are not standing alone. Firstly, width is the bid-ask spread for a given number of shares, commissions, and fees to be paid per share. Secondly, depth is the number of shares that can be traded at given bid and asks prices. Thirdly, immediacy refers to how quickly trades of a given size can be done at a given cost. Fourthly, resiliency describes the return's speed to the former levels of price after changing due to large order initiated by uninformed traders.

Lee and Ready (1991) indicate that there are two dimensions of liquidity. The spread which is the price dimension and the depth which is the quantity dimension of liquidity.

Furthermore, Sarr and Lybek (2002a) consider five dimensions of liquidity. The first dimension is tightness which refers to narrow bid-ask spread resulting in low transaction costs. The second one is the immediacy which represents the speed with which orders can be processed and, in this context also, settled, and thus reflects, among other things, the efficiency of the trading, clearing and settlement systems. The third one is the depth which refers to the existence of abundant orders below and above the price. The forth one is the breadth which means that orders are both numerous and large in volume with minimal impact on price. The Fifth one is resiliency which is a characteristic of markets in which new orders flow quickly to correct order imbalances, which tend to move prices away from. These terms reflect different dimensions of the extent to which an asset quickly and without significant costs can be transformed into legal tender.

2.5.2 Liquidity Measures

Sarr and Lybek (2002b) classify liquidity measures into four categories. Firstly, transaction cost measures that capture costs of trading financial assets and trading frictions in the secondary markets. Secondly, volume-based measures distinguish liquid markets by the volume of transactions compared to the price variability, primarily to measure breadth and depth. Thirdly, equilibrium price-based

measures try to capture orderly movements towards equilibrium prices to mainly measure resiliency. Fourthly, market-impact measures that attempt to differentiate between price movements due the degree of liquidity from other factors, such as general market conditions or arrival of new information to measure both elements of resiliency and speed of price discovery.

Amihud et al. (2005) classify liquidity measures into high-frequency and low-frequency measures. High-frequency measures are those relying on long term data such as annual return and annual trading volume data. In contrast, low-frequency data applies short term data such as daily return and daily trading volume data.
In another classification, liquidity measures are classified into one-dimension and multi-dimensions. take only one variable into account, whereas the multi-dimensional liquidity measures capture different variables within one measure. One-dimensional liquidity measures can be classified into transaction cost measure, trading activity measures, and volatility measures. Firstly, transaction cost measures capture the tightness of stock liquidity. Secondly, trading activity measures capture the depth and breadth. Thirdly, volatility measures, price-based, capture resiliency and immediacy (Daya, 2014).

Transaction cost decomposes into inventory, adverse selection, and order processing costs. The transaction cost is a decreasing function of market liquidity. For instance, high transaction costs may reduce the number of market participants and hence reduce stock market liquidity. The transaction costs can be measured by many of bid-ask spread versions. The main measures of bid-ask spread are the current (quote) bid-ask spread, effective bid-ask spread, and relative bid-ask spread. Current bid-ask spread which is defined as the quoted spread in effect when a trade is executed and It can be calculated as

$$\mathrm{Spread}_t = P_t^A - P_t^B, \qquad (1)$$

where P_t^A refers to best ask price at time t and P_t^B refers to the best bid price at time t. The higher the Spread_t, the higher the transaction cost, and the lower the stock market liquidity (Daya, 2014).

Trading activity measures reflect the depth and breadth of stock market liquidity. The trading activity is an increasing function of market liquidity. In other

words, high trading volumes or high trading turnover rate implies high market liquidity. Volatility-based measures may capture the fluctuation of stock market liquidity. Therefore, these measures are considered as liquidity risk measures. For instance, high stock price or return volatility implies high risk (Daya, 2014).

2.5.3 Liquidity and Stock markets

The debate whether liquidity is good or bad for stock exchange markets has supporters for the both sides. Both arguments are discussed by Easley and O'hara (2004).

The negative view of liquidity considers the ability to buy and sell assets seamlessly leads to focusing on short-term by the capital markets and liable to instability. Keynes (1936), Tobin (1978), and Summers and Summers (1989) are some of this argument's fans. While the positive one proves that liquidity enhances market stability because investors are more willing to hold securities that can be easily bought or sold. In other words, more liquidity leads to more stability because the price will be little affected by trades in a liquid market. Easley and O'hara (2004), Amihud (2002), and Pástor and Stambaugh (2003) are some of this opinion supporters. The researcher believes that the second argument is the correct one for two reasons. Firstly, most of investors will not enter the market unless they think that getting out is easy and liquidity facilitates the getting out process. Secondly, liquidity existence helps traders to maximize their wealth and make profits quickly.

In addition, high quality public disclosures (e.g. annual reports and press releases) reduce information asymmetry and increase stock market liquidity. Studies investigate the relationship between stock market liquidity and bid-ask spread as proxy of information asymmetry. These studies found the negative relationship between information asymmetry or bid-ask spread and the disclosure policy (Lakhal, 2008), (Leuz, 2003), (Leuz and Verrecchia, 2000), (Healy et al., 1999), (Bartov and Bodnar, 1996), and (Welker, 1995). Wang (1993) illustrates that asymmetric information has two effects on asset prices. Firstly, uninformed investors require a risk premium to compensate them for the adverse selection problem that arises from trading with informed traders. Secondly, informed traders also make prices more informative, thereby reducing the risk for the uninformed and lowering the risk premium.

Easley and O'hara (2004) demonstrate that private information increases the risk to uninformed traders and induces a form of systematic risk. As a result, uninformed traders require higher return for two reasons. The first is compensating them for bearing the risk which is generated from holding stocks with great private information. The second one is that informed investors are better able to shift their portfolio weights to incorporate new information. studies like Amihud and Mendelson (1986), Amihud (2002), and Pástor and Stambaugh (2003) argue that investors need higher returns to hold illiquid assets, suggesting that illiquidity is a risk that requires higher compensation. On the contrary, liquidity is considered as risk-reducing, and investors will be more willing to hold assets that have greater liquidity.

Market liquidity enhancement is one of the most important characteristics of stable markets. The microstructure literature provides some simple prescriptions like disclosure rules, greater transparency, insider trading laws, and lower transactions costs which contribute to make markets more attractive to investors. Otherwise, investors become uncertain and want to exit the market. Thus, uncertainty can beget illiquidity, and with it market instability (Easley and O'hara, 2004).

2.6 Information Asymmetry and Trader Types

The investors in the economy can be either informed or uninformed. The informed investors know the future dividend growth rate, while the uninformed investors do not. All investors observe current dividend payments and stock prices. Uninformed investors rationally extract information about the state of the economy from prices as well as dividends. In equilibrium, investors with access to different information will anticipate different expected returns from investing in stocks (Wang, 1993).

Imperfect information of some investors can cause stock prices to be more volatile than in the case where all investors are perfectly informed. Two factors contribute to price volatility. Firstly, the changing expectations about the future cash flows and noise trading. When investors are less informed about the true growth rate of dividends, their expectation about future cash flows becomes less variable. This has the effect of reducing price volatility. On the other hand, there is more uncertainty in the stock's future cash flows (Wang, 1993).

The information asymmetry among investors can cause price volatility to increase. Under information asymmetry, more-informed investors trade on superior

information against less informed investors. Hence, less-informed investors face an adverse selection problem when they respond to noise trading. They demand additional price elasticity to supply shocks and price volatility (Wang, 1993).

Easley and O'hara (2004) and O'Hara (2003) argue that noise traders (uninformed or less traders) lose to informed traders because of asymmetric information. Therefore, noise traders demand compensation to hold assets in which they face a greater informational disadvantage. In the same context, Bagehot (1971) differentiate between liquidity traders, uninformed or noise traders, and informed traders. Liquidity traders do not have private information. They trade for reasons like rebalancing their portfolio or having information, as they believe. In contrast, Informed traders have private information e.g. about the value of the asset, and want to use this information when trading. The spread reflects a balancing by the market maker between the losses of trading with informed traders and the gains of trading with uninformed traders.

Informed traders act as liquidity providers to the market because they face lower risks in enhancing it. They trade to capture the value of their private information. They change their use of market orders and limit ones to optimally capitalize on the informational advantage. For this reason, they start more likely to employ market orders but over time shift to trading mostly using limit orders. When the value of information is high, informed traders tend to use more market orders to realize trading profit before prices adjust. When the value of their information is low, they make limit orders to the market. As a result, informed traders' strategies stems from the changing value of their private information associated with the dynamic adjustment of prices. This reflects the ability of informed traders to know better true value of the asset and getting profit from the bid–ask spread via limit orders submission. This behavior results in the informed providing liquidity to the market. While liquidity traders, who need to buy or sell a large number of shares, tend to use more limit orders early on, but as the end of the trading period approaches they switch to market orders to meet their targets. Both trader types use limit orders and market orders, but informed traders use more limit orders than do liquidity traders. In conclusion, liquidity provision is enhanced when risk is perceived to be lower (Bloomfield et al., 2005).

In the same context, Stoll (2001) compares between liquidity traders and informed traders. Liquidity traders trade to smooth consumption or to adjust the

risk-return profiles of their portfolios. They buy stocks if they have extra cash or have become more risk tolerant, and they sell stocks if they need cash or have become less risk tolerant. In addition, they tend to trade portfolios. While informed traders trade on private information about an asset's value. They tend to trade specific asset which they have private information. In conclusion, Liquidity traders lose if they trade with informed traders.

In another context, Harris (2002) compares between informed and uninformed traders through their estimation of fundamental value of an asset. Since asset estimation's value agreement is mostly impossible among traders, they estimate them. The fundamental value, intrinsic value or true value, of an instrument is the value that all traders would agree upon if they knew all available information about the instrument and if they could properly analyze this information. An instrument is undervalued when its market price is below its fundamental value. It is overvalued when its price is above fundamental value. Informed traders can form reliable opinions about whether instruments are fundamentally undervalued or overvalued from insightful analyses of publicly available information or from simple analyses of information that is not widely known. They speculate on their information by buying undervalued instruments and selling overvalued instruments. Informed traders are therefore profit-motivated traders. In contrast, uninformed traders do not know whether instruments are fundamentally undervalued or overvalued. Either, they cannot form reliable opinions about values, or they choose not to.

2.7 Information Quality and Market Efficiency

Fama (1970,p. 383) points out that "a market in which prices always fully reflect available information is called efficient". Harris (2002) implies that efficient markets produce prices that very informative.

Black (1971) indicate four characteristics of Efficient Markets. These characteristics are low cost, continuous trading, fairness, and random price movements. Firstly, the total cost of trading, including both explicit and implicit costs, is should be low. It should be possible for an investor who knows what he wants to buy or sell to have direct access to the market, without going through a sales man, floor broker, or specialist. Secondly, the market should be characterized by continuity. In other words, continuous trading means that it is possible for any investor who

wants to buy or sell immediately to do so. In addition, the bid and asked prices should be very close together. The execution of a small purchase or sale should bot change these prices very much. The bid and asked prices for large purchases and sales may be far apart, however, and execution of such orders may cause all bid and asked prices to shift substantially. Thirdly, all potential buyers and sellers should have easy access to the market. In one word, the market should be Fairness. It means that, the market should be structured so that large investors do not object to dealing with many small investors. Furthermore, the trading cost to the large investor should be the same, whether he is trading with one large investor or many small investors. The extra cost of handling a small order should be borne by the small investor. Orders should be executed at prices that would have occurred if all potential buyers and sellers were continually in direct contact with the market. Fourthly, price movements should be random. When new information changes the value of the stock, its price should move in one large jump rather than a series of small steps. A large price movement should be followed by a further movement in the same direction as often as it is followed by a movement in opposite direction. A series of movements in one direction should be followed by a movement in the opposite direction as often as it is followed by another movement in the same direction.

Akins et al. (2011) use accruals quality and earnings smoothness measures to empirically investigate the pricing of information asymmetry and information quality. They find the pricing of information quality decreases with competition. A greater number of informed traders cause traders to compete more aggressively. As a result, this reveals their private information and incorporates it into prices more quickly. In other words, private information's utilization, by informed investors, is lower when there is more competition. It means that competition reduces the pricing of information asymmetry. Consequently, investors demand a lower return for information asymmetry, which makes the pricing of information asymmetry smaller. As known, information asymmetry increases the risk to the uninformed investors, who cannot adjust their portfolios to account for private information. In equilibrium, information asymmetry is priced to reflect the information risk to uninformed investors. Nevertheless, competition makes the stock less risky for uninformed investors by reducing the pricing of information asymmetry.

Daya (2014) indicates that the proxies of market liquidity are considered as the bases of market quality proxies. Madhavan (2002) consider spreads, trading activity, and volatility as metrics of market quality which are the same metrics of market liquidity. Furthermore, most studies agree on the notion that market quality has the same dimensions of market liquidity. For instance, improvements in market quality would include declining transaction costs, increase in trading activity, and reduce trading volatility reducing pricing errors, speeding up the process in which prices impound private and public information, reducing price asymmetry, and stock market prices follow a random walk (Daya, 2014).

2.8 Cost of Capital

"Cost of capital is the expected rate of return that the market participants require in order to attract funds to a particular investment" (Pratt and Grabowski, 2008,p. 3). Since the cost of anything can be defined as the price one must pay to get it, the cost of capital is the return a company must promise in order to get capital from the market, either debt or equity. A company does not set its own cost of capital. It must go into the market to discover it. Yet meeting this cost is the financial market's one basic yardstick for determining whether a company's performance is adequate. In economic terms, the cost of capital for a particular investment is an opportunity cost. In this sense, it means that an investor will not invest in a particular asset if there is more attractive substitute. The term capital in this context means the components of an entity's capital structure (Pratt and Grabowski, 2008). The primary components of a capital structure include:

- Debt capital.
- Preferred equity (stock or partnership interests with preference features, such as seniority in receipt of dividends or liquidation proceeds).
- Common equity (stock or partnership interests at the lowest or residual level of the capital structure).

‘‘The true cost of capital depends on the use to which the capital is put’’ (Pratt and Grabowski, 2008,p. 5). It is an error to evaluate a potential investment on the basis of a company's overall cost of capital. ‘‘Each project should in principle be evaluated at its own opportunity cost of capital.’’ When a company uses a given cost of capital to evaluate a commitment of capital to an investment or project, it often

refers to that cost of capital as the hurdle rate. The hurdle rate is the minimum expected rate of return that the company would be willing to accept to justify making the investment.

The cost of capital represents two elements of investors' expectations. Firstly, the risk-free rate, which includes the ''real'' rate of return or the amount (excluding inflation or the expected depreciation in purchasing power while the money is in use) that investors expect to obtain in exchange for letting someone else use their money on a risk-free basis. Secondly, risk means the uncertainty as to when and how much cash flow or other economic income will be received (Pratt and Grabowski, 2008).

The essence of the cost of capital is that it is the percentage return that equates expected economic income with present value. The expected rate of return in this context is called a discount rate. By discount rate, the financial community means an annually compounded rate at which each increment of expected economic income (e.g., net cash flow, net income, or some other measure of economic benefits) is discounted back to its present value. A discount rate reflects both time value of money and risk and therefore represents the cost of capital. The sum of the discounted present values of each future period's incremental cash flow or other measure of return equals the present value of the investment, reflecting the expected amounts of return over the life of the investment. The economic income referenced here represents total expected benefits. In other words, this economic income includes increments of cash flow realized by the investor while holding the investment as well as proceeds to the investor upon liquidation of the investment. The rate at which these expected future total returns are reduced to present value is the discount rate, which is the cost of capital (required rate of return) for a particular investment discount rate equates to cost of capital. It is a rate applied to all expected incremental returns to convert the expected return stream to a present value (Pratt and Grabowski, 2008). As Pratt and Grabowski (2008) indicates that cost of capital has several key characteristics:

- It is market driven. It is the expected rate of return that the market requires to commit capital to an investment.
- It is a function of the investment, not a particular investor; to make the discount rate a function of the particular investor would imply changing the

standard of value to what is commonly termed investment value rather than fair market value.

- It is forward looking, based on expected returns. Past returns are, at best, to provide guidance as to what to expect in the future.
- The base against which cost of capital is measured is market value, not book value.
- It is usually measured in nominal terms, that is, including expected inflation.
- It is the link, called a discount rate, that equates expected future returns for the life of the investment with the present value of the investment at a given date.

2.9 Cost of Equity Capital

The cost of equity or ownership capital (e.g., the expected return to a stock or partnership investor) is the rate of return that investors require on an equity investment in a firm. On an equity investment, the return on investment that the investor will (or has the opportunity to) realize usually has two components (Pratt and Grabowski, 2008):

1. Distributions during the holding period (e.g., dividends or withdrawals)
2. The capital gain or loss in the value of the investment (For an active public security, it is considered part of the return whether the investor chooses to realize it or not, because the investor has that choice at any time.)

Obviously, these expected returns on equities are much less certain (or more risky) than the interest and maturity payments on U.S. government obligations. This difference in risk is well documented by much higher standard deviations (year-to-year volatility) in returns on the stock market compared with the standard deviation of year-to-year returns on U.S. government obligations. To accept this greater risk, investors demand higher expected returns for investing in equities than for investing in U.S. government obligations. This differential in expected return on the broad stock market over U.S. government obligations (sometimes referred to as the excess return, but not to be confused with the excess earnings method) is called the equity risk premium (ERP) or market risk premium (Pratt and Grabowski, 2008).

2.10 The Palestine Exchange (PEX)

The Palestine Exchange (PEX) was established in 1995 to promote investment in Palestine as a private shareholding company. It transformed into a public shareholding company in February 2010 responding to principles of transparency and good governance. The PEX was fully automated upon establishment- the first fully-automated stock exchange in the Arab world and the only Arab exchange that is publicly traded and fully owned by the private sector. The PEX operates under the supervision of the Palestinian Capital Market Authority. There are 49 listed companies on PEX as of 16/11/2014 with market capitalization of about $ 3.088 billion across five main economic sectors; banking and financial services, insurance, investments, industry, and services. Most of the listed companies are profitable and trade in Jordanian Dinar, while others trade in US Dollars (PEX, 2014).

2.10.1 Trading

The first trading session was held at the PEX on 18/02/1997. Since its launching, the PEX depends on electronic trading and clearing, depository, and settlement systems. In this sense, the PEX is considered the pioneer securities market in the region that adopted the automation of all its processes related to trading, and clearing, depository and settlement. At present, the PEX is adopting the Horizon system supplied by OMX company as a trading system. In addition, it is adopting surveillance system called "Smarts" system (PEX, 2014).

Characteristics of Electronic Trading System

Orders are being executed according to the following criteria (PEX, 2014):

- Price
- Time

- Remote trading is being conducted through brokerage firms and their branches.
- Trading is being conducted in more than one currency. Currently, trading is executed by the Jordanian dinar (JD) and United Stated Dollar (USD).
- The system saves data electronically, which enables to retrieving and looking into all movements that were carried out on that date.
- Trading is directly linked, tightly coupled, with the Clearing, Depository and Settlement Center (CDS) System. All trades are reflected directly on the

investors' accounts, verify that their shares balances are available before any sell order is entered and to make sure that ownership ratio is not exceeded.

Trading Days and Times

- Trading is carried out daily from Sunday till Thursday every week.
- Trading is not carried out on: weekends (Friday and Saturday), official holidays.
- Scheduled trading session is to be cancelled if the ratio of member firms technically unable to connect and to trade is (35%) or more of the total number of member firms.
- Trading session starts at 09:45 and finishes at 13:30.

Trading Rules

Price limits, up and down, are (7.5%) for shares listed in the first market, and (5%) for shares listed in the second market and bonds (PEX, 2014).

Trading Unit:

The minimum limit of the number of shares and bonds allowed for trading (buy/sell) at PEX is one (1) share for all traded shares and bonds (PEX, 2014).

Trading Surveillance

Trading Surveillance is based on regulations related to securities which are applicable in Palestine; these are: Securities Law No. (12) of the year 2004, Companies Law No. (12) of the year 1964, Securities Trading Regulation, rules, instructions issued in their accordance, and instructions issued by the Capital Market Authority. The SMARTS System is adopted to carry out the functions of trading surveillance. The Trading Surveillance System monitors the trading session instantly to detect any unusual behaviors of prices or trading volumes by making comparisons between the electronic information of the trading session and the standards adopted by the system so that an alert triggered when any standard is violated. Any violation is subject to the adopted charter of penalties and fines (PEX, 2014).

2.10.2 Al Quds Index

In July 1997, PEX adopted a record for measuring stock prices levels and determining the general direction of these prices known as "Al Quds Index". The closing prices of 7/7/1997 were adopted to be the basis to set the value of the base for Al Quds Index of 100 points (PEX, 2014).

Al Quds Index Companies

The (PEX) adjusted list of companies to be included in its Al-QUDS index for the year 2014. PEX raised the number of companies included from 12 to 15 to reflect the increase in the number of listed companies. Al-Quds sample for the year 2014 is as follows (PEX, 2014):

1. Palestine Development & Investment - PADICO (Investment)
2. Palestine Industrial Investment - PIIC (Investment)
3. Palestine Real Estate Investment - PRICO (Investment)
4. Arab Islamic Bank - AIB (Banking & Financial Services)
5. Bank of Palestine – BOP(Banking & Financial Services)
6. Palestine Islamic Bank - ISBK (Banking & Financial Services)
7. The National Bank – TNB (Banking & Financial Services)
8. Al-Quds Bank – QUDS (Banking & Financial Services)
9. National Insurance – NIC (Insurance)
10. Palestine Telecommunications - PALTEL (Services)
11. Palestine Electric - PEC (Services)
12. Wataniya Palestine Mobile Telecommunications - WATANIYA (Services)
13. Birzeit Pharmaceuticals - BPC (Industry)
14. Jerusalem Cigarettes - JCC (Industry)
15. Jerusalem Pharmaceuticals - JPH (Industry)

At the end of every year, the companies that are included in Al Quds Index are assessed since the sample is modified in accordance with the trading statistics of that year. The following criteria are adopted (PEX, 2014):

1) Trading volume.
2) Trading Value.
3) Number of trades.
4) Number of trading days.
5) Market Value.
6) Average of share Turnover.

2.11 Development of Palestine Exchange Activity

The PEX has developed from 1997 to 2014. **Table 1** shows the total yearly activity figures of 8 years period from 1997 to 2014 in PEX. The first trading session was held at the PEX on 18/02/1997 with 19 listed companies while the number of listed companies in 2014 is 48. The number of trading sessions increased from 66 in 1997 to 245 in 2014. Also, the trading volume increased from 10,000,526 shares in 1997 to 181,545,154 shares in 2014 while the highest figure was in 2005 with 369,567,295 shares. The Trading value raised from 25,181,030 in 1997 to 353,917,125$ in 2014 while it peaked the greatest number in 2005 with 2,096,178,223$. The numbers of transactions were 1,957 and 41,257 in 1997 and 2014 respectively, during that time the highest record was in 2005 with 166,807. The daily average turnover volume was 151,523 and 741,000 in 1997 and 2014 respectively while it peaked 1,502,306 in 2005. The daily average turnover transactions was 30 in 1997 and 168 in 2014, once again, and the 2005 was highest with 678. The market capitalization increased from 510,036,142$ (in 1997) to 3,187,259,624$ (in 2014). Al-Quds Index was 139.13 in 1997 and 511.77 in 2014 while it was 1128.6 in 2005. The Growth of Al-Quds index was 39.13%, 306.61%, and -5.48% in 1997, 2005, and 2014 respectively.

Table 1: Total yearly activity of PEX from 1997 to 2014

Year	No of Listed Companies In 31 Dec.	No. of Trading sessions	Volume	Value (US$)	No. of Transactions	Daily Average Turnover Volume	Daily Average Turnover Value (US$)	Daily Average Turnover Transactions	Market Capitalization (US$)	Al-Quds Index	Al-Quds Index Growth (%)
1997	19	66	10,000,526	25,181,030	1,957	151,523	381,531	30	510,036,142	139.13	39.13%
1998	20	100	16,746,845	68,531,587	7,639	167,468	685,316	76	600,496,739	154.98	11.39%
1999	22	146	68,788,626	150,092,262	10,625	471,155	1,028,029	73	735,936,934	236.76	52.77%
2000	25	211	93,190,283	188,964,084	20,143	441,660	895,564	95	768,190,283	207.62	-12.31%
2001	25	161	33,424,798	74,496,050	8,205	207,607	462,708	51	727,270,525	195	-6.08%
2002	28	100	18,663,494	45,081,693	4,579	186,634	450,817	46	581,826,876	151.16	-22.48%
2003	27	223	40,304,432	58,280,758	10,552	180,737	261,349	47	655,463,931	179.81	18.95%
2004	27	244	103,642,845	200,556,709	27,296	424,766	821,954	112	1,096,525,380	277.56	54.36%
2005	28	246	369,567,295	2,096,178,223	166,807	1,502,306	8,521,050	678	4,457,227,305	1128.6	306.61%
2006	33	237	222,689,351	1,067,367,951	150,592	935,670	4,484,739	633	2,728,811,088	605	-46.39%
2007	35	247	299,422,814	813,469,090	157,300	1,207,350	3,280,117	316	2,474,679,018	527.26	-12.85%
2008	37	242	339,168,807	1,185,204,211	152,319	1,390,036	4,857,394	624	2,123,057,098	441.66	-16.23%
2009	39	246	238,877,373	500,393,398	88,838	971,046	2,034,120	361	2,375,366,531	493	11.62%
2010	40	249	230,516,370	451,208,529	82,625	925,768	1,812,082	331	2,449,901,545	489.6	-0.69%
2011	46	248	184,544,375	365,648,216	61,928	744,131	1,474,388	250	2,782,469,900	476.93	-2.59%
2012	48	249	147,304,208	273,440,441	41,442	591,583	1,098,154	166	2,859,140,375	477.59	0.14%
2013	49	241	202,965,939	340,774,269	44,425	842,182	1,414,001	184	3,247,478,385	541.45	13.37%
2014	48	245	181,545,154	353,917,125	41,257	741,000	1,444,560	168	3,187,259,624	511.77	-5.48%

Chapter Three: Literature Review

3.1 Introduction

3.2 Information Asymmetry and Cost of Equity Capital Studies

3.3 Related Studies

3.4 Previous Studies of Palestine Exchange Market

3.5 Comments on literature Review and Research Gap

Chapter Three

Literature Review

3.1 Introduction

The literature review regarding information asymmetry is presented in this chapter in three sections. The first one shows Twelve studies that investigate the relation between information asymmetry and cost of equity capital. The studies begin with the latest one from Nuryaman (2014) until Diamond and Verrecchia (1991).

The second section presents ten studies from Naranjo (2013) to Amihud and Mendelson (1986) that explore the association between information asymmetry and earnings. One of Studies, Callahan et al. (1997), presents findings of twenty six studies. The third section illustrates six studies from Alkhatib and Harasheh (2014) to Awad and Daraghma (2009) that discuss related issues on PEX.

3.2 Information Asymmetry and Cost of Equity Capital Studies

Nuryaman (2014) aims to provide empirical evidence on the influence of asymmetric information on the cost of equity capital with earnings management as intervening variable. Population and sample of the study are public company manufacturing sector listed in Indonesia Stock Exchange during the year of 2010. Hypothesis testing is conducted by using multiple regression analysis method. He finds that information asymmetry has positive influence on the cost of equity capital, and earnings management. Besides that, he does not prove that the role of earnings management as intervening variable on relation between asymmetric information and the cost of equity capital. Asymmetric information could affect investors' trust through the estimation of risk by investors. If a stock has high asymmetric information, then investors would assess that the investment has a high risk, due to the costs of equity capital become high and vice versa. Furthermore, announcement of earnings in public reduce the transaction costs. High cost of the transaction process reduces the market liquidity. Low market liquidity and high asymmetric information decline the stock demand, stock prices, and increase cost of equity capital. The reduction of asymmetric information decreases transaction costs, in which transaction costs are represented by the bid-ask spreads.

He et al. (2013) examine the relation between information asymmetry and the cost of equity capital of firms listed on the Australian Securities Exchange. They

calculate the ex-ante cost of equity capital for constituent companies of the S&P/ASX 200 Index. The bid–ask spread of the companies is decomposed to find the adverse selection component, which is used to measure the information asymmetry of the company. They control factors generally known to influence the required return on equity, such as sector, beta, firm size, book-to-market, analyst coverage and analyst earnings forecast dispersion. This study finds a significant and positive relation between information asymmetry and ex ante investor's required rate of return. They also find that earnings forecast dispersion increases ex ante cost of equity capital, while analyst coverage tends to decrease the return required by investors. This suggests that information asymmetry increases a firms' cost of capital, and may be explained by the information disadvantage of less informed traders and they will hold assets where their disadvantage is less. This drives down securities' prices which have high degrees of information asymmetry, thereby increasing their cost of capital. It is also found that earnings forecast dispersion increases ex ante cost of equity capital, while analyst coverage tends to decrease the return required by investors. This is consistent with the explanation that greater earnings forecast dispersion is a proxy for greater information uncertainty. As a result, investors demand a higher cost of equity capital. In Addition, greater information disclosure, due to higher analyst coverage, contributes to stock market liquidity, which, via reduced transaction costs, reduces cost of equity capital.

Lambert et al. (2012) examine the relation between information differences across investors (i.e., in-formation asymmetry) and the cost of capital in perfect and imperfect competition settings. They consider a model of trade that derives from (Kyle, 1989); in this model, large investors can have an impact on price and thus take this effect into account in determining their demands. In our model, the degree to which competition is imperfect (i.e., markets are illiquid) is an endogenous feature and influences the effect of information asymmetry on the cost of capital. They demonstrate that in imperfect markets, they state that the degree of information asymmetry influences the amount of market illiquidity, which raises the cost of capital. In addition, the degree of market illiquidity influences the amount of information that is reflected in prices. This reduces investors' average precision and raises the cost of capital. In contrast, when markets are perfectly competitive, Information asymmetry does not affect the cost of capital. On the other hand, the

average precision of investor's information is relevant. In conclusion, they present two findings. First, in perfect competition settings, information asymmetry does not give rise to a separate (or additional) risk factor, and there is no compensation for being less informed, as claimed in (Easley and O'hara, 2004). Second, it is important to distinguish between information asymmetry and information precision, as well as to recognize that the effect of information asymmetry on the cost of capital depends on the nature of capital market competition.

Armstrong et al. (2011) investigate the relationship between the information asymmetry and the cost of capital (COC) when equity markets are imperfectly and perfectly competitive. The sample is firms traded on the NYSE, AMEX, and NASDAQ from June 1976 to June 2006. The hypotheses about cost of capital are tested by using future excess returns as a proxy for cost of capital. They use the number of shareholders as primary measure of market competition. They use five measures of information asymmetry. Two are market-based, which are the adverse selection component of the bid-ask spread and the bid-ask spread itself, and two are accounting based, which are annual ratio of research and development and scaled accruals quality, and finally the analyst coverage. They find positive relation when equity markets are imperfectly competitive and no relation when equity markets are perfectly competitive. In other words, under perfect competition, market risk completely explains the cost of capital both when information asymmetry is low and when it is high, so there is no difference. Furthermore, they find that when the number of shareholders is low, firms with high information asymmetry earn significantly higher excess returns than do firms with low information asymmetry. In addition, they find that when the number of shareholders is high, there is no difference in returns for firms with high information asymmetry over firms with low information asymmetry. All these findings are illustrated in **table 2**.

Table 2: Competition and Information Asymmetry levels (Armstrong et al., 2011)

	Information Environment		
Market setting	Low Information Asymmetry	High Information Asymmetry	Predicted COC difference
Imperfect Competition	Low	High	Positive
Perfect Competition	Zero	Zero	None

Verdi (2005) evaluates empirical proxies used to assess whether increased information risk increases with the implied equity cost of capital (COC). From a sample of 11,890 firm-year observations during 1983 to 2000, he aggregates 14 information risk indicators into three constructs, which are information asymmetry, uncertainty, and value relevance. Information Asymmetry aggregates indicators such as bid-ask spreads, share depth, firm age, number of analysts following the firm, trade volume, and share turnover. Uncertainty measures the average precision of information available about the firm. This measure is composed by indicators such as accruals quality, earnings predictability, earnings smoothness, firm volatility, and share turnover. He finds that, Uncertainty has a significant positive relation with COC. In addition, Information asymmetry has a significant negative relation with the implied equity cost of capital. In other words, the negative coefficient on Asymmetry is influenced by the negative effects of trade volume, share depth, and the number of analysts following the firm. Further, indicators that ex-ante load on the same construct produce ex-post conflicting estimates on COC. For example, firm age, trade volume, and bid-ask spread are all positively associated with Asymmetry, but in a multiple regression of COC on firm age, trade volume, and bid-ask spreads, trade volume has a significant negative relation with COC, bid-ask has a significant positive relation, and firm age has no relation. So, the relation between asymmetry and COC is sensitive to the use of alternative implied equity cost of capital measures. Finally, value relevance has no relation with COC. Overall, the results suggest that the choice of the proxy for information risk and the choice of COC measure can affect the inference from tests of whether increased information risk increases COC.

Botosan et al. (2004) examine the association between the quality of private information and cost of equity capital (after controlling for market beta, earnings growth, firm size, book-to-price and the quality of public information). A total of 3,718 firm-year observations from 142 firms in 1993 to 619 firms in 2000 from NYSE/AMEX market are included in this study. The hypotheses are tested using model of regression equation. It is found that the cost of equity capital is increasing in the precision of private information and cost of equity capital is decreasing in the precision of public information (after controlling for the precision of private information). They also document that the precision of private and public information are highly correlated, consistent with private and public information precision acting as complements. In addition, researchers document a negative association between

cost of equity capital and the precision of public information. They confirm that cost of equity capital estimates are increasing in market beta, expected long-term growth in earnings, and book-to-price and decreasing in firm size.

Easley and O'hara (2004) investigate the role of information in affecting a firm's cost of capital. By developing an asset-pricing model in which both public and private information affect asset returns, they show that differences in the composition of information between public and private information affect the cost of capital. They clarify that investors demanding a higher return to hold stocks with greater private information. This higher return arises because informed investors are better able to shift their portfolio to incorporate new information, and uninformed investors are thus disadvantaged. In equilibrium, the quantity and quality of information affect asset prices. In addition, they show that firms can influence their cost of capital by choosing features like accounting treatments, analyst coverage, and market microstructure. In other words, affecting the precision and quantity of information available to investors influence their cost of capital. Also, attracting an active analyst following the company can reduce a company's cost of capital, since analysts provide credible information about the company. Yet another way to influence its information structure is through the firm's choice of where to list their securities for trading. Because investors learn from prices, the microstructure of where a firm's securities trade can influence how well and how quickly new information is reflected in the stock price.

Leuz and Verrecchia (2004) examine the link between information quality and a firm's cost of capital, which is defined as the rate of return with which market participants discount the firm's future cash flows. They develop a simple model to analyze the relation between information quality and firms' cost of capital. They characterize asset prices in a market equilibrium framework with perfect competition for firm shares and risk-averse investors. Using this characterization, they show that, even in a CAPM world, an increase in the level of expected cash flows can result in a decrease in the firm's cost of capital. They show that higher information quality leads to a lower cost of capital via its effect on expected cash flows. Better information improves the coordination between firms and investors with respect to capital investment decisions, which investors price in equilibrium by discounting firms' expected cash flows at a higher rate. This effect survives the forces of diversification

in a capital market with perfect competition, even when information quality is uncorrelated across firms.

Easley et al. (2002) investigate the role of information-based trading in affecting asset returns. They derive a measure of the probability of information-based trading, and estimate this measure using data for individual NYSE-listed stocks for 1983 to 1998. They then incorporate their estimates into Fama and French 1992 asset-pricing framework. Their main result is that information does affect asset prices. A difference of 10 percentage points in the probability of information-based trading, between two stocks, leads to a difference in their expected returns of 2.5 percent per year. In other words, information does affect asset prices; stocks with higher probabilities of information-based trading have higher rates of return.

Botosan (1997) examines the association between disclosure level and the cost of equity capital by regressing firm-specific estimates of cost of equity capital on market beta, firm size and a self-constructed measure of disclosure level. The measure of disclosure level is based on the amount of voluntary disclosure provided in the 1990 annual reports of a sample of 122 manufacturing listed firms on NYSE. For firms that attract a low analyst following, the results indicate that greater disclosure is associated with a lower cost of equity capital. The magnitude of the effect is such that a one-unit difference in the disclosure measure is associated with a difference of approximately twenty-eight basis points in the cost of equity capital, after controlling for market beta and firm size. For firms with a high analyst following, the author found that no evidence of an association between disclosure level and cost of equity capital, perhaps because the disclosure measure is limited to the annual report and accordingly may not provide a powerful proxy for overall disclosure level when analysts play a significant role in the communication process.

Wang (1993) presents a dynamic asset-pricing model under asymmetric information. They employ the model to investigate the impact of asymmetric information on equilibrium asset prices, price variability, risk premia, serial correlation in returns, and optimal trading strategies. Investors have different information concerning the future growth rate of dividends. They rationally extract information from prices as well as dividends and maximize their expected utility. The model has a closed-form solution to the rational expectations equilibrium. They find that existence of uninformed investors increases the risk premium. Supply shocks can affect the risk premium only under asymmetric information. Information asymmetry

among investors can increase price volatility and negative autocorrelation in returns. Less-informed investors may rationally behave like price chasers. Furthermore, they find that information asymmetry among investors can cause price volatility to increase.

Diamond and Verrecchia (1991) study causes and consequences of a security's liquidity, especially the effect of future liquidity on the security's current price, equivalently the effect on its required expected rate of return, its cost of capital. They develop a model of trade in an illiquid market with limited risk bearing capacity of risk-averse market makers and examine the effects of private information on the incentives of market makers to provide risk bearing capacity. This paper shows that revealing public information to reduce information asymmetry can reduce a firm's cost of capital by attracting increased demand from large investors due to increased liquidity of its securities.

3.3 Related Studies

Naranjo (2013) investigate whether firm and country-level variation in the information environment affects private information acquisition. The sample is 88,777 quarterly earnings announcements of 39 countries between 2000 and 2010. The level of information asymmetry before and during earnings announcements is examined. Bid-ask spread is used as a proxy of information asymmetry. Four firm-level proxies of information environment are used. These proxies are the number of press releases, number of analysts, market value of equity, and environment, which is the average of the standardized values of disclosure, analysts, and market value. The results indicate that a stronger firm-level of information environment is negatively related to changes in pre-event information asymmetry and positively related to changes in event-period information asymmetry. Similarly, a stronger country-level information environment is associated with the firm-level information environment having a stronger effect on information asymmetry before the announcement and a weaker effect during the event.

Alzahrani and Gregoriou (2010) examine stock returns and trading activities around earnings announcements for listed companies in the Saudi stock market (SSM). They examine the levels of stock liquidity, trading activity, volatility, bid-ask spread, asymmetric information and investor trading behavior around earnings

announcements for all firms in the market for the period 2002-2009. They use a sample of 2,437 quarterly earnings announcements but consider 2,170 quarterly earnings announcements between Q1 in 2002 and Q2 in 2009. The sample, which is ninety-five listed firms, represents around 95% of the total market value. They use standard event study to capture the informativeness of earnings announcements through using many models and measures to estimate daily abnormal returns, trading activity measures, volatility and spread over time. They find that abnormal price and volume reactions around earnings announcements suggest that these announcements produce highly informative contents. They observe a rise in trading activities and volatility around earnings announcement with a higher information asymmetry which gradually reduces in the 20 days following the announcement date. They show evidence of an increased adverse selection cost around earnings announcement, which is then gradually reduced in the post-announcement period, indicating that earnings announcements reduce uncertainty in the market. They also find that large investors are more sophisticated and show higher informed trading before earnings announcements whereas smaller investors show stronger reaction to news. Moreover, small investors show a buying pattern which is consistent with times-series based earnings surprise. They are net-buyers for good news and net-sellers for bad news portfolios.

Vincent (2010) examine the theory that suggests that earnings announcements can either increase or decrease the level of information asymmetry between investors. So, he tests the effect of earnings announcements on the relative ability of small and large investors to trade advantageously. The sample includes all ordinary equity securities for domestic that are listed on the NYSE for the years 1994 to 2007. The information asymmetry between large and small investors is measured (a proxy for informed and uninformed investors) by examining how well those investors' actual trades predict short-term price movement. It is found that large traders' returns increase following earnings announcements at the expense of small traders, indicating an increase in information asymmetry following earnings disclosures, at least in the short term. It is also found that several proxies for the availability of private information are associated with the advantage of large traders following announcements.

Bhat and Jayaraman (2009) examine changes in information asymmetry after earnings announcements during the recent financial crisis. The study sample covers banks which comprises of 21,380 firm-quarter observations for 10,690 earnings announcements pertaining to 512 unique bank holding companies between 2002 and 2008. In addition, non-bank sample comprises of all firms that do not belong to an industry comprises of 119,102 firm-quarter observations for 59,551 earnings announcements for 3,626 unique firms over the same period. Using bid-ask spreads to measure information asymmetry, they compare changes in spreads after earnings announcements during the crisis period. They find that spreads increase after earnings announcements for all firms during 2007 and that these increases are larger than during the non-crisis period. It is also found that the increases are pronounced for banks compared to industrial firms. In contrast to the results of 2007, spreads decrease significantly after bank earnings announcements during 2008 while those for industrial firms decrease only marginally. Consistent with the political cost hypothesis, decreases in spreads are driven by large banks who respond to the higher regulatory pressure in 2008 by recognizing losses and increasing loan loss provisions. Finally, the results accentuate the role of disclosure by documenting that banks with good risk management disclosures experience lower increases in spreads in 2007 and higher decreases in 2008.

Lakhal (2008) studies market liquidity and stock prices components of information asymmetry around non-mandated earnings announcements by focusing on effective bid-ask spreads and trading volumes. Using event study methodology for 309 voluntary earnings announcements from 1998 to 2001, it is found that voluntary earnings disclosures exhibit significant stock market reactions around news releases. It is noticed also a significant decrease in effective spreads and an increase in trading volumes when good and bad news are released. Moreover, investors react more aggressively to bad news announcements suggesting that these news are more credible. Panel-data regression analyses were also used to examine both categories of voluntary earnings announcements: earnings forecasts and quarterly earnings announcements separately. They show that quarterly announcements enhance market liquidity by reducing bid-ask spreads and increasing trading volumes in the announcement window. However, earnings forecasts exacerbate information

asymmetry before and after the announcement date. This result suggests that earnings forecasts are subject to earning manipulation and less credible, then for the market.

Kanagaretnam et al. (2007) examine the relationship between the quality of corporate governance and information asymmetry in the equity market around quarterly earnings announcements. They consider 1,069 quarterly earnings announcements, which occurred when the exchanges are closed, for the June and September quarters of the year 2000 made by firms whose stock is listed on either the NYSE or the AMEX. The selected firms are not in the utility or finance sectors, and have December fiscal year-ends. They use the change in market liquidity (i.e., bid-ask spreads and depths) around the announcements as a proxy for information asymmetry. They use principal components analysis to identify three factors, board independence, board structure and board activity, that capture the information in the eight individual corporate governance variables. They then use ordinary least squares and two-stage least squares to estimate the relations between market liquidity changes and the following four explanatory variables: directors' and officers' percentage stock holdings, board independence, board structure, and board activity. Their results indicate that changes in bid-ask spreads at the time of earnings announcements are significantly negatively related to board independence, board activity, and the percentage stock holdings of directors and officers. They also find that depth changes are significantly positively related to board structure, board activity, and directors' and officers' percentage stock holdings. The results are consistent with the hypothesis that firms with higher levels of corporate governance have lower information asymmetry around quarterly earnings announcements.

How et al. (2005) use high frequency data to evaluate whether information asymmetry in the market is reduced as a result of corporate earnings and dividend announcements. Changes in the level of information asymmetry due to the announcements are proxied by the rate of change in trading volume, bid-ask spread, cumulative abnormal returns, and order imbalance. The study sample covers 109 listed firms on the Australian Stock Exchange (ASX) from 1998 to 1999. The results show support for an information asymmetry reduction due to the release of corporate earnings and dividend for all proxies of information asymmetry except for trading

volume. Cross-sectional analysis shows that firm size and forecast errors are the two main explanatory variables for the change in information asymmetry.

Richardson (2000) investigates the relation between information asymmetry and earnings management. The sample is all NYSE firms for the period of June 30, 1986 to June 30, 1993. The hypothesis is tested in both a general and a time-specific setting. Using a broad sample of firms, multivariate tests are used to test the relation between information asymmetry and earnings management. Bid-ask spreads and dispersion in analyst forecast are used as measures of information asymmetry. The managed accounting accrual is used twice as measure of earnings management, the first one is estimated through time-series approach and the second one is estimated through cross-sectional approach. It is found that there is statistically significant and positive relationship between the extent of income-increasing accruals manipulation and the level of information asymmetry.

Callahan et al. (1997) survey the research on the relation between accounting information and bid-ask spreads. Researchers address the literature of examining the bid-ask spreads in order to yield insight into how accounting information affects information asymmetry in the stock market. Research on bid-ask spreads suggests that the spread is comprised of three types of costs facing the dealer: order-processing costs, inventory holding costs and adverse selection costs. The adverse selection component of the spread reflects the degree of "information asymmetry risk" perceived by the dealer.

Table 3 illustrates number of empirical studies that examine how components of the bid-ask spread (order processing costs, inventory holding costs and adverse selection costs) vary across firms. These studies show firms with deeper (more liquid) markets end to have lower spreads. Specifically, quoted spreads are lower for larger, more actively-traded firms with multiple dealers. These findings suggest that order processing and inventory costs are lower for more actively followed and actively-traded firm. In addition, study of Chiang and Venkatesh (1988) which show that spreads are significantly higher for firms with greater insider and institutional ownership, after controlling for other factors. Brennan and Subrahmanyam (1995) show that the adverse selection component of the spread is lower for firms with greater analyst following, after controlling for other factors. The finding that wider

spreads are associated with greater insider and institutional ownership and lower analyst following is consistent with the hypothesis that the risk of trading with an informed investor is greater for these firms.

Table 3: Cross-Sectional Empirical Studies on the Determinants of Bid-Ask Spreads

Study	Findings
(Brennan and Subrahmanyam, 1995)	The estimated adverse selection cost of transacting in a security is lower for firms with a greater number of analysts following them, even after controlling for the effects of other cross sectional determinants of liquidity
(Laux, 1993)	There is a relation between spreads and characteristics of trade size; spreads of low volume, low capitalization, low price stocks are dominated by the order costs, while spreads of high volume, high capitalization, high price stocks are dominated by the inventory costs
(Chiang and Venkatesh, 1988)	Spreads are significantly positively related to ownership by insiders and institutional investors even after controlling for firm's size and other holding costs
(Hamilton, 1978)	Spreads are significantly positively related to price and price variance, and significantly negatively related to number of shareholders, institutional ownership and the number of competing dealers
(Stoll, 1978)	Percentage spreads are significantly positively related to price variance and significantly negatively related to price, trading volume and number of competing dealers
(Branch and Freed, 1977)	Percentage spreads are significantly positively related to percentage change in price from previous day and the number of markets in which the dealer works, and significantly negatively related to price, volume and dealer competition
(Barnea and Logue, 1975)	Spreads are significantly positively related to price variance and significantly negatively related to trading volume
(Tinic, 1972)	Spreads are significantly positively related to price and significantly negatively related to trading volume, institutional ownership and number of markets in which dealer works
(Tinic and West, 1972)	Spreads are significantly positively related to price, and significantly negatively related to trading volume and the number of competing dealers

Table 4 summarizes the theoretical research on how earnings announcements affect information asymmetry. The earlier studies suggest that the existence of public disclosures should reduce information asymmetry in the stock market. The later models show that information asymmetry may increase (at least temporarily) in the days around earnings announcements.

Table 4: Theoretical Studies on Earnings Announcements and Information Asymmetry

Study	Description of Study
Kim and Verrecchia (1994)	Show that earnings announcements increase information asymmetry on the day of release if investors differ in their ability to process the earnings information.
Demski and Feltham (1994)	Show that the anticipation of earnings announcements may increase private information search.
McNichols and Trueman (1994)	Show that investors with short investment horizons will increase their private information search prior to earnings announcements in an attempt to profit from the announcement.
Limdholm (1991)	Shows that earnings announcements may reduce the number of informed traders but may increase the degree of information try between the informed and uninformed traders.
Diamond (1985)	Shows that earnings announcements make traders' beliefs more homogeneous and reduce informed traders' speculative positions.
Verrecchia (1982)	Shows that earnings announcements reduce private information search.

Table 5 summarizes the empirical research on information events and bid-ask. It presents studies that examine how earnings announcements and other information events affect information asymmetry in the stock market.

Table 5: Empirical Studies on Earnings Announcements and Information Asymmetry as Reflected in Bid-Ask Spreads

Study	Findings
Yohn (1997)	Finds that spreads are related to the expected trading profits from obtaining private information prior to earnings announcements; also finds an increase in spreads in the four days prior to earnings announcements.
Krinsky and Lee (1996)	Find that the increase in spreads around earnings announcements is due largely to the information asymmetry component of the spread.
Affleck-Graves et al. (1996)	Find that the increase in spreads around earnings announcements is inversely related to the predictability of earnings.
Maddala and Nimalendran (1995)	Using an observed components model, find significant effects of earnings surprises on bid-ask spreads.
(Greenstein and Sami, 1994)	Find that firms that more finely partitioned data in the SEC reports had a reduction in bid-ask spreads.
(Brooks, 1994)	Finds that the bid-ask spread components have significant changes around earnings announcements.
(Lee et al., 1993)	Using intraday data, find an increase in spreads the day prior to, the day of and the day after earnings announcements; also find that the increase in spreads is related to the market response to earnings.

Raman and Tripathy (1993)	Find that firms that disclosed present-value variables in SEC filings had a reduction in bid-asks spreads.
Senteney (1991)	Finds that the bid-ask spread reaction to trading volume around earnings announcements is greater when earnings is positive (rather than negative) and when earnings is reported later than expected (rather than earlier).
(Venkatesh and Chiang, 1986)	Find no significant increase in spreads in anticipation of earnings announcements.
Morse and Ushman (1983)	Find no significant changes in spreads around earnings announcements.

Amihud and Mendelson (1986) study the effect of the bid-ask spread on asset pricing. The data is the monthly securities returns for NYSE stocks of the years 1960-1980. They analyze a model in which investors with different expected holding period's trade assets with different relative spreads. The results suggest that liquidity-increasing financial policies can reduce the firm's opportunity cost of capital, and provide measures for the value of improvements in the trading and exchange process. The higher yields required on higher-spread stocks give firms an incentive to increase the liquidity of their securities, thus reducing their opportunity cost of capital. Consequently, liquidity-increasing financial policies may increase the value of the firm. Applying their empirical results, consider an asset which yields $1 per month, has a bid-ask spread of 3.2%, its proper opportunity cost of capital is 2% per month, and the yielding a value of $50. If the spread is reduced to 0.486%, their estimates imply that the value of the asset would increase to $75.8, about a 50% increase, suggesting a strong incentive for the firm to invest in increasing the liquidity of the claims it issues.

3.4 Previous Studies of Palestine Exchange Market

Many studies discuss different areas in PEX Market but none of them test the Information asymmetry and its impact on cost of equity capital. Although, some studies are found examine related issues.

Alkhatib and Harasheh (2014) aim to empirically examine the weak-form market efficiency of (PEX). The weak form of efficient market means that prices of the shares instantly and fully reflect all information of the past prices and the future price movements cannot be predicted by using past prices. The sample is the daily closing values of market indices from the time period each index was established till

31/10/2012. The study employs the serial correlation and the Augmented Dickey-Fuller test (ADF) as parametric tests. The runs test is also used as a non-parametric test. Results of the parametric tests are consistent with the alternative hypothesis that the stock market is inefficient at the weak-form level as the indices exhibited autocorrelation and stationary behavior. Meanwhile, results of the runs test also supports the inefficiency of the market as the major index found to be following a pattern rather than a random walk. Finally, result of the regression analysis of stock indices doesn't support the random walk model.

Awad et al. (2012) explore the correlation between the intrinsic value (IV) and market value (MV) of common stocks. In this study, time series data type are used for the quarterly average of daily market value of common stock prices to test the co-integration between the market value variable and calculated intrinsic value variable. The period under examination extends from January 2010 through March 2011, with 180 observations in total. This study undertakes two methods to examine its two main hypotheses. First, a method of discounted cash flow model is used to calculate the companies' intrinsic value so as to investigate the direct relationship between MV and IV. Second, econometric models are used to examine the causal relations relationship between MV and IV to the companies listed in the PEX. Seamlessly, given that the goal of the firms is to maximize the value of the shareholders, the more the intrinsic value of the company stock, the more market value of the stock price, so that there is a positive correlation between the intrinsic and market value of a particular common stock. This is founded in the first test of this study. Ironically, the positive correlation does not always imply that the intrinsic value causes the changes in market value; that is, empirical results of the co-integration test of this paper reveals that the market value is what causes the changes in intrinsic value, meaning that stock prices in PEX does not significantly depend on fundamentals, but rather on supply and demand forces, other things being equal.

Abushammala (2011) tests the efficiency of PEX to make sure that all investors have the same chances in profit taking, and to research the stationary and random walk of PEX Indices. The efficiency is tested by using the daily prices of the period from January 1st, 2007 to December 31st, 2010. It covers the daily prices of general index, Al-Quds index, and the main sectors Indices of (PEX) which are industry, banking, insurance, services, and investment. The Researcher through

statistical measures; Agument Dickey Fuller (ADF), the Phillips Perron (PP), and the Kwiatkoowski-Phillips-Schmidt-Shin (KPSS) proves the inefficiency of the (PEX) in the weak level, which means the possibility of taking advantage of technical analysis to be able to predict future prices by extrapolating the past prices.

Daraghma (2010) presents an investigation of the listed companies in Palestine Exchange (PEX). This investigation examines the relative and incremental information content of earnings per share (EPS) and operating cash flows (OCF). In addition, this paper aims to test the impact of losses on the information content of EPS and OCF. This study uses the accounting data of the companies that listed in the PEX from 2004-2008. Furthermore, it employs a variety of statistical procedures (descriptive analysis, correlation test, regression analysis, and Akaike's information criterion (AIC) and Vuong's test for model selection). Also, 23 Palestinian corporations were selected for testing the hypotheses. The results of this paper indicate the existence of value relevance of earnings whereas there is no sufficient evidence to confirm that operating cash flows has information content. Moreover, any firm that achieves profit will have a positive impact on the value relevance on its earnings and operating cash flows.

Shaheen (2010) investigates the perception of users regarding to availability, adequacy, relevance, and usefulness of information disclosed in the financial reports of companies listed at the PEX. A survey methodology is employed where a well-designed questionnaire is distributed to a selected sample of information users, i.e. individual and institutional users, analysts, academicians, and intermediaries during the period 1/8/2008 – 1/11/2008. Results of the study demonstrate that the perception of users that reported information, which is available, is neither adequate nor relevant to investment decisions. In particular, relevant information is not sufficient, as companies listed do not comply with minimum disclosure requirements per international standards. In addition, it demonstrates the incredibility and timeliness of information, which leads to a lack of information, being impounded into prices. Results demonstrate that rejection of the weak form efficient in this market is due in part to the perception of users that report information available is not adequate or relevant to investment decisions. It also contributes to illiquidity, low volume of trading, weakness confidence, and perceived risks of the market.

Awad and Daraghma (2009) examine the efficiency of the Palestine Exchange (PEX) at the weak-level for 35 stocks listed in the market by using daily observations

of the PEX indices: Alquds index, general index, and sector indices. Daily returns from January, 01, 1998 to October, 30, 2008 are examined for random walks using parametric and nonparametric tests. The parametric tests include serial correlation test, and Augmented Dickey-Fuller (ADF) unit root tests. The nonparametric tests include runs test, and Phillips-Peron (PP) unit root test. The study utilize nonparametric tests for investigating the efficiency of the PEX at the weak level, especially, the results of Jarque-Bera test for normality show that the daily returns of the PEX are not normally distributed. The serial correlation tests and the runs tests both reveal that the daily returns are inefficient at the weak-form. Also, the unit root tests (Augmented Dickey-Fuller (ADF) unit root test and Phillips-Peron (PP) unit root test) suggest the weak-form inefficiency in the return series. However, the PEX is inefficient at the weak level; as a result, this is likely to be an evidence that the prudent investor who deals with the PEX will achieve abnormal returns using historical data of stock prices, and trading volume.

3.5 Comments on literature Review and Research Gap

As illustrated in the literature review, the study's object is related to the previous studies that examined the relation between information asymmetry and cost of equity (Nuryaman, 2014), (He et al., 2013), (Lambert et al., 2012), (Armstrong et al., 2011), (Verdi, 2005), (Botosan et al., 2004), (Easley and O'hara, 2004), and (Leuz and Verrecchia, 2004). These studies are conducted on efficient and emerging markets but none of them are conducted on PEX. Multiple regression analysis method is used by (Nuryaman, 2014). It is found that there is positive relation between information asymmetry and cost of equity capital, ex ante investor's required rate of return, and cost of equity capital in imperfect competition markets (Nuryaman, 2014), (He et al., 2013), (Lambert et al., 2012), and (Armstrong et al., 2011). However, it is found also negative relation with the implied equity cost of capital (Verdi, 2005). Additionally, the cost of equity capital is being affected by the differences in the composition of information between public and private information (Easley and O'hara, 2004), while the higher information quality or discloser leads to lower rates of returns and cost of capital (Leuz and Verrecchia, 2004), (Easley et al., 2002), and (Botosan, 1997).

Additionally, the relation between information asymmetry and earnings is investigated in many studies (Naranjo, 2013), (Alzahrani and Gregoriou, 2010),

(Vincent, 2010), (Bhat and Jayaraman, 2009), (Lakhal, 2008), (Kanagaretnam et al., 2007), (How et al., 2005), and (Richardson, 2000). It is found that Information asymmetry increases after earnings announcements (Naranjo, 2013), (Alzahrani and Gregoriou, 2010), (Vincent, 2010), (Bhat and Jayaraman, 2009), (Lakhal, 2008). Besides, firms with higher levels of corporate governance have lower information asymmetry around quarterly earnings announcements (Kanagaretnam et al., 2007). Furthermore, Information asymmetry reduces due to the release of corporate earnings and dividend for all proxies of information asymmetry except for trading volume (How et al., 2005). There is positive relation between Information asymmetry and earnings management (Richardson, 2000).

Furthermore, the relevant studies on PEX did not investigate the information asymmetry before and its impact on the cost of equity capital. Alkhatib and Harasheh (2014), Abushammala (2011), and Awad and Daraghma (2009) test the weak form of the market efficiency for the Palestine Exchange (PEX). It is found in these studies that PEX is inefficient at the weak-form level**.** As a result, this is likely to be evidence that the prudent investor who deals with the PEX will achieve abnormal returns using historical data of stock prices, and trading volume.

While Awad et al. (2012) explore the correlation between the intrinsic value (IV) and market value (MV) of common stocks. It is found that there is a positive correlation between the intrinsic and market value of a particular common stock although the positive correlation does not always imply that the intrinsic value causes the changes in market value. The empirical results of the co-integration test of this paper reveals that the market value is what causes the changes in intrinsic value, meaning that stock prices in PEX does not significantly depend on fundamentals, but rather on supply and demand forces.

Daraghma (2010) examines the relative and incremental information content of earnings (EPS) and operating cash flows (OCF). The results of this paper indicate the existence of value relevance of earnings whereas there is no sufficient evidence to confirm that operating cash flows has information content. Moreover, any firm that achieves profit will have a positive impact on the value relevance on its earnings and operating cash flows.

Shaheen (2010) investigates the perception of users regarding to availability, adequacy, relevance, and usefulness of information disclosed in the financial reports of companies listed at the PEX. The study results demonstrate that the perception of

users that reported information, which is available, is neither adequate nor relevant to investment decisions. In particular, relevant information is not sufficient, as companies listed do not comply with minimum disclosure requirements per international standards. In addition, it demonstrates the incredibility and timeliness of information, which leads to a lack of information, being impounded into prices. Results demonstrate that rejection of the weak form efficient in this market is due in part to the perception of users that report information available is not adequate or relevant to investment decisions. It also contributes to illiquidity, low volume of trading, weakness confidence, and perceived risks of the market.

According to previous PEX studies' results, the researcher believes that the research gape is not examined yet on PEX is investigating the information asymmetry status and its impact on the cost of equity capital. Therefore, It is used a model to test the impact of the study's variables on cost of equity capital. As mentioned before, the stocks returns are used to estimate the cost of equity capital (Nuryaman, 2014), (He et al., 2013), (Armstrong et al., 2011), (Verdi, 2005), (Botosan et al., 2004), and (Leuz and Verrecchia, 2004). Bid-ask spread is used in many studies as a proxy of information asymmetry (Nuryaman, 2014), (He et al., 2013), (Armstrong et al., 2011), (Naranjo, 2013), (Alzahrani and Gregoriou, 2010), (Bhat and Jayaraman, 2009), (Lakhal, 2008), (Kanagaretnam et al., 2007), (How et al., 2005), and (Verdi, 2005). Volatility is used as a measure of liquidity by (Alzahrani and Gregoriou, 2010), (Verdi, 2005), and (Wang, 1993). Trading volume is used as a measure of liquidity by (Alzahrani and Gregoriou, 2010), Vincent (2010), (Lakhal, 2008), (How et al., 2005), and (Verdi, 2005). Trading activity is used as a measure of liquidity (Alzahrani and Gregoriou, 2010).

Chapter Four: Study Methodology and Results

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Chapter Four

Study Methodology and Results

4.1 Introduction:

Chapter four presents study sample, methodology, descriptive analysis, regressions analysis, and results. The methodology of testing the study variables is using a model to investigate the impact of information asymmetry on cost of equity capital. The calculating variables method is explained in the model section. Besides, the general view of study variables is clarified in descriptive analysis that compares among these variables between market sectors and years of study period. Finally, the results of the main, first, second, third models, and the findings of multicollinearity test are demonstrated in this chapter.

4.2 Study Sample and Data

The study sample covers 50 listed companies in PEX, which is illustrated in **table** 28 of appendices. These companies are distributed among five economic sectors. These sectors are Bank and Financial Services, Industry, Insurance, Investment, and Service.

Study considers the period of 2006 till 2013. The years before 2006 is excluded from the study because the number of trading days was less than 200 day in a year which is considered inconvenient for the study.

The study collects secondary data from website of PEX www.pex.ps. The study collects daily trading sheets from 2006 till 2013. The total number of daily trading sheets is 1959 days as illustrated in table 6. It means that, there are approximately 245 trading days every year on average. The data of bid prices, ask prices, closing prices, number of trades, trades value, and trades volume, for every stock in each day, are collected. In addition, other resources like journals, websites, books, and publications are gathered from different Electronic databases for the literature.

Table 6: Number of Trading days in each year

#	Year	N. Trading Days	#	Year	N. Trading Days
1.	2006	237	5.	2010	249
2.	2007	247	6.	2011	248
3.	2008	242	7.	2012	249
4.	2009	246	8.	2013	241
Total		**1959 trading days**			

Stocks that are added or deleted due to events such as mergers and takeovers are excluded from the analysis. The data related to mergers, spin offs and takeover is obtained from website of the PEX www.pex.ps. For example, the data which is related to the merger of Al-Rafah Microfinance Bank (which is listed in PEX) and Arab and Palestinian Investment Bank (which is not listed in PEX) in 13-11-2012 are not considered.

4.3 Model:

It is used a model to test the impact of the study's variables on cost of equity capital. The model considers cost of equity capital as dependent variable. Bid-ask spread, volatility, number of trades, trading volume, and trading value are considered as independent variables. The stocks returns are used to estimate the cost of equity capital and this is used before in studies like (Nuryaman, 2014), (He et al., 2013), (Armstrong et al., 2011), (Verdi, 2005), (Botosan et al., 2004), and (Leuz and Verrecchia, 2004). Bid-ask spread is used as a measure of information asymmetry which is implemented in many studies before like (Nuryaman, 2014), (He et al., 2013), (Armstrong et al., 2011), (Naranjo, 2013), (Alzahrani and Gregoriou, 2010), (Bhat and Jayaraman, 2009), (Lakhal, 2008), (Kanagaretnam et al., 2007), (How et al., 2005), and (Verdi, 2005). Volatility is used as a measure of liquidity in this study and many studies also like (Alzahrani and Gregoriou, 2010), (Verdi, 2005), and (Wang, 1993). Furthermore, the number of trades is used in this study and other studies like (Alzahrani and Gregoriou, 2010). Additionally, as many studies before trading volume is used as a measure of liquidity (Alzahrani and Gregoriou, 2010), Vincent (2010), (Lakhal, 2008), (How et al., 2005), and (Verdi, 2005). Finally, trading value is used as independent variable in this study.

$$\boldsymbol{Y = BA + V + NT + TVa + TVo} \qquad (2)$$

Whereas:

Y = Cost of Equity Capital (Return), and it is computed based on the daily return which is calculated by the following equation:

$$Cost\ of\ equity\ capital = Ln\ \frac{P_t}{P_{t-1}} \qquad (3)$$

Where Ln is the natural logarithm of the quotient of $\frac{P_t}{P_{t-1}}$, where P_t is current closing price at specific time (t) and P_{t-1} is previous closing price at time (t-1).

BA = Bid-Ask spread which is calculated by computed the difference between the daily best bid and best ask as the following equation:

$$\text{Spread}_t = P_t^A - P_t^B \quad (4)$$

where P_t^A refers to best ask price at time t and P_t^B to the best bid price at time t.

V = Volatility

The monthly volatility of closing price is calculated by computing the variance of daily closing price for each month.

NT = Number of trades is available from PEX

TVa= Trading Value is available from PEX

TVo = Trading volume is available from PEX

4.4 Descriptive analysis

The descriptive analysis clarifies general view of study variables' characteristics among listed companies in PEX. The general view of collected data of 8 years' period (2006-2013) is presented in this section. It focuses on describing the study variables. It shows cost of equity capital (return), Bid-Ask spread, volatility, number of trades, trades value, trades volume in PEX sectors with statistical metrics like growth rate (GR), mean, median, standard deviations (Stdev), variance (Var), first quartile (1q), third quartile (3q), minimum value (Min), and maximum value (Max). This section presents comparable view among market sectors and years. In addition, it provides preview of data among companies, which are sorted due to market sectors and market capitalization value.

4.4.1 The Descriptive Analysis of Cost of Equity Capital "Return" Data

The Cost of equity capital (return) is computed based on the daily return which is calculated by the following equation:

$$Cost\ of\ equity\ capital = Ln\ \frac{P_t}{P_{t-1}} \quad (5)$$

Where Ln is the natural logarithm of the quotient of $\frac{P_t}{P_{t-1}}$, where P_t is current closing price at specific time (t) and P_{t-1} is previous closing price at time (t-1).

Table 7 reports PEX sectors' return. Industry sector has the greatest return's mean among other sectors with 0.00199 and the bank and financial services sector was the second one with 0.0013. Investment was the third one with 0.0005, taking into consideration that the median is -0.00114. On the other side, service and insurance sectors were the biggest losers with -0.00156 and -0.00042 respectively. In the same time, the industry sector was the only sector that its return increased from 2006 to 2013 by 26.8%. While the other sectors lost by 4%, 29.6%, 28%, and 12% for bank and financial services, insurance, investment and service sectors respectively.

Table 7: Cost of equity capital "Return"

	Sectors Average	Bank and Financial Services	Industry	Insurance	Investment	Service
GR	-0.06676	-0.04072	0.26833	-0.29636	-0.28104	-0.12121
Mean	0.00030	0.00131	0.00200	-0.00042	0.00005	-0.00156
Median	0.00011	0.00148	0.00154	-0.00086	-0.00114	-0.00095
Stdev	0.00559	0.00281	0.00606	0.00482	0.00766	0.00638
Var	0.00008	0.00001	0.00007	0.00003	0.00021	0.00008
1q	-0.00255	-0.00006	-0.00074	-0.00242	-0.00564	-0.00424
3q	0.00341	0.00278	0.00490	0.00159	0.00601	0.00173
Min	-0.00627	-0.00199	-0.00445	-0.00585	-0.00841	-0.01013
Max	0.00686	0.00451	0.00875	0.00541	0.00981	0.00561

Table 8 illustrates PEX sectors' return on annual basis. Industry sector has largest return in 2007, 2009, 2012, and 2013 whereas it was the biggest loser in 2011. From 2007 to 2011, insurance sector was the biggest loser while it was the biggest winner in 2006 and 2011. Investment sector has the biggest return in 2008 and 2010 while it was the biggest losers in 2006, 2012, and 2013. Finally, it is noticeably that bank and financial services sector is the only sector that has stability without any losses from 2008 till 2013. Comparing 2006 with 2013, bank and financial services, industry, and insurance sectors have positive results while investment and service sectors have negative results.

Table 8: Cost of equity capital "Return" 2006-2013

Sectors	2006	2007	2008	2009	2010	2011	2012	2013
Bank and Financial Services	-0.0012	-0.0002	0.0010	0.0003	0.0016	0.0013	0.0037	0.0005
Industry	-0.0005	0.0028	-0.0008	0.0052	0.0076	-0.0012	0.0072	0.0052
Insurance	0.0057	-0.0027	-0.0029	-0.0030	-0.0052	0.0026	0.0015	0.0014
Investment	-0.0013	-0.0007	0.0052	-0.0025	0.0089	-0.0001	-0.0036	-0.0036
Service	-0.0011	-0.0011	-0.0027	0.0015	0.0029	-0.0003	0.0006	-0.0009

4.4.2 The Descriptive Analysis of Bid-Ask Spread Data

Table 9 reports PEX sectors' bid-ask spread. It is obvious that investment and bank sectors have the smallest bid-ask spreads' mean which are 0.0327 and 0.0402 respectively. While, the insurance and industry sectors have the biggest bid-ask spreads' mean which are 0.0971 and 0.0881 respectively. These results indicate that the investment sector stocks' liquidity is the highest while the insurance one is the lowest. This conclusion can be confirmed in **table 10**, where the number of trades' mean for investment sector is 21.27 trades whereas it is 3.59 trades for insurance sector. Paradoxically, the bid-ask spread decreased among all sectors from 2006 to 2013 except the bank and financial sector. It increased by 2% for bank and financial sector while it decreased by 2%, 8.5%, 4.6%, and 5.7% for industry, insurance, investment and service sectors respectively.

Table 9: Average of Bid-Ask Spread

	All Sectors Average	Bank and Financial Services	Industry	Insurance	Investment	Service
GR	-0.0355	0.0208	-0.0204	-0.0848	-0.0463	-0.0573
Mean	0.0600	0.0402	0.0881	0.0971	0.0327	0.0437
Median	0.0572	0.0378	0.0865	0.0891	0.0297	0.0425
Stdev	0.0205	0.0125	0.0277	0.0420	0.0115	0.0126
Var	0.0009	0.0003	0.0011	0.0028	0.0002	0.0003
1q	0.0492	0.0342	0.0722	0.0763	0.0259	0.0373
3q	0.0656	0.0416	0.0988	0.1040	0.0352	0.0489
Min	0.0406	0.0308	0.0579	0.0626	0.0232	0.0295
Max	0.0950	0.0617	0.1328	0.1739	0.0555	0.0627

Table 10 presents PEX sectors' bid-ask spread on annual basis. investment sector has the lowest bid-ask spread in 2007, 2012, and 2013 while bank and financial sector has the least spread in 2010 and 2011. Service sector has the smallest bid-ask spread in 2006, 2008 and 2009. Furthermore, insurance spread's mean was the highest among other sectors from 2006 till 2010, although it has become the second from 2011 to 2013. On the other hand, industry sector has the opposite figures. In other words, it was the second place from 2006 to 2010 and the first place from 2011 till 2013. Generally and comparing 2006 with 2013, bid-ask spread decreased in bank and financial services, investment, and services sectors whilst it increased in insurance and industry sectors.

Table 10: Bid-Ask Spread 2006-2013

Sectors	2006	2007	2008	2009	2010	2011	2012	2013
Bank and Financial Services	0.0705	0.0355	0.0313	0.0278	0.0250	0.0266	0.0371	0.0285
Industry	0.0970	0.0758	0.0642	0.0630	0.0857	0.0871	0.0782	0.0992
Insurance	0.2297	0.1337	0.1171	0.1022	0.1116	0.0826	0.0725	0.0607
Investment	0.0555	0.0290	0.0346	0.0301	0.0266	0.0322	0.0317	0.0283
Service	0.0546	0.0299	0.0293	0.0272	0.0513	0.0471	0.0393	0.0330

4.4.3 The Descriptive Analysis of Volatility Data

Table 11 shows PEX sectors' Volatility. It is obvious that Industry has the highest volatility's mean which is 0.0219. While, the investment sector has the smallest volatility's mean which is 0.0026. In addition, the volatility of bank and financial services, insurance, and service sectors are 0.0088, 0.006, and 0.0055 respectively. In the same time, the volatility of bank and financial services was the only sector which increased during the period of 8 years with 0.1317. Furthermore, the others' volatility sectors decreased with -0.1509, -0.1619, -0.2710, and -.2403 of industry, insurance, investment, and service sectors respectively.

Table 11 Volatility

	All Sectors	Bank and Financial Services	Industry	Insurance	Investment	Service
GR	-0.1360	0.1317	-0.1509	-0.1619	-0.2710	-0.2403
Mean	0.0098	0.0088	0.0219	0.0060	0.0026	0.0055
Median	0.0029	0.0021	0.0051	0.0031	0.0010	0.0024
Stdev	0.0180	0.0160	0.0478	0.0077	0.0039	0.0079
Var	0.0045	0.0012	0.0180	0.0001	0.0001	0.0005
1q	0.0017	0.0010	0.0037	0.0017	0.0006	0.0011
3q	0.0075	0.0075	0.0131	0.0075	0.0027	0.0053
Min	0.0009	0.0006	0.0023	0.0007	0.0003	0.0005
Max	0.0485	0.0422	0.1241	0.0208	0.0116	0.0212

Table 12 presents the sectors' volatility on annual basis. Investment has the smallest volatility in 2006, 2007, 2008, 2009, and 2013. Bank and financial services has the smallest volatility in 2010, 2011, and 2012 while it was the highest in 2007. The volatility of Industry sector was the biggest among other sectors in 2006, 2011, 2012, and 2013. Insurance's volatility was the greatest in 2009 and 2010. Service's volatility was the highest in 2008. Comparing 2006 with 2013, the volatility decreased among all sectors.

Table 12 Volatility from 2006-2013

Sectors	2006	2007	2008	2009	2010	2011	2012	2013
Bank and Financial Services	0.0816	0.0274	0.0061	0.0035	0.0009	0.0006	0.0008	0.0015
Industry	0.1557	0.0110	0.0097	0.0034	0.0062	0.0090	0.0047	0.0096
Insurance	0.0758	0.0093	0.0127	0.0087	0.0106	0.0027	0.0014	0.0015
Investment	0.0143	0.0028	0.0021	0.0008	0.0015	0.0011	0.0009	0.0009
Service	0.0469	0.0070	0.0131	0.0055	0.0030	0.0009	0.0011	0.0019

4.4.4 The Descriptive Analysis of Trades' number Data

Table 13 clarifies number of PEX trades. Investment sector trades mean is the highest with 21.27 trades whereas insurance one is the smallest with 3.59 trades. Bank and financial services, service, and industry sectors have 13.96, 11.63, and 3.59 trades respectively. These results are consistent with the bid-ask spread figures where investment sector has the smallest bid-ask spread and the insurance has the biggest

one. In addition, the rest of sectors have the same ranking in terms of bid-ask spread. In addition, the number of trades decreased among all sectors from 2006 to 2013 by 23%, 9%, 5.9%, 12%, 15% for bank and financial services, industry, insurance, investment and service sectors respectively.

Table 13: Number of Trades

	Sectors Average	Bank and Financial Services	Industry	Insurance	Investment	Service
GR	-0.1368	-0.2341	-0.0917	-0.0592	-0.1198	-0.1535
Mean	10.8223	13.9633	4.6394	3.5925	21.2741	11.6371
Median	9.0428	10.9807	4.1616	3.1948	17.9650	9.7722
Stdev	6.7882	9.5296	2.0783	1.4462	14.2519	6.9615
Var	226.6138	214.8743	7.5497	3.4938	751.6370	217.3432
1q	6.1003	7.9134	3.2769	2.6477	10.2423	6.6653
3q	13.7968	16.9174	5.5968	4.3357	29.8700	14.1997
Min	4.6166	6.0797	2.7217	2.2714	6.6719	5.2902
Max	22.0839	29.7018	7.9333	5.6981	45.4977	23.8354

Table 14 illustrates number of PEX sectors' trades on annual basis. Investment sector has the most number of trades from 2006 to 2011 and 2013 while bank and financial sector has the second place in most years and the first ranking in 2012. On the other side, industry sector has the smallest figure in 2006 and 2007 while the insurance is the least one in the rest of years. Comparing 2006 with 2013, number of trades decreased sharply for all sectors.

Table 14: Number of Trades 2006-2013

Sectors	2006	2007	2008	2009	2010	2011	2012	2013
Bank and Financial Services	22.17	35.97	31.55	16.41	11.30	8.89	8.49	6.86
Industry	8.63	6.30	6.32	4.38	5.31	4.48	2.98	3.29
Insurance	16.40	8.08	4.26	3.71	4.27	3.20	2.70	3.27
Investment	48.86	37.16	33.48	20.85	22.46	12.67	7.48	8.40
Service	39.11	24.50	23.53	14.87	9.03	8.44	6.28	5.93

4.4.5 The Descriptive Analysis of Trades' Value Data

Table 15 presents PEX sectors' trades value. Bank and financial service sector has the greatest trades' value mean among other sectors with 110,562 whereas industry has the smallest one with 15,491.84. Investment, service, and insurance sectors trades' value mean are 88,386.6, 80,774.9 and 52,163 respectively. It is

noticeable the huge difference between bank and financial service sector and industry sector. Furthermore, the trades value depreciates for bank and financial services, investment, and service sectors by 0,87%, 2%, and 17% respectively. It appreciates for industry and insurance sectors by 3% and 27.6% respectively.

Table 15: Trades Value

	Sectors Average	Bank and Financial Services	Industry	Insurance	Investment	Service
GR	-0.0001	-0.0087	0.0320	0.2767	-0.0195	-0.1707
Mean	68,021.6	110,562.0	15,491.8	52,163.3	88,386.6	80,774.9
Median	51,610.6	86,336.0	11,083.5	28,795.6	61,507.2	69,911.0
Stdev	52,910.2	77,607.9	12,601.9	63,496.3	75,591.3	47,982.0
Var	23.2	23.1	19.5	23.7	23.7	23.3
1q	37,432.9	66,375.1	8,390.0	10,446.7	44,988.7	53,062.1
3q	84,398.5	143,513.6	19,939.7	72,211.7	99,698.1	96,503.8
Min	24,068.0	44,483.5	5,224.4	6,437.1	21,186.8	38,104.3
Max	151,929.5	225,015.5	36,053.6	143,877.2	239,942.2	152,922.4

Table 16 reports PEX sectors' trades value on annual basis. Bank and financial service sector has the highest trades' value among other sectors in 2007 and 2013. Investment was top ranked in 2011. Service sector has the highest trades' value in 2006, 2008, 2009, and 2010 but it has fallen dramatically since 2011. On the other hand, insurance has the poorest trades' value from 2008 to 2011 and the best one in 2012. Industry has the smallest trades' value in 2006, 2007, 2012, and 2013. Comparing 2006 to 2013, all sectors have declined especially service and investment sectors which fell severely.

Table 16: Trades value 2006-2013

Sectors	2006	2007	2008	2009	2010	2011	2012	2013
Bank and Financial Services	78,160.7	160,419.7	148,235.1	103,192.3	72,861.2	78,266.6	115,089.7	77,374.1
Industry	14,138.4	9,272.6	16,149.2	16,969.3	17,988.5	28,711.3	18,571.5	10,491.0
Insurance	63,897.7	26,098.5	6,330.5	9,780.4	13,823.1	19,520.3	143,906.2	56,827.6
Investment	221,304.8	94,754.2	143,542.1	71,254.3	78,710.9	94,510.1	31,530.2	66,833.3
Service	266,831.8	97,954.8	206,774.4	103,725.9	87,020.6	63,712.7	56,819.2	41,233.2

4.4.6 The Descriptive Analysis of Trades Volume Data

Table 17 donates PEX sectors' Trades Volume. Bank and financial service sector has the greatest trades' value mean among other sectors with 85,384.67 whereas industry has the smallest one with 6,386.57. Investment, insurance, and service sectors trades' volume mean are 60,579.6, 37,911.6 and 24,636.8 respectively. It is noticeable the huge difference between bank and financial service sector and industry sector. Furthermore, the trades' volume depreciates for bank and financial services, investment, and service sectors by 0.45%, 1%, and 15% respectively. It appreciates for industry and insurance sectors by 4% and 34% respectively.

Table 17: trades volume

	Sectors Average	Bank and Financial Services	Industry	Insurance	Investment	Service
GR	0.0188	-0.0045	0.0437	0.3432	-0.0130	-0.1527
Mean	40,329.50	85,384.67	6,386.57	37,911.62	60,579.63	24,636.81
Median	32364.7	70789.8	4899.6	22816.6	46951.6	23653.8
Stdev	29497.1	51270.0	5001.8	44512.7	42201.2	16578.6
Var	21.941	22.395	17.538	22.964	22.156	20.457
1q	23424.8	55956.7	3828.4	8623.7	36830.1	15608.5
3q	49440.5	104217.2	7340.1	51957.6	68868.6	31473.1
Min	15552.2	40673.9	2304.1	5205.7	22171.1	9488.6
Max	87079.9	163791.8	14941.5	101953.6	149003.2	45333.3

Table 18 exhibits PEX sectors' Trades Volume on annual basis. Bank and financial service sector has the highest trades' volume amongst other sectors in 2007, 2009, 2010 and 2013. Investment was top ranked in 2006, 2008, and 2011. On the other hand, insurance has the smallest trades' volume in 2008 while it was the biggest in 2012. Industry has the smallest trades' value in 2006, 2007, and the period of 2009 to 2013. Comparing 2006 to 2013, bank and financial service and insurance sectors were increased whereas the rest of sectors decreased.

Table 18: Trades Volume

Sectors	2006	2007	2008	2009	2010	2011	2012	2013
Bank and Financial Services	42,255.6	92,688.4	86,087.2	60,196.5	59,148.8	72,590.8	91,241.7	66,470.0
Industry	5,213.3	4,257.8	5,966.9	8,670.3	7,993.3	10,036.1	7,755.6	4,545.3
Insurance	23,871.1	14,535.4	5,079.3	8,855.7	10,950.4	13,538.2	101,203.9	48,357.5
Investment	83,127.6	69,452.8	88,288.8	57,583.3	55,961.3	83,413.1	31,580.6	60,271.6
Service	47,463.6	27,696.9	36,232.1	22,887.5	25,121.0	19,441.4	24,241.0	11,573.6

4.4.7 The Descriptive Analysis of Study Variables among PEX Companies

Table 19 presents PEX companies which are sorted according to the market capitalization value in 2013. Groups from A to K are sorted from the largest to the smallest according to market capitalization. Note that, the companies' market capitalization values are presented at **table 20**. Group A has smallest Bid-Ask spread, highest Trades value, and highest Trades Volume. Group B has smallest number of trades. Group D has the greatest bid-ask spread and the lowest trades' volume. Group F has the largest number of trades. Group G is the leading one according to the return. Group J has the smallest return. Group K has the least trades' value.

Table 19: Companies' Groups Variables

#	Company's Groups	Cost of equity capital	Bid-Ask Spread	Volatility	Number of Trades	Trades Value	Trades Volume
1	Group A	-0.00038	0.02290	0.0212	11.29	326,674.47	114,495.00
2	Group B	0.00064	0.03154	0.0052	3.20	49,538.31	40,693.95
3	Group C	0.00295	0.06571	0.0102	17.60	60,486.80	34,680.92
4	Group D	0.00171	0.17116	0.0458	6.70	18,473.28	4,915.16
5	Group E	0.00081	0.03595	0.0010	3.43	99,770.96	104,238.48
6	Group F	0.00213	0.07341	0.0032	35.76	12,548.24	9,955.98
7	Group G	0.00636	0.04867	0.0012	5.38	11,786.21	10,658.31
8	Group H	-0.00249	0.06119	0.0035	9.54	50,439.81	41,422.17
9	Group J	-0.00538	0.02981	0.0006	6.44	20,005.02	17,915.07
10	Group K	-0.00481	0.05330	0.0070	7.71	6,719.49	10,416.70

Table 20: Companies' Market Capitalization Values at 31/21/2013

#	Company's Name	Symbol	Market Capitalization	Group
1	PALESTINE TELECOMMUNICATIONS	PALTEL	**1,076,762,867**	A
2	BANK OF PALESTINE	BOP	**480,000,000**	
3	PALESTINE DEVELOPMENT &	PADICO	**337,500,000**	
4	WATANIYA PALESTINE MOBILE	WATANIYA	**263,160,000**	
5	PALESTINE ELECTRIC	PEC	**85,200,000**	
6	PALESTINE ISLAMIC BANK	ISBK	**77,000,000**	B
7	PALESTINE REAL ESTATE	PRICO	**59,355,760**	
8	THE NATIONAL BANK	TNB	**58,500,000**	
9	ARAB ISLAMIC BANK	AIB	**56,027,526**	
10	BIRZEIT PHARMACEUTICALS	BPC	**56,025,233**	
11	PALESTINE POULTRY	AZIZA	**55,731,443**	C
12	PALESTINE INDUSTRIAL	PIIC	**54,478,129**	
13	PALESTINE SECURITIES EXCHANGE	PSE	**49,900,000**	
14	AL QUDS BANK	QUDS	**49,500,000**	
15	PALESTINE INVESTMENT BANK	PIBC	**46,640,000**	
16	NATIONAL INSURANCE	NIC	**43,200,000**	D
17	THE VEGETABLE OIL INDUSTRIES	VOIC	**36,953,449**	
18	JERUSALEM PHARMACEUTICALS	JPH	**35,826,000**	
19	DAR AL-SHIFA PHARMACEUTICALS	PHARMACARE	**33,427,361**	
20	TRUST INTERNATIONAL INSURANCE	TRUST	**25,000,000**	
21	THE ARAB HOTELS	AHC	**23,867,917**	E
22	PALESTINE COMMERCIAL BANK	PCB	**20,717,979**	
23	GOLDEN WHEAT MILLS	GMC	**19,040,900**	
24	PALESTINE MORTGAGE & HOUSING	PMHC	**19,000,000**	
25	ARAB PALESTINIAN SHOPPING	PLAZA	**16,981,661**	
26	THE RAMALLAH SUMMER RESORTS	RSR	**16,552,751**	F
27	JERUSALEM CIGARETTE	JCC	**15,514,807**	
28	UNION CONSTRUCTION AND	UCI	**14,080,000**	
29	ARAB INVESTORS	ARAB	**12,931,956**	
30	AL-WATANIAH TOWERS	ABRAJ	**11,330,000**	
31	AL-TAKAFUL PALESTINIAN	TIC	**9,180,000**	G
32	GLOBAL UNITED INSURANCE	GUI	**9,033,750**	
33	PALESTINIAN DIST. & LOGISTICS	WASSEL	**7,792,664**	
34	ARAB COMPANY FOR PAINTS	APC	**7,193,229**	
35	PALESTINE INVESTMENT &	PID	**6,895,377**	
36	NATIONAL ALUMINUM AND PROFILE	NAPCO	**6,715,091**	H
37	AHLIEA INSURANCE GROUP	AIG	**6,400,000**	
38	JERUSALEM REAL ESTATE	JREI	**5,900,000**	
39	PALESTINE INSURANCE	PICO	**5,750,000**	
40	AL-AQARIYA TRADING INVESTMENT	AQARIYA	**5,099,911**	
41	NABLUS SURGICAL CENTER	NSC	**4,930,316**	J
42	THE NATIONAL CARTON INDUSTRY	NCI	**4,550,000**	
43	PALESTINE PLASTIC INDUSTRIES	LADAEN	**3,258,109**	
44	AL MASHRIQ INSURANCE	MIC	**2,496,000**	
45	PALAQAR FOR REAL ESTATE DEV.&	PALAQAR	**2,446,765**	
46	AL SHARK ELECTRODE	ELECTRODE	**2,115,656**	K
47	GLOBALCOM	GCOM	**1,007,205**	
48	ARAB REAL ESTATE	ARE	**508,573**	
49	GRAND PARK HOTEL & RESORTS	HOTEL		
50	ALRAFAH MICROFINANCE BANK	**AMB**		

4.4.8 The Descriptive Analysis and Rank of Study Variables among PEX Sectors

Table 21 presents of variables' values of the model for each sector. **Table 22** presents sectors' rank based on variables' values. The rating is classified from 5 (the highest value) to 1 (the smallest value). It is notable that bank and financial services and investment sectors have the highest returns, smallest bid-ask spread, highest number of trades, highest trades values, and highest trades volume among other sectors. The insurance and industry sectors have the highest bid-ask spread, the smallest number of trades, and smallest trades value among other sectors. In addition, Industry sector has the highest volatility and smallest trades value and smallest trades volume.

Table 21:Variables' Values for each sector

#	Sectors	Return	Bid & Ask Spread	Volatility	Number of Trades	Trades Value	Trades Volume
1	**Bank and Financial Services**	0.0016	0.0402	0.0088	14.0	110,562.0	85,384.7
2	**Investment**	0.0004	0.0327	0.0026	21.3	88,386.6	60,579.6
3	**Industry**	0.0001	0.0881	0.0219	4.6	15,491.8	6,386.6
4	**Insurance**	0.0011-	0.0971	0.0060	3.6	52,163.3	37,911.6
5	**Service**	0.0014-	0.0437	0.0055	11.6	80,774.9	24,636.8
	All Sectors	-0.0001	0.0600	0.0098	10.8	68,021.57	40,329.50

Table 22: Sectors' rank based on Variables' Values

Sectors	Return	Bid & Ask Spread	Volatility	Number of Trades	Trades Value	Trades Volume
Bank and Financial Services	5	2	4	4	5	5
Investment	4	1	1	5	4	4
Industry	3	4	5	2	1	1
Insurance	2	5	3	1	2	3
Service	1	3	2	3	3	2

4.5 Results

It is used multiple linear regression analysis via using Stata software to test the model. The relation between cost of equity capital (as dependent variable) and any independent variable is considered if P value (P>|t|) is less than or equal to 0.05 and if P value is more than 0.05 it will not be considered. In addition, if R-squared (R^2) is more than 0.5 the relation will be considered as strong relation otherwise it will be considered a weak relation. Before presenting the study results the researcher believes that it is mandatory to mention the study hypotheses:

$H_{1:}$ There is positive relationship between bid-ask spread and cost of equity capital.

H_2: There is positive relationship between volatility and cost of equity capital.

H_3: There is positive relationship between number of trades and cost of equity capital.

H_4: There is positive relationship between trading volume and cost of equity capital.

H_5: There is positive relationship between trading value and cost of equity capital.

4.5.1 Main Model Results

The main model considers cost of equity capital as dependant variable. Bid-ask spread, volatility, number of trades, trading volume, and trading value are considered as independent variables. As illustrated in **table 23**, the results of main model do not show any relation between cost of equity capital (as dependant variable) and bid-ask spread, volatility, number of trades, trading value, and trading volume (as independent variables) because the P value| of independent variables are more than 0.05.

$$\boldsymbol{Y = BA + V + NT + TVa + TVo} \qquad (6)$$

Whereas**:**

Y = Cost of Equity Capital (Return)
BA = Bid-Ask spread
V = Volatility
NT = Number of trades
TVa= Trading Value
TVo = Trading volume

Table 23: Main Model Results

Y	Coef.	T	P>|t|
Ba	.0146784	1.62	0.105
V	-.0008855	-0.87	0.385
Nt	.0000204	1.14	0.253
Tva	-1.94e-09	-0.78	0.434
Tvo	7.65e-09	1.76	0.078
_cons	-.0001015	-0.23	0.815

R-squared	0.0042

4.5.2 Testing the Multicollinearity of Variables

After testing the main model, Stata software is used to test the correlation or the multicollinearity among the study variables, which is illustrated in **table 24**. It is found that, there is high multicollinearity between trading value (TVa) and trading volume (TVo) with 0,7567. In addition and beside the multicollinearity between number of trades (NT) and trading value with 0,7471, there is another multicollinearity between number of trades and trading volume with 0,6411. Therefore, the study examines three models instead of one. These models are designed to exclude any multicollinearity of variables. We include in each model the variables that do not have correlation more than 0.50.

Table 24: Results of Correlation test

	Y	Ba	V	NT	Tva	Tvo
Y	1.0000					
Ba	0.0656	1.0000				
V	-0.0070	0.1117	1.0000			
Nt	-0.0253	-0.0624	0.0428	1.0000		
Tva	-0.0021	0.0244	0.0563	0.7471	1.0000	
Tvo	0.0082	-0.0766	0.0137	0.6411	0.7567	1.0000

Whereas:

Y = Cost of Equity Capital (Return

BA = Bid-Ask spread

V = Volatility

NT = Number of trades

TVa= Trading Value

TVo = Trading volume

4.5.3 First Model Results:

The first model considers cost of equity capital as dependent variable and bid-ask spread, volatility and number of trades as independent variables. As illustrated in **table 25,** the P value of bid-ask spread is the only significant one among independent variables because its value is 0,001. Which means, the bid-ask spread is the only significant variable that has impact on cost of equity capital. However, this relation cannot be considered because R-squared and adjust R-squared values are very week with 0,0049 and 0,0038 respectively.

$$\boldsymbol{Y = BA + V + NT} \quad (7)$$

Whereas:

Y=Cost of Equity Capital

BA=Bid-Ask Spread

V= Volatility

NT= Number of Trades

Table 25: First Model Results

Y	Coef.	T	P>|t|
Ba	.0143526	3.34	0.001
V	-.000693	-0.68	0.493
Nt	-8.10e-06	-1.05	0.292
_cons	.0002991	0.83	0.409

R-squared	0.0049
Adj R-squared	0.0038

In the meanwhile**,** the first model is tested individually among PEX companies. **Table 29** of appendices presents the results of first model for each listed company in PEX. Taking into consideration significant P values in the first model that are less than or equal to 0.05, there are 5 significant results among Bid-Ask spread, 12 significant results among volatility, and 8 significant results among number of trades. These significant results are presented in **table 30** of appendices. Although the Bid-ask spread is the only significant variable among three models, volatility and number of trades are significant among some companies in the first model, since there is high multicollinearity among Tva, Tvo, and NT, the three models have almost the same results.

4.5.4 Second Model

The Second model considers cost of equity capital as dependent variable and Bid-Ask spread, volatility, and trading value as independent variables. As illustrated in **table 26**, the P value of bid-ask spread is the only significant one among independent variables because its value is 0,001. Which means, the bid-ask spread is the only significant variable that has impact on cost of equity capital. However, this relation cannot be considered because R-squared and adjust R-squared values are very week with 0,0045 and 0,0034 respectively.

$$\boldsymbol{Y = BA + V + TVa} \qquad (8)$$

Whereas:

Y=Cost of Equity Capital

BA=Bid-Ask Spread

V= Volatility

TVa= Trading Value

Table 26: Second Model Results

Y	**Coef.**	**T**	**P>|t|**
Ba	.0146705	3.42	0.001
V	-.0007383	-0.73	0.466
Tva	-1.41e-10	-0.15	0.883
_Cons	.0001669	0.49	0.627

R-squared	0.0045
Adj R-squared	0.0034

4.5.5 Third Model

The third model considers return as dependent variable and Bid-Ask spread, volatility, and trading volume as independent variables. As illustrated in **table 27**, the P value of bid-ask spread is the only significant one among independent variables because its value is 0,001. Which means, the bid-ask spread is the only significant variable that has impact on cost of equity capital. However, this relation cannot be considered because R-squared and adjust R-squared values are very week with 0,0047 and 0,0036 respectively.

$$\boldsymbol{Y = BA + V + TVo} \qquad (9)$$

Whereas:

Y=Cost of Equity Capital

BA=Bid-Ask Spread

V= Volatility

TVo= Trading Volume

Table 27: Third Model Results

Y	**Coef.**	**T**	**P>|t|**
Ba	.0148938	3.46	0.001
V	-.0007621	-0.75	0.451
Tvo	1.59e-09	0.69	0.488
_cons	.0000845	0.24	0.810

R-squared	0.0047
Adj R-squared	0.0036

Chapter Five: Conclusions and Recommendations

5.1 Conclusions

5.2 Recommendations

Chapter Five

Conclusions and Recommendations

5.1 Conclusions

This study examines the impact of information asymmetry on the COEC. Multiple linear regression analysis is used to test the model. The study shows interesting results. Initially, the numbers of trades, trading volume, and trading value do not have impact on the COEC due to high multicollinearity among them. Secondly, the first model shows that there is significant relationship between bid-ask spread and COEC in PEX but it cannot be considered due to the weak of R^2. Additionally, there is no relationship between volatility and COEC. Also, there is no relationship between number of trades and COEC. In the meanwhile**,** the first model is tested individually among PEX companies. The results show that there are 5 significant results among bid-ask spread, 12 significant results among volatility, and 8 significant results among number of trades. However, the second and third model show that the bid-ask spread is the only significant variable which have impact on COEC but it cannot be considered due to weak R^2. Furthermore, the volatility and trading value does not have impact on COEC in the second model. Similarly, the volatility and trading volume do not have impact on COEC in the third model.

So, the results of PEX as inefficient market, (PEX is considered inefficient market based on studies like Alkhatib and Harasheh (2014), Abushammala (2011), Shaheen (2010), and Awad and Daraghma (2009)), are not consistent with results of studies on developed (efficient) or emerging markets like (He et al., 2013), Lambert et al. (2012), Armstrong et al. (2011), Verdi (2005), Botosan et al. (2004), Easley and O'hara (2004), Leuz and Verrecchia (2004), Easley et al. (2002), and Botosan (1997). In addition, the results show that there is high information asymmetry in PEX and it lacks liquidity. Furthermore, the descriptive analysis (especially **table 22**) shows interesting data, (which is homogeneous with studies like Yohn (1997), McNichols and Trueman (1994), Senteney (1991), Hamilton (1978), Benston and Hagerman (1974), Tinic and West (1972), and Demsetz (1968)), that needs to be investigated in future studies.

5.2 Recommendations

It is important to investigate the relationship between the information asymmetry and cost of equity of capital. This helps the decision makers to evaluate the alternative investments or assets. But firstly the level of market efficiency should be acceptable to implement specific measures and models that require minimum levels of bid-ask spread, liquidity, depth, volatility, trading volume, strict to trading rules, and commitment to international disclosures rules in stock market. Consequently, the results of this research recommend some tips to PEX, academic researchers, and investors. **Firstly, PEX**:

- Working on attracting new institutional investments and investors to improve diversity of investments and broaden the base of preferences.
- Committing with fixed date of disclosure to enhance investment decisions, protect investors from insider information, and decrease the effect of market rumors. This leads to the increase of the overall market efficiency.
- Improving investment culture and analyzing process for traders and brokers via educating, training, and increasing the public awareness.
- Improving the connection system to ensure of delivering all necessary information to the investor quickly.
- Licensing of specialized Mutual funds to protect the small and uninformed investors.
- Improving the financial press that discusses the listed stocks on PEX and related information.

Secondly, academic researchers:

- Enhancing the efforts of studying suitable strategies to help investors in making rational decisions.
- Spreading the financial and investing knowledge to the academic students.
- Working on providing experts to provide financial analysis which clarifies fundamental information to the investors.

Thirdly, Investors:

- Trading based on fundamental (financial) information in order to improve the rationality of the decision making.
- Trying to trade with special type of stocks (some sectors) and follow its fundamental information to become specialist with it.

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Appendices

Table 28: Listed companies in PEX

#	Company's Name	Symbol	Sector
1	AL QUDS BANK	QUDS	Banking & Financial Services Sector
2	ALRAFAH MICROFINANCE BANK	AMB	
3	ARAB ISLAMIC BANK	AIB	
4	BANK OF PALESTINE	BOP	
5	PALESTINE COMMERCIAL BANK	PCB	
6	PALESTINE INVESTMENT BANK	PIBC	
7	PALESTINE ISLAMIC BANK	ISBK	
8	PALESTINE MORTGAGE & HOUSING	PMHC	
9	PALESTINE SECURITIES EXCHANGE	PSE	
10	THE NATIONAL BANK	TNB	
11	AL SHARK ELECTRODE	ELECTRODE	Industry Sector
12	ARAB COMPANY FOR PAINTS PRODUCTS	APC	
13	BIRZEIT PHARMACEUTICALS	BPC	
14	DAR AL-SHIFA PHARMACEUTICALS	PHARMACARE	
15	GOLDEN WHEAT MILLS	GMC	
16	JERUSALEM CIGARETTE	JCC	
17	JERUSALEM PHARMACEUTICALS	JPH	
18	NATIONAL ALUMINUM AND PROFILE	NAPCO	
19	PALESTINE PLASTIC INDUSTRIES	LADAEN	
20	PALESTINE POULTRY	AZIZA	
21	THE NATIONAL CARTON INDUSTRY	NCI	
22	THE VEGETABLE OIL INDUSTRIES	VOIC	
23	AHLIEA INSURANCE GROUP	AIG	Insurance Sector
24	AL MASHRIQ INSURANCE	MIC	
25	AL-TAKAFUL PALESTINIAN INSURANCE	TIC	
26	GLOBAL UNITED INSURANCE	GUI	
27	NATIONAL INSURANCE	NIC	
28	PALESTINE INSURANCE	PICO	
29	TRUST INTERNATIONAL INSURANCE	TRUST	
30	AL-AQARIYA TRADING INVESTMENT	AQARIYA	Investment Sector
31	ARAB INVESTORS	ARAB	
32	JERUSALEM REAL ESTATE INVESTMENT	JREI	
33	PALESTINE DEVELOPMENT & INVESTMENT	PADICO	
34	PALESTINE INDUSTRIAL INVESTMENT	PIIC	
35	PALESTINE INVESTMENT & DEVELOPMENT	PID	
36	PALESTINE REAL ESTATE INVESTMENT	PRICO	
37	UNION CONSTRUCTION AND INVESTMENT	UCI	
38	AL-WATANIAH TOWERS	ABRAJ	Service Sector
39	ARAB PALESTINIAN SHOPPING CENTERS	PLAZA	
40	ARAB REAL ESTATE ESTABLISHMENT	ARE	
41	GLOBALCOM TELECOMMUNICATIONS	GCOM	
42	GRAND PARK HOTEL & RESORTs	HOTEL	
43	NABLUS SURGICAL CENTER	NSC	
44	PALAQAR FOR REAL ESTATE DEV.&	PALAQAR	
45	PALESTINE ELECTRIC	PEC	
46	PALESTINE TELECOMMUNICATIONS	PALTEL	
47	PALESTINIAN DIST. & LOGISTICS SERVICES	WASSEL	
48	THE ARAB HOTELS	AHC	
49	THE RAMALLAH SUMMER RESORTS	RSR	
50	WATANIYA PALESTINE MOBILE TELECOMM.	WATANIYA	

Appendix: Three Models Regression Results as illustrated in Stata view

First Model:

1. reg y ba v nt

Source	SS	df	MS	Number of obs =	2605
				F(3, 2601) =	4.30
Model	.002272854	3	.000757618	Prob > F =	0.0049
Residual	.457928073	2601	.000176058	R-squared =	0.0049
				Adj R-squared =	0.0038
Total	.460200927	2604	.000176728	Root MSE =	.01327

Y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.0143526	.0043007	3.34	0.001	.0059195	.0227857
v	-.000693	.0010117	-0.68	0.493	-.0026768	.0012908
nt	-8.10e-06	7.69e-06	-1.05	0.292	-.0000232	6.98e-06
_cons	.0002991	.0003619	0.83	0.409	-.0004106	.0010088

Second Model:

2. reg y ba v tva

Source	SS	df	MS	Number of obs = 2605
				F(3, 2601) = 3.94
Model	.00208146	3	.00069382	Prob > F = 0.0081
Residual	.458119466	2601	.000176132	R-squared = 0.0045
				Adj R-squared= 0.0034
Total	.460200927	2604	.000176728	Root MSE = .01327

Y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
Ba	.0146705	.0042924	3.42	0.001	.0062536	.0230874
V	-.0007383	.0010121	-0.73	0.466	-.0027229	.0012463
Tva	-1.41e-10	9.54e-10	-0.15	0.883	-2.01e-09	1.73e-09
_Cons	.0001669	.0003433	0.49	0.627	-.0005063	.0008401

Third Model

3. reg y ba v tvo

Source	SS	df	MS	Number of obs =	2605
				F(3, 2601) =	4.09
Model	.002162467	3	.000720822	Prob > F =	0.0066
Residual	.458038459	2601	.000176101	R-squared =	0.0047
				Adj R-squared=	0.0036
Total	.460200927	2604	.000176728	Root MSE =	.01327

Y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.0148938	.0043046	3.46	0.001	.0064529	.0233346
v	-.0007621	.0010108	-0.75	0.451	-.0027441	.0012199
tvo |	1.59e-09	2.29e-09	0.69	0.488	-2.90e-09	6.07e-09
_cons	.0000845	.0003512	0.24	0.810	-.0006042	.0007731

Appendix: Individual Results of First Model as illustrated in stata view

1. id = 1

Source	SS	df	MS	Number of obs = 21
				F(3, 17) = 1.68
Model	.002508893	3	.000836298	Prob > F = 0.2094
Residual	.008474516	17	.000498501	R-squared = 0.2284
				Adj R-squared = 0.0923
Total	.010983409	20	.00054917	Root MSE = .02233

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.1866018	.304757	0.61	0.548	-.4563792	.8295828
v	7.050383	4.22095	1.67	0.113	-1.855044	15.95581
nt	-.0077565	.005719	-1.36	0.193	-.0198225	.0043095
_cons	-.0001315	.0196353	-0.01	0.995	-.0415585	.0412954

2. id = 2

Source	SS	df	MS	Number of obs = 67
				F(3, 63) = 4.10
Model	.007280904	3	.002426968	Prob > F = 0.0100
Residual	.03725114	63	.000591288	R-squared = 0.1635
				Adj R-squared = 0.1237
Total	.044532045	66	.000674728	Root MSE = .02432

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.136487	.184631	0.74	0.463	-.2324687	.5054427
v	3.872749	1.984585	1.95	0.055	-.0931276	7.838626
nt	.0005734	.0006804	0.84	0.403	-.0007863	.0019331
_cons	-.0157403	.0084764	-1.86	0.068	-.032679	.0011983

3. id = 3

Source	SS	df	MS	Number of obs = 96
				F(3, 92) = 2.78
Model	.00018228	3	.00006076	Prob > F = 0.0457
Residual	.002014175	92	.000021893	R-squared = 0.0830
				Adj R-squared = 0.0531
Total	.002196455	95	.000023121	Root MSE = .00468

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	-.0322124	.0380312	-0.85	0.399	-.1077458	.0433209
v	.3923887	.1686899	2.33	0.022	.0573559	.7274214
nt	-.0000156	.0000286	-0.54	0.587	-.0000723	.0000412
_cons	.0007719	.000966	0.80	0.426	-.0011466	.0026904

4. id = 4

Source	SS	df	MS	Number of obs =	96
				F(3, 92) =	5.79
Model	.000700656	3	.000233552	Prob > F =	0.0011
Residual	.00371393	92	.000040369	R-squared =	0.1587
				Adj R-squared =	0.1313
Total	.004414587	95	.000046469	Root MSE =	.00635

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.0309843	.0075119	4.12	0.000	.016065	.0459035
v	-.0613477	.0243431	-2.52	0.013	-.1096951	-.0130002
nt	.0000908	.0000963	0.94	0.348	-.0001005	.0002822
_cons	-.0023625	.0011476	-2.06	0.042	-.0046417	-.0000834

5. id = 5

Source	SS	df	MS	Number of obs =	68
				F(3, 64) =	20.03
Model	.000818834	3	.000272945	Prob > F =	0.0000
Residual	.000872099	64	.000013627	R-squared =	0.4842
				Adj R-squared =	0.4601
Total	.001690933	67	.000025238	Root MSE =	.00369

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	-.0139645	.1446749	-0.10	0.923	-.3029859	.2750568
v	1.693454	.3837271	4.41	0.000	.9268714	2.460037
nt	-.0000561	8.47e-06	-6.62	0.000	-.000073	-.0000392
_cons	-.0000905	.0023678	-0.04	0.970	-.0048207	.0046397

6. id = 6

Source	SS	df	MS	Number of obs =	16
				F(3, 12) =	0.87
Model	.002991312	3	.000997104	Prob > F =	0.4856
Residual	.013825527	12	.001152127	R-squared =	0.1779
				Adj R-squared =	-0.0277
Total	.016816839	15	.001121123	Root MSE =	.03394

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	-.0298234	.2959967	-0.10	0.921	-.6747448	.615098
v	2.568546	2.251091	1.14	0.276	-2.33616	7.473252
nt	.0060023	.0213769	0.28	0.784	-.0405741	.0525786
_cons	-.0092437	.0355349	-0.26	0.799	-.0866675	.0681802

7. id = 7

Source	SS	df	MS	Number of obs = 28
				F(3, 24) = 2.80
Model	.002978568	3	.000992856	Prob > F = 0.0613
Residual	.008495244	24	.000353968	R-squared = 0.2596
				Adj R-squared = 0.1670
Total	.011473812	27	.000424956	Root MSE = .01881

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.7230251	.5511306	1.31	0.202	-.4144526	1.860503
v	-.9139287	1.244149	-0.73	0.470	-3.481725	1.653868
nt	.0045975	.0018107	2.54	0.018	.0008604	.0083346
_cons	-.0461466	.0200373	-2.30	0.030	-.0875016	-.0047916

8. id = 8

Source	SS	df	MS	Number of obs = 41
				F(3, 37) = 2.60
Model	.002505441	3	.000835147	Prob > F = 0.0670
Residual	.011906425	37	.000321795	R-squared = 0.1738
				Adj R-squared = 0.1069
Total	.014411866	40	.000360297	Root MSE = .01794

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	-.1671318	.1061781	-1.57	0.124	-.3822691	.0480055
v	2.63313	1.573905	1.67	0.103	-.5559045	5.822165
nt	.0011467	.0023498	0.49	0.628	-.0036145	.0059079
_cons	.001907	.0080674	0.24	0.814	-.0144391	.0182531

9. id = 9

Source	SS	df	MS	Number of obs = 71
				F(3, 67) = 1.27
Model	.001961784	3	.000653928	Prob > F = 0.2927
Residual	.034568101	67	.000515942	R-squared = 0.0537
				Adj R-squared = 0.0113
Total	.036529885	70	.000521855	Root MSE = .02271

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.0343346	.1831017	0.19	0.852	-.331138	.3998071
v	2.165712	1.152899	1.88	0.065	-.1354833	4.466908
nt	-.002179	.0026637	-0.82	0.416	-.0074957	.0031377
_cons	.0001172	.00848	0.01	0.989	-.0168091	.0170434

10. id = 10

Source	SS	df	MS	Number of obs =	71
				F(3, 67) =	1.74
Model	.003098859	3	.001032953	Prob > F =	0.1678
Residual	.039845548	67	.00059471	R-squared =	0.0722
				Adj R-squared =	0.0306
Total	.042944407	70	.000613492	Root MSE =	.02439

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.0990659	.0636737	1.56	0.124	-.0280273	.2261591
v	-.0106445	.2125575	-0.05	0.960	-.4349111	.4136221
nt	.0020395	.0013889	1.47	0.147	-.0007328	.0048118
_cons	-.0089472	.0077612	-1.15	0.253	-.0244387	.0065443

11. id = 11

Source	SS	df	MS	Number of obs =	96
				F(3, 92) =	23.13
Model	.001456423	3	.000485474	Prob > F =	0.0000
Residual	.001931241	92	.000020992	R-squared =	0.4299
				Adj R-squared =	0.4113
Total	.003387664	95	.00003566	Root MSE =	.00458

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.0096627	.0211335	0.46	0.649	-.0323103	.0516357
v	-.0235297	.0029604	-7.95	0.000	-.0294093	-.0176502
nt	.0000265	9.26e-06	2.86	0.005	8.10e-06	.0000449
_cons	-.0008886	.0009046	-0.98	0.329	-.0026853	.000908

12. id = 12

Source	SS	df	MS	Number of obs =	96
				F(3, 92) =	1.95
Model	.000248785	3	.000082928	Prob > F =	0.1263
Residual	.003902922	92	.000042423	R-squared =	0.0599
				Adj R-squared =	0.0293
Total	.004151707	95	.000043702	Root MSE =	.00651

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	-.0243813	.0241097	-1.01	0.315	-.0722652	.0235026
v	.0490997	.0233549	2.10	0.038	.0027149	.0954845
nt	-.0001336	.0001495	-0.89	0.374	-.0004306	.0001633
_cons	.0022361	.0020616	1.08	0.281	-.0018583	.0063306

13. id = 13

Source	SS	df	MS	Number of obs =	4
				F(3, 0) =	.
Model	.001893741	3	.000631247	Prob > F =	.
Residual	0	0	.	R-squared =	1.0000
				Adj R-squared =	.
Total	.001893741	3	.000631247	Root MSE =	0

y	Coef.	Std. Err.	T	P>|t|	[95% Conf. Interval]	
ba	-27.12246	.	.	.	.	
v	11.04995	.	.	.	.	
nt	.196254	.	.	.	.	
_cons	2.38038	.	.	.	.	

14. id = 14

Source	SS	df	MS	Number of obs =	49
				F(3, 45) =	4.43
Model	.000703987	3	.000234662	Prob > F =	0.0082
Residual	.002382561	45	.000052946	R-squared =	0.2281
				Adj R-squared =	0.1766
Total	.003086548	48	.000064303	Root MSE =	.00728

y	Coef.	Std. Err.	T	P>|t|	[95% Conf. Interval]	
ba	.1759147	.2292686	0.77	0.447	-.2858559	.6376853
v	-.6098454	.3238768	-1.88	0.066	-1.262167	.042476
nt	.0003505	.0000981	3.57	0.001	.0001528	.0005482
_cons	-.0095514	.0041055	-2.33	0.025	-.0178203	-.0012825

15. id = 15

Source	SS	df	MS	Number of obs =	92
				F(3, 88) =	1.83
Model	.000218125	3	.000072708	Prob > F =	0.1482
Residual	.003503829	88	.000039816	R-squared =	0.0586
				Adj R-squared =	0.0265
Total	.003721954	91	.000040901	Root MSE =	.00631

y	Coef.	Std. Err.	T	P>|t|	[95% Conf. Interval]	
ba	-.1572591	.0828561	-1.90	0.061	-.3219182	.0074
v	.573692	.3637639	1.58	0.118	-.1492124	1.296596
nt	-.0000465	.0001421	-0.33	0.744	-.0003288	.0002359
_cons	.0040545	.0022985	1.76	0.081	-.0005133	.0086223

16. id = 16

Source	SS	df	MS	Number of obs = 21
Model	.000419149	3	.000139716	F(3, 17) = 0.41
Residual	.005827482	17	.000342793	Prob > F = 0.7495
Total	.006246631	20	.000312332	R-squared = 0.0671
				Adj R-squared = -0.0975
				Root MSE = .01851

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.0362349	.2496236	0.15	0.886	-.4904249	.5628947
v	1.767832	1.599683	1.11	0.285	-1.607204	5.142868
nt	-.0002394	.0034255	-0.07	0.945	-.0074665	.0069877
_cons	.0049874	.0186971	0.27	0.793	-.0344602	.0444349

17. id = 17

no observations

18. id = 18

Source	SS	df	MS	Number of obs = 54
Model	.000290952	3	.000096984	F(3, 50) = 9.17
Residual	.000529013	50	.00001058	Prob > F = 0.0001
Total	.000819965	53	.000015471	R-squared = 0.3548
				Adj R-squared = 0.3161
				Root MSE = .00325

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.2272846	.0917872	2.48	0.017	.0429245	.4116447
v	1.150081	.426329	2.70	0.009	.2937742	2.006388
nt	.0001515	.0000807	1.88	0.066	-.0000105	.0003135
_cons	-.004681	.0018815	-2.49	0.016	-.0084601	-.0009018

19. id = 19

Source	SS	df	MS	Number of obs = 96
Model	.000029568	3	9.8561e-06	F(3, 92) = 0.17
Residual	.005201323	92	.000056536	Prob > F = 0.9135
Total	.005230891	95	.000055062	R-squared = 0.0057
				Adj R-squared = -0.0268
				Root MSE = .00752

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	-.0000441	.0149933	-0.00	0.998	-.0298221	.0297339
v	.0405301	.0831469	0.49	0.627	-.1246067	.2056669
nt	-.000204	.0002993	-0.68	0.497	-.0007985	.0003904
_cons	.001942	.0023326	0.83	0.407	-.0026908	.0065747

20. id = 20

Source	SS	df	MS	Number of obs = 92
Model	.000141039	3	.000047013	F(3, 88) = 0.38
Residual	.01087278	88	.000123554	Prob > F = 0.7673
Total	.011013819	91	.000121031	R-squared = 0.0128
				Adj R-squared = -0.0208
				Root MSE = .01112

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.0097863	.0122725	0.80	0.427	-.0146028	.0341753
v	-.0000366	.0009075	-0.04	0.968	-.00184	.0017668
nt	-.0002364	.0004091	-0.58	0.565	-.0010494	.0005766
_cons	.003919	.0030964	1.27	0.209	-.0022345	.0100726

21. id = 21

Source	SS	df	MS	Number of obs = 4
Model	.005906531	3	.001968844	F(3, 0) = .
Residual	0	0	.	Prob > F = .
Total	.005906531	3	.001968844	R-squared = 1.0000
				Adj R-squared = .
				Root MSE = 0

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.9035301	.	.	.	.	
v	-167.9772	.	.	.	.	
nt	-.0537505	.	.	.	.	
_cons	.1417785	.	.	.	.	

22. id = 22

Source	SS	df	MS	Number of obs = 76
Model	.000347293	3	.000115764	F(3, 72) = 0.45
Residual	.018459586	72	.000256383	Prob > F = 0.7170
Total	.01880688	75	.000250758	R-squared = 0.0185
				Adj R-squared = -0.0224
				Root MSE = .01601

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	-.0032892	.05242	-0.06	0.950	-.1077867	.1012082
v	-.6140514	2.015239	-0.30	0.761	-4.631357	3.403254
nt	.001243	.0010785	1.15	0.253	-.000907	.003393
_cons	-.0051436	.0039399	-1.31	0.196	-.0129976	.0027103

23. id = 23

Source	SS	df	MS	Number of obs =	24
				F(3, 20) =	1.30
Model	.001715016	3	.000571672	Prob > F =	0.3009
Residual	.008771945	20	.000438597	R-squared =	0.1635
				Adj R-squared =	0.0381
Total	.010486962	23	.000455955	Root MSE =	.02094

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	-.8188222	.4834585	-1.69	0.106	-1.827299	.1896546
v	-.5039029	10.16198	-0.05	0.961	-21.70143	20.69362
nt	-.0008677	.0060724	-0.14	0.888	-.0135344	.0117991
_cons	.0289702	.0214714	1.35	0.192	-.0158183	.0737588

24. id = 24

Source	SS	df	MS	Number of obs =	10
				F(3, 6) =	1.68
Model	.004784572	3	.001594857	Prob > F =	0.2695
Residual	.005700564	6	.000950094	R-squared =	0.4563
				Adj R-squared =	0.1845
Total	.010485135	9	.001165015	Root MSE =	.03082

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	2.016494	.9716897	2.08	0.083	-.361145	4.394133
v	5.285088	6.878215	0.77	0.471	-11.5453	22.11547
nt	.0027894	.0108609	0.26	0.806	-.0237863	.0293651
_cons	-.1097834	.0534715	-2.05	0.086	-.2406234	.0210566

25. id = 25

Source	SS	df	MS	Number of obs =	84
				F(3, 80) =	3.93
Model	.000744892	3	.000248297	Prob > F =	0.0114
Residual	.00506068	80	.000063259	R-squared =	0.1283
				Adj R-squared =	0.0956
Total	.005805573	83	.000069947	Root MSE =	.00795

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.1818621	.1390369	1.31	0.195	-.0948302	.4585544
v	3.014689	1.288027	2.34	0.022	.4514334	5.577944
nt	.0000228	.00022	0.10	0.918	-.000415	.0004605
_cons	-.0034972	.0033367	-1.05	0.298	-.0101374	.0031431

26. id = 26

Source	SS	df	MS	Number of obs =	69
				F(3, 65) =	2.70
Model	.001416511	3	.00047217	Prob > F =	0.0525
Residual	.011346211	65	.000174557	R-squared =	0.1110
				Adj R-squared =	0.0700
Total	.012762722	68	.000187687	Root MSE =	.01321

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.1127327	.0396555	2.84	0.006	.0335351	.1919303
v	-.0303553	.0450161	-0.67	0.502	-.1202588	.0595481
nt	-.0003173	.00147	-0.22	0.830	-.0032532	.0026185
_cons	-.0104598	.0067423	-1.55	0.126	-.0239251	.0030056

27. id = 27

Source	SS	df	MS	Number of obs =	26
				F(3, 22) =	0.38
Model	.0004974	3	.0001658	Prob > F =	0.7678
Residual	.009578527	22	.000435388	R-squared =	0.0494
				Adj R-squared =	-0.0803
Total	.010075927	25	.000403037	Root MSE =	.02087

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.0315578	.3320453	0.10	0.925	-.6570621	.7201777
v	1.783283	3.498159	0.51	0.615	-5.471455	9.038021
nt	.0024536	.0072968	0.34	0.740	-.012679	.0175862
_cons	-.0067324	.0189951	-0.35	0.726	-.0461259	.0326612

28. id = 28

Source	SS	df	MS	Number of obs =	96
				F(3, 92) =	7.38
Model	.000430622	3	.000143541	Prob > F =	0.0002
Residual	.001790209	92	.000019459	R-squared =	0.1939
				Adj R-squared =	0.1676
Total	.002220831	95	.000023377	Root MSE =	.00441

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	-.002125	.0093763	-0.23	0.821	-.0207471	.0164972
v	-.0657026	.0153968	-4.27	0.000	-.096282	-.0351232
nt	.0000126	6.22e-06	2.02	0.046	2.33e-07	.0000249
_cons	-.0012647	.0007357	-1.72	0.089	-.0027259	.0001965

29. id = 29

no observations

30. id = 30

Source	SS	df	MS	Number of obs =	95
				F(3, 91) =	18.52
Model	.000661336	3	.000220445	Prob > F =	0.0000
Residual	.001083473	91	.000011906	R-squared =	0.3790
				Adj R-squared =	0.3586
Total	.001744808	94	.000018562	Root MSE =	.00345

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	-.0348266	.0127386	-2.73	0.008	-.0601303	-.0095229
v	-.0113662	.0045668	-2.49	0.015	-.0204376	-.0022947
nt	.000033	7.49e-06	4.41	0.000	.0000181	.0000479
_cons	-.0005349	.0005888	-0.91	0.366	-.0017046	.0006347

31. id = 31

Source	SS	df	MS	Number of obs =	61
				F(3, 57) =	1.11
Model	.000644484	3	.000214828	Prob > F =	0.3527
Residual	.011032816	57	.000193558	R-squared =	0.0552
				Adj R-squared =	0.0055
Total	.0116773	60	.000194622	Root MSE =	.01391

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.1503003	.2180476	0.69	0.493	-.2863325	.586933
v	2.700573	2.970466	0.91	0.367	-3.247682	8.648828
nt	.0011272	.0007998	1.41	0.164	-.0004744	.0027288
_cons	-.0091727	.009448	-0.97	0.336	-.028092	.0097466

32. id = 32

Source	SS	df	MS	Number of obs =	92
				F(3, 88) =	3.68
Model	.000078588	3	.000026196	Prob > F =	0.0151
Residual	.000626787	88	7.1226e-06	R-squared =	0.1114
				Adj R-squared =	0.0811
Total	.000705375	91	7.7514e-06	Root MSE =	.00267

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.0198088	.0332705	0.60	0.553	-.0463094	.0859269
v	-.6828326	.3048062	-2.24	0.028	-1.288571	-.0770942
nt	-2.65e-06	.0000381	-0.07	0.945	-.0000783	.000073
_cons	.00022	.0006277	0.35	0.727	-.0010274	.0014674

33. id = 33

Source	SS	df	MS	Number of obs = 7
				F(3, 3) = 0.08
Model	.000031703	3	.000010568	Prob > F = 0.9690
Residual	.000419254	3	.000139751	R-squared = 0.0703
				Adj R-squared = -0.8594
Total	.000450957	6	.000075159	Root MSE = .01182

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.2096534	.4434198	0.47	0.669	-1.201506	1.620813
v	-.3819181	.9165803	-0.42	0.705	-3.298886	2.535049
nt	.0035047	.0075888	0.46	0.676	-.0206462	.0276557
_cons	-.0482306	.0899839	-0.54	0.629	-.3345997	.2381385

34. id = 34

Source	SS	df	MS	Number of obs = 72
				F(3, 68) = 0.72
Model	.000515338	3	.000171779	Prob > F = 0.5410
Residual	.016129654	68	.000237201	R-squared = 0.0310
				Adj R-squared = -0.0118
Total	.016644993	71	.000234437	Root MSE = .0154

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.0037163	.0277163	0.13	0.894	-.0515907	.0590233
v	-.0038352	.0100837	-0.38	0.705	-.023957	.0162865
nt	.0010152	.0007042	1.44	0.154	-.00039	.0024204
_cons	-.004126	.0037725	-1.09	0.278	-.0116538	.0034019

35. id = 35

note: v omitted because of collinearity

Source	SS	df	MS	Number of obs = 3
				F(2, 0) = .
Model	.002029561	2	.001014781	Prob > F = .
Residual	0	0	.	R-squared = 1.0000
				Adj R-squared = .
Total	.002029561	2	.001014781	Root MSE = 0

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	-.597291	.	.	.	.	.
v	0 (omitted)					
nt	.023738	.	.	.	.	.
_cons	-.0026439	.	.	.	.	.

36. id = 36

Source	SS	df	MS	Number of obs = 54
				F(3, 50) = 0.71
Model	.000513199	3	.000171066	Prob > F = 0.5478
Residual	.011967663	50	.000239353	R-squared = 0.0411
				Adj R-squared = -0.0164
Total	.012480862	53	.000235488	Root MSE = .01547

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	-.018414	.1148823	-0.16	0.873	-.2491619	.2123339
v	2.147026	4.057928	0.53	0.599	-6.003562	10.29761
nt	-.0030644	.0021417	-1.43	0.159	-.0073661	.0012372
_cons	.0115095	.0074551	1.54	0.129	-.0034645	.0264835

37. id = 37

Source	SS	df	MS	Number of obs = 96
				F(3, 92) = 2.03
Model	.000284354	3	.000094785	Prob > F = 0.1149
Residual	.004291768	92	.00004665	R-squared = 0.0621
				Adj R-squared = 0.0316
Total	.004576122	95	.00004817	Root MSE = .00683

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.008978	.0206613	0.43	0.665	-.0320572	.0500131
v	-.2347354	.1145786	-2.05	0.043	-.4622984	-.0071725
nt	.000106	.0000469	2.26	0.026	.0000129	.0001991
_cons	-.0006391	.0011551	-0.55	0.581	-.0029333	.0016551

38. id = 38

Source	SS	df	MS	Number of obs = 50
				F(3, 46) = 0.43
Model	.00052296	3	.00017432	Prob > F = 0.7291
Residual	.018438663	46	.00040084	R-squared = 0.0276
				Adj R-squared = -0.0358
Total	.018961623	49	.000386972	Root MSE = .02002

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	-.0619927	.2402617	-0.26	0.798	-.5456145	.4216291
v	-1.804863	2.048102	-0.88	0.383	-5.927478	2.317752
nt	-.0008304	.0012998	-0.64	0.526	-.0034468	.001786
_cons	.0098461	.010574	0.93	0.357	-.0114382	.0311305

39. id = 39

insufficient observations

40. id = 40

Source	SS	df	MS	Number of obs =	96
				F(3, 92) =	0.76
Model	.000053011	3	.00001767	Prob > F =	0.5195
Residual	.00213955	92	.000023256	R-squared =	0.0242
				Adj R-squared =	-0.0076
Total	.00219256	95	.00002308	Root MSE =	.00482

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.0126305	.0493649	0.26	0.799	-.0854125	.1106735
v	-.1734616	.223579	-0.78	0.440	-.6175088	.2705857
nt	.0000563	.0000374	1.51	0.136	-.000018	.0001305
_cons	-.0008162	.0011876	-0.69	0.494	-.0031749	.0015425

41. id = 41

no observations

42. id = 42

Source	SS	df	MS	Number of obs =	91
				F(3, 87) =	1.52
Model	.000415546	3	.000138515	Prob > F =	0.2144
Residual	.007915574	87	.000090984	R-squared =	0.0499
				Adj R-squared =	0.0171
Total	.00833112	90	.000092568	Root MSE =	.00954

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.0229644	.0293019	0.78	0.435	-.0352763	.0812052
v	-.4099634	.2225124	-1.84	0.069	-.8522309	.0323041
nt	.0002706	.000178	1.52	0.132	-.0000832	.0006244
_cons	-.0010447	.0019233	-0.54	0.588	-.0048674	.002778

43. id = 43

Source	SS	df	MS	Number of obs =	18
				F(3, 14) =	0.61
Model	.00100821	3	.00033607	Prob > F =	0.6204
Residual	.007732111	14	.000552294	R-squared =	0.1154
				Adj R-squared =	-0.0742
Total	.008740321	17	.000514137	Root MSE =	.0235

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	-.066216	.1182756	-0.56	0.584	-.319892	.18746
v	.5902673	.4909995	1.20	0.249	-.4628219	1.643356
nt	.0013696	.0055536	0.25	0.809	-.0105417	.0132808
_cons	.0108128	.0267341	0.40	0.692	-.0465262	.0681518

44. id = 44

Source	SS	df	MS	Number of obs = 20
				F(3, 16) = 0.68
Model	.000323646	3	.000107882	Prob > F = 0.5757
Residual	.002529698	16	.000158106	R-squared = 0.1134
				Adj R-squared = -0.0528
Total	.002853344	19	.000150176	Root MSE = .01257

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.3830234	.2745062	1.40	0.182	-.1989038	.9649506
v	1.277684	10.38309	0.12	0.904	-20.73349	23.28885
nt	-3.59e-06	.001132	-0.00	0.998	-.0024034	.0023962
_cons	-.0091794	.0116463	-0.79	0.442	-.0338683	.0155096

45. id = 45

Source	SS	df	MS	Number of obs = 13
				F(3, 9) = 10.65
Model	.000093039	3	.000031013	Prob > F = 0.0026
Residual	.000026215	9	2.9128e-06	R-squared = 0.7802
				Adj R-squared = 0.7069
Total	.000119254	12	9.9379e-06	Root MSE = .00171

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	-.0003488	.1236315	-0.00	0.998	-.2800227	.279325
v	1.904743	1.234099	1.54	0.157	-.8869831	4.696469
nt	.0001537	.000315	0.49	0.637	-.0005588	.0008663
_cons	-.0011172	.0034196	-0.33	0.751	-.0088529	.0066184

46. id = 46

Source	SS	df	MS	Number of obs = 18
				F(3, 14) = 0.64
Model	.001199829	3	.000399943	Prob > F = 0.6032
Residual	.008783175	14	.00062737	R-squared = 0.1202
				Adj R-squared = -0.0683
Total	.009983004	17	.000587236	Root MSE = .02505

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	-.0883212	.1011025	-0.87	0.397	-.3051645	.1285221
v	-.2008767	.2863164	-0.70	0.494	-.8149642	.4132108
nt	.002792	.0040267	0.69	0.499	-.0058445	.0114285
_cons	.0099886	.0250696	0.40	0.696	-.0437802	.0637574

47. id = 47

Source	SS	df	MS	Number of obs = 82
				F(3, 78) = 1.81
Model	.000106734	3	.000035578	Prob > F = 0.1527
Residual	.001535474	78	.000019686	R-squared = 0.0650
				Adj R-squared = 0.0290
Total	.001642208	81	.000020274	Root MSE = .00444

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.3194009	.1556199	2.05	0.043	.0095855	.6292162
v	.2709869	.6930431	0.39	0.697	-1.108756	1.65073
nt	-.0000265	.0000308	-0.86	0.393	-.0000879	.0000349
_cons	-.0047034	.002401	-1.96	0.054	-.0094834	.0000767

48. id = 48

Source	SS	df	MS	Number of obs = 59
				F(3, 55) = 0.58
Model	.001029345	3	.000343115	Prob > F = 0.6283
Residual	.032338112	55	.000587966	R-squared = 0.0308
				Adj R-squared = -0.0220
Total	.033367457	58	.000575301	Root MSE = .02425

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	-.041971	.0404057	-1.04	0.303	-.1229459	.0390039
v	.182002	.2077734	0.88	0.385	-.2343852	.5983891
nt	-.0019408	.0018696	-1.04	0.304	-.0056875	.0018059
_cons	.0167919	.008888	1.89	0.064	-.0010201	.0346038

49. id = 49

Source	SS	df	MS	Number of obs = 77
				F(3, 73) = 4.99
Model	.00018076	3	.000060253	Prob > F = 0.0033
Residual	.000880968	73	.000012068	R-squared = 0.1703
				Adj R-squared = 0.1362
Total	.001061729	76	.00001397	Root MSE = .00347

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.0419126	.0534281	0.78	0.435	-.0645694	.1483947
v	.5602244	.4800441	1.17	0.247	-.3965022	1.516951
nt	.0001609	.0000645	2.49	0.015	.0000323	.0002895
_cons	-.00199	.0013699	-1.45	0.151	-.0047203	.0007402

50. id = 50

Source	SS	df	MS	Number of obs = 36
				F(3, 32) = 4.41
Model	.000062061	3	.000020687	Prob > F = 0.0105
Residual	.000150207	32	4.6940e-06	R-squared = 0.2924
				Adj R-squared = 0.2260
Total	.000212269	35	6.0648e-06	Root MSE = .00217

y	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
ba	.0659198	.0920045	0.72	0.479	-.1214873	.253327
v	1.268223	.4746733	2.67	0.012	.3013451	2.235101
nt	-.0000367	.0000297	-1.23	0.227	-.0000972	.0000239
_cons	-.0015616	.001478	-1.06	0.299	-.0045722	.001449

Appendix: Individual Results of Multiple Linear Results of First Model

Table 29: First Model Results - By Company

Company's Name	Symbol	code		Ba	V	nt	R-Squared	Adj R-squared
AL-WATANIAH TOWERS	**ABRAJ**	**id 1**	**Coef.**	0.1866018	7.050383	-0.0077565	0.2284	0.0923
			P>|t|	0.548	0.113	0.193		
THE ARAB HOTELS	**AHC**	**id 2**	**Coef.**	0.136487	3.872749	0.0005734	0.1635	0.1237
			P>|t|	0.463	0.055	0.403		
ARAB ISLAMIC BANK	**AIB**	**id 3**	**Coef.**	-0.0322124	0.3923887	-0.0000156	0.083	0.0531
			P>|t|	0.399	0.022	0.587		
AHLIEA INSURANCE GROUP	**AIG**	**id 4**	**Coef.**	0.0309843	-0.0613477	0.0000908	0.1587	0.1313
			P>|t|	0	0.013	0.348		
ALRAFAH MICROFINANCE BANK	**AMB**	**id 5**	**Coef.**	-0.0139645	1.693454	-0.0000561	0.4842	0.4601
			P>|t|	0.923	0	0		
ARAB COMPANY FOR PAINTS PRODUCTS	**APC**	**id 6**	**Coef.**	-0.0298234	2.568546	0.0060023	0.1779	-0.0277
			P>|t|	0.921	0.276	0.784		

Company's Name	Symbol	code		Ba	V	nt	R-Squared	Adj R-squared
AL-AQARIYA TRADING INVESTMENT	**AQARIYA**	**id 7**	**Coef.**	0.7230251	-0.9139287	0.0045975	0.2596	0.167
			P>|t|	0.202	0.47	0.018		
ARAB INVESTORS	**ARAB**	**id 8**	**Coef.**	-0.1671318	2.63313	0.0011467	0.1738	0.1069
			P>|t|	0.124	0.103	0.628		
ARAB REAL ESTATE ESTABLISHMENT	**ARE**	**id 9**	**Coef.**	0.0343346	2.165712	-0.002179	0.0537	0.0113
			P>|t|	0.852	0.065	0.416		
PALESTINE POULTRY	**AZIZA**	**id 10**	**Coef.**	0.0990659	-0.0106445	0.0020395	0.0722	0.0306
			P>|t|	0.124	0.96	0.147		
BANK OF PALESTINE	**BOP**	**id 11**	**Coef.**	0.0096627	-0.0235297	0.0000265	0.4299	0.4113
			P>|t|	0.649	0	0.005		
BIRZEIT PHARMACEUTICALS	**BPC**	**id 12**	**Coef.**	-0.0243813	0.0490997	-0.0001336	0.0599	0.0293
			P>|t|	0.315	0.038	0.374		
AL SHARK ELECTRODE	**ELECTRODE**	**id 13**	**Coef.**	-27.12246	11.04995	0.196254		
			P>|t|					

Company's Name	Symbol	code		Ba	V	nt	R-Squared	Adj R-squared
GLOBALCOM TELECOMMUNICATIONS	**GCOM**	**id 14**	**Coef.**	0.1759147	-0.6098454	0.0003505	0.2281	0.1766
			P>|t|	0.447	0.066	0.001		
GOLDEN WHEAT MILLS	**GMC**	**id 15**	**Coef.**	-0.1572591	0.573692	-0.0000465	0.0586	0.0265
			P>|t|	0.061	0.118	0.744		
GLOBAL UNITED INSURANCE	**GUI**	**id 16**	**Coef.**	0.0362349	1.767832	-0.0002394	0.0671	-0.0975
			P>|t|	0.886	0.285	0.945		
GRAND PARK HOTEL & RESORTS	**HOTEL**	**id 17**	**Coef.**				N/A	N/A
			P>|t|					
PALESTINE ISLAMIC BANK	**ISBK**	**id 18**	**Coef.**	0.2272846	1.150081	0.0001515	0.3548	0.3161
			P>|t|	0.017	0.009	0.066		
JERUSALEM CIGARETTE	**JCC**	**id 19**	**Coef.**	-0.0000441	0.0405301	-0.000204	0.0057	-0.0268
			P>|t|	0.998	0.627	0.497		
JERUSALEM PHARMACEUTICALS	**JPH**	**id 20**	**Coef.**	0.0097863	-0.0000366	-0.0002364	0.0128	-0.0208
			P>|t|	0.427	0.968	0.565		

Company's Name	Symbol	code		Ba	V	nt	R-Squared	Adj R-squared
JERUSALEM REAL ESTATE INVESTMENT	**JREI**	**id 21**	**Coef.**	0.9035301	-167.9772	-0.0537505		N/A
			P>|t|					
PALESTINE PLASTIC INDUSTRIES	**LADAEN**	**id 22**	**Coef.**	-0.0032892	-0.6140514	0.001243	0.0185	-0.0224
			P>|t|	0.95	0.761	0.253		
AL MASHRIQ INSURANCE	**MIC**	**id 23**	**Coef.**	-0.8188222	-0.5039029	-0.0008677	0.1635	0.0381
			P>|t|	0.106	0.961	0.888		
NATIONAL ALUMINUM AND PROFILE "NAPCO"	**NAPCO**	**id 24**	**Coef.**	2.016494	5.285088	0.0027894	0.4563	0.1845
			P>|t|	0.083	0.471	0.806		
THE NATIONAL CARTON INDUSTRY	**NCI**	**id 25**	**Coef.**	0.1818621	3.014689	0.0000228	0.1283	0.0956
			P>|t|	0.195	0.022	0.918		
NATIONAL INSURANCE	**NIC**	**id 26**	**Coef.**	0.1127327	-0.0303553	-0.0003173	0.111	0.07
			P>|t|	0.006	0.502	0.83		
NABLUS SURGICAL CENTER	**NSC**	**id 27**	**Coef.**	0.0315578	1.783283	0.0024536	0.0494	-0.0803
			P>|t|	0.925	0.615	0.74		

Company's Name	Symbol	code		Ba	V	nt	R-Squared	Adj R-squared
PALESTINE DEVELOPMENT & INVESTMENT	**PADICO**	**id 28**	**Coef.**	-0.002125	-0.0657026	0.0000126	0.1939	0.1676
			P>|t|	0.821	0	0.046		
PALAQAR FOR REAL ESTATE DEV.& MANAGEMENT	**PALAQAR**	**id 29**	**Coef.**				N/A	N/A
			P>|t|					
PALESTINE TELECOMMUNICATIONS	**PALTEL**	**id 30**	**Coef.**	-0.0348266	-0.0113662	0.000033	0.379	0.3586
			P>|t|	0.008	0.015	0		
PALESTINE COMMERCIAL BANK	**PCB**	**id 31**	**Coef.**	0.1503003	2.700573	0.0011272	0.0552	0.0055
			P>|t|	0.493	0.367	0.164		
PALESTINE ELECTRIC	**PEC**	**id 32**	**Coef.**	0.0198088	-0.6828326	-2.65E-06	0.1114	0.0811
			P>|t|	0.553	0.028	0.945		
DAR AL-SHIFA PHARMACEUTICALS	**PHARMACARE**	**id 33**	**Coef.**	0.2096534	-0.3819181	0.0035047	0.0703	-0.8594
			P>|t|	0.669	0.705	0.676		
PALESTINE INVESTMENT BANK	**PIBC**	**id 34**	**Coef.**	0.0037163	-0.0038352	0.0010152	0.031	-0.0118
			P>|t|	0.894	0.705	0.154		

Company's Name	Symbol	code		Ba	V	nt	R-Squared	Adj R-squared
PALESTINE INSURANCE	**PICO**	**id 35**	**Coef.**	-0.597291	0	0.02373		N/A
			P>|t|				
PALESTINE INVESTMENT & DEVELOPMENT	**PID**	**id 36**	**Coef.**	-0.018414	2.147026	-0.0030644	0.0411	-0.0164
			P>|t|	0.873	0.599	0.159		
PALESTINE INDUSTRIAL INVESTMENT	**PIIC**	**id 37**	**Coef.**	0.008978	-0.2347354	0.000106	0.0621	0.0316
			P>|t|	0.665	0.043	0.026		
ARAB PALESTINIAN SHOPPING CENTERS	**PLAZA**	**id 38**	**Coef.**	-0.0619927	-1.804863	-0.0008304	0.0276	-0.0358
			P>|t|	0.798	0.383	0.526		
PALESTINE MORTGAGE & HOUSING CORPORATION	**PMHC**	**id 39**	**Coef.**					N/A
			P>|t|					
PALESTINE REAL ESTATE INVESTMENT	**PRICO**	**id 40**	**Coef.**	0.0126305	-0.1734616	0.0000563	0.0242	-0.0076
			P>|t|	0.799	0.44	0.136		

Company's Name	Symbol	code		Ba	V	nt	R-Squared	Adj R-squared
PALESTINE SECURITIES EXCHANGE	**PSE**	**id 41**	**Coef.**					N/A
			P>|t|					
AL QUDS BANK	**QUDS**	**id 42**	**Coef.**	0.0229644	-0.4099634	0.0002706	0.0499	0.0171
			P>|t|	0.435	0.069	0.132		
THE RAMALLAH SUMMER RESORTS	**RSR**	**id 43**	**Coef.**	-0.066216	0.5902673	0.0013696	0.1154	-0.0742
			P>|t|	0.584	0.249	0.809		
AL-TAKAFUL PALESTINIAN INSURANCE	**TIC**	**id 44**	**Coef.**	0.3830234	1.277684	-3.59E-06	0.1134	-0.0528
			P>|t|	0.182	0.904	0.998		
THE NATIONAL BANK	**TNB**	**id 45**	**Coef.**	-0.0003488	1.904743	0.0001537	0.7802	0.7069
			P>|t|	0.998	0.157	0.637		
TRUST INTERNATIONAL INSURANCE	**TRUST**	**id 46**	**Coef.**	-0.0883212	-0.2008767	0.002792	0.1202	-0.0683
			P>|t|	0.397	0.494	0.499		
UNION CONSTRUCTION AND INVESTMENT	**UCI**	**id 47**	**Coef.**	0.3194009	0.2709869	-0.0000265	0.065	0.029
			P>|t|	0.043	0.697	0.393		

Company's Name	Symbol	code		Ba	V	nt	R-Squared	Adj R-squared
THE VEGETABLE OIL INDUSTRIES	**VOIC**	**id 48**	**Coef.**	-0.041971	0.182002	-0.0019408	0.0308	-0.022
			P>|t|	0.303	0.385	0.304		
PALESTINIAN DIST. & LOGISTICS SERVICES	**WASSEL**	**id 49**	**Coef.**	0.0419126	0.5602244	0.0001609	0.1703	0.1362
			P>|t|	0.435	0.247	0.015		
WATANIYA PALESTINE MOBILE TELECOMM.	**WATANIYA**	**id 50**	**Coef.**	0.0659198	1.268223	-0.0000367	0.2924	0.226
			P>|t|	0.479	0.012	0.227		
	Number of P>|t| <= 0.05			5	12	8		

Table 30: First Models' Significant Results

Company's stata code	Variables' (P>|t| Values)			R-Squared	Adj R-squared	symbol
	ba	v	nt			
id 3	0.399	**0.022**	0.587	0.083	0.0531	AIB
id 4	**0**	**0.013**	0.348	0.1587	0.1313	AIG
id 5	0.923	**0.0**	**0**	0.4842	0.4601	AMB
id 7	0.202	0.47	**0.018**	0.2596	0.167	AQARIYA
id 11	0.649	**0**	**0.005**	0.4299	0.4113	BOP
id 12	0.315	**0.038**	0.374	0.0599	0.0293	BPC
id 14	0.447	0.066	**0.001**	0.2281	0.1766	GCOM
id 18	**0.017**	**0.009**	0.066	0.3548	0.3161	ISBK
id 25	0.195	**0.022**	0.918	0.1283	0.0956	NCI
id 26	**0.006**	0.502	0.83	0.111	0.07	NIC
id 28	0.821	**0**	**0.046**	0.1939	0.1676	PADICO
id 30	**0.008**	**0.015**	**0**	0.379	0.3586	PALTEL
id 32	0.553	**0.028**	0.945	0.1114	0.0811	PEC
id 37	0.665	**0.043**	**0.026**	0.0621	0.0316	PIIC
id 47	**0.043**	0.697	0.393	0.065	0.029	UCI
id 49	0.435	0.247	**0.015**	0.1703	0.1362	WASSEL
id 50	0.479	**0.012**	0.227	0.2924	0.226	WATANIYA
Number of (P>|t| <= 0.05) values	**5**	**12**	**8**			

Appendix: Average of Variables among PEX Companies

Table 31: Average of Variables among PEX Companies

#	Symbol	Sector	Average of Return	Sectors' Return Average	Average of Bid-Ask Spread	Sectors' Bid -Ask Average	Average of Volatility	Sectors' Volatility Average	Average of Trades Number	Sectors' Trades Number Average	Average of Trades Value	Sectors' Trades Value Average	Average of Trade Volume	Sectors' Trade Volume Average
1	AIB	Bank and Financial Services	0.0003	0.0016	0.0193	0.0391	0.0019	0.0088	21.1	14.1	71569.6	118885.4	61306.7	91466.4
2	AMB		-0.0001		0.0159		0.0007		17.7		29745.3		39082.9	
3	BOP		-0.0003		0.0272		0.0427		51.8		311659.1		105566.0	
4	ISBK		0.0010		0.0162		0.0006		10.9		57072.3		61571.8	
5	PCB		0.0036		0.0332		0.0006		5.1		11982.7		17234.3	
6	PIBC		0.0009		0.0664		0.0351		4.1		55176.2		39357.4	
7	PMHC		0.0064		0.0456		0.0004		3.3		434980.4		457125.0	
8	PSE				0.1133		0.0043		9.8		109574.1		21803.2	
9	QUDS		0.0008		0.0337		0.0021		9.1		73564.2		75720.9	
10	TNB		0.0016		0.0202		0.0007		7.6		33530.5		35895.4	
11	APC	Industry	0.0162	0.0001	0.0897	0.0861	0.0035	0.0219	1.4	4.9	2087.0	14458.6	992.5	6291.1
12	AZIZA		0.0058		0.0883		0.0065		4.2		12497.9		5026.1	
13	BPC		0.0005		0.0837		0.0218		9.5		42400.0		8332.1	
14	ELECTRODE		-0.0258		0.1110		0.0217		1.5		2761.9		972.3	
15	GMC		0.0002		0.0234		0.0013		9.2		19425.4		15950.0	
16	JCC		0.0004		0.0803		0.0079		7.1		13884.1		4735.3	
17	JPH		0.0019		0.1422		0.1787		5.6		18844.3		3409.3	
18	LADAEN		0.0003		0.0272		0.0006		3.5		2785.1		3943.2	
19	NAPCO		0.0012		0.0408		0.0013		2.6		11743.3		9853.8	
20	NCI		0.0009		0.0188		0.0005		7.7		7918.5		12420.2	
21	PHARMACARE		-0.0035		0.1723		0.0109		3.5		14321.5		3429.5	
22	VOIC		0.0028		0.1554		0.0127		3.5		24834.0		6428.4	

#	Symbol	Sector	Average of Return	Sectors' Return Average	Average of Bid-Ask Spread	Sectors' Bid -Ask Average	Average of Volatility	Sectors' Volatility Average	Average of Trades Number	Sectors' Trades Number Average	Average of Trades Value	Sectors' Trades Value Average	Average of Trade Volume	Sectors' Trade Volume Average
23	AIG	Insurance	-0.0010	-0.0011	0.0477	0.0970	0.0120	0.0060	9.7	3.7	21830.1	38633.2	24243.1	28587.7
24	GUI		0.0066		0.0506		0.0011		3.1		5679.7		4719.5	
25	MIC		-0.0040		0.0398		0.0005		2.0		5149.1		9284.0	
26	NIC		0.0021		0.1681		0.0157		3.1		10279.5		2972.3	
27	PICO		-0.0095		0.1163		0.0028		2.3		169949.6		118878.8	
28	TIC		0.0021		0.0388		0.0004		3.7		33456.9		31680.2	
29	TRUST		-0.0041		0.2178		0.0125		2.2		24087.2		8336.3	
30	AQARIYA	Investment	-0.0011	0.0004	0.0317	0.0335	0.0016	0.0026	5.3	21.6	9088.4	86119.9	8733.3	58799.6
31	ARAB		0.0030		0.0421		0.0013		2.7		3408.1		3507.6	
32	JREI		-0.0005		0.0694		0.0008		1.3		39587.6		45401.9	
33	PADICO		-0.0007		0.0216		0.0119		104.8		510117.6		302707.8	
34	PID		0.0028		0.0431		0.0004		2.5		7295.4		6446.6	
35	PIIC		0.0004		0.0268		0.0033		21.6		51621.7		31497.0	
36	PRICO		0.0000		0.0184		0.0014		17.1		43119.2		36363.8	
37	UCI		-0.0004		0.0145		0.0005		17.4		24721.3		35738.9	

#	Symbol	Sector	Average of Return	Sectors' Return Average	Average of Bid-Ask Spread	Sectors' Bid -Ask Average	Average of Volatility	Sectors' Volatility Average	Average of Trades Number	Sectors' Trades Number Average	Average of Trades Value	Sectors' Trades Value Average	Average of Trade Volume	Sectors' Trade Volume Average
38	ABRAJ		0.0008		0.0485		0.0011		2.2		1486.9		1351.4	
39	AHC		0.0021		0.0414		0.0012		5.8		29974.5		27518.5	
40	ARE		0.0020		0.0332		0.0010		2.3		1277.9		1679.1	
41	GCOM		-0.0022		0.0157		0.0015		16.0		16118.7		28598.7	
42	HOTEL													
43	NSC		0.0043		0.0333		0.0007		2.1		5753.0		4734.2	
44	PALAQAR	**Service**	-0.0273	-0.0014		0.0433	0.0004	0.0055	2.1	11.6	78419.4	81397.6	59193.8	25378.4
45	PALTEL		-0.0002		0.0341		0.0501		66.8		746204.9		109015.1	
46	PEC		0.0000		0.0161		0.0008		12.0		12092.0		12615.2	
47	PLAZA		0.0006		0.0362		0.0009		3.3		2491.7		3364.6	
48	RSR		0.0041		0.1816		0.0049		2.0		19240.7		4446.7	
49	WASSEL		0.0000		0.0212		0.0008		11.4		10412.0		9452.8	
50	WATANIYA		-0.0004		0.0155		0.0005		13.9		53298.8		42570.9	

Appendix: Average of Bid-Ask Spread, Closing Price, Number of Trades, Trades Volume, Trades Value

Table 32: Bid-ASk Spread Average

#	Company Symbol	2006-2013	2013	2012	2011	2010	2009	2008	2007	2006
1	ABRAJ	0.0485	0.0365	0.0484	0.0586	0.0446				
2	AHC	0.0414	0.0381	0.0234	0.0373	0.0525	0.0434	0.0397	0.0378	0.0395
3	AIB	0.0193	0.0260	0.0187	0.0159	0.0166	0.0162	0.0193	0.0175	0.0264
4	AIG	0.0477	0.0110	0.0110	0.0114	0.0149	0.0231	0.0388	0.0546	0.2946
5	AMB	0.0159		0.0188	0.0160	0.0144	0.0169	0.0152	0.0139	
6	APC	0.0897	0.1877	0.1326	0.0886	0.1094	0.0748	0.0606	0.0443	0.0363
7	AQARIYA	0.0317	0.0311	0.0341	0.0291					
8	ARAB	0.0421	0.0400	0.0375	0.0322	0.0428	0.0377	0.0378	0.0306	0.0529
9	ARE	0.0332	0.0178	0.0221	0.0284	0.0447	0.0305	0.0332	0.0397	0.0461
10	AZIZA	0.0883	0.1786	0.1203	0.1092	0.1060	0.0536	0.0444	0.0506	0.0473
11	BOP	0.0272	0.0185	0.0201	0.0198	0.0243	0.0219	0.0291	0.0252	0.0697
12	BPC	0.0837	0.0622	0.0851	0.0784	0.0866	0.0642	0.0789	0.1057	0.1158
13	ELECTRODE	0.1110	0.1100	0.0933	0.1133					
14	GCOM	0.0157	0.0108	0.0128	0.0146	0.0213	0.0271			
15	GMC	0.0234	0.0288	0.0259	0.0232	0.0197	0.0207	0.0195	0.0207	0.0310
16	GUI	0.0506	0.0669	0.0481	0.0454					
17	HOTEL									
18	ISBK	0.0162	0.0192	0.0158	0.0170	0.0145	0.0129			
19	JCC	0.0803	0.0241	0.0344	0.0660	0.0823	0.0908	0.1071	0.1038	0.1705
20	JPH	0.1422	0.0745	0.1367	0.1966	0.1572	0.1326	0.1113	0.1266	0.2105
21	JREI	0.0694	0.0400	0.0583	0.0800	0.0500	0.0705	0.0914	0.0413	
22	LADAEN	0.0272	0.0180	0.0155	0.0216	0.0217	0.0162	0.0289	0.0334	0.0625
23	MIC	0.0398			0.0250	0.0506	0.0342	0.0347	0.0960	0.0395
24	NAPCO	0.0408	0.0383	0.0500	0.0550					
25	NCI	0.0188	0.0239	0.0245	0.0236	0.0128	0.0128	0.0133	0.0195	0.0239

#	Company Symbol	2006-2013	2013	2012	2011	2010	2009	2008	2007	2006
26	NIC	0.1681	0.1186	0.1280	0.1476	0.1432	0.1347	0.1730	0.2504	0.3550
27	NSC	0.0333			0.0533	0.0482	0.0275	0.0298		
28	PADICO	0.0216	0.0116	0.0113	0.0115	0.0122	0.0122	0.0173	0.0152	0.1059
29	PALAQAR	#DIV/0!								
30	PALTEL	0.0341	0.0206	0.0200	0.0242	0.0243	0.0283	0.0391	0.0297	0.1083
31	PCB	0.0332	0.0438	0.0321	0.0293	0.0285	0.0364	**0.0357**	0.0287	0.0180
32	PEC	0.0161	0.0157	0.0159	0.0133	0.0130	0.0127	0.0134	0.0189	0.0395
33	PHARMACARE	0.1723	0.1723							
34	PIBC	0.0664	0.0506	0.0358	0.0411	0.0398	0.0619	0.0622	0.0905	0.1645
35	PICO	0.1163	0.0625		0.1290	0.1183				
36	PID	0.0431	0.0376	0.0420	0.0387	0.0335	0.0423	0.0511	0.0640	0.0395
37	PIIC	0.0268	0.0327	0.0393	0.0360	0.0190	0.0137	0.0155	0.0171	0.0444
38	PLAZA	0.0362	0.0175	0.0318	0.0373	0.0459	0.0316	0.0319	0.0369	0.0397
39	PMHC	0.0456		0.0671	0.0412					
40	PRICO	0.0184	0.0176	0.0159	0.0143	0.0151	0.0201	0.0156	0.0204	0.0350
41	PSE	0.1133		0.1133						
42	QUDS	0.0337	0.0214	0.0320	0.0324	0.0368	0.0285	0.0260	0.0372	0.0742
43	RSR	0.1816	0.1300	0.1727	0.2118	0.2028				
44	TIC	0.0388	0.0444	0.0353	0.0392					
45	TNB	0.0202	0.0204	0.0170						
46	TRUST	0.2178		0.1400	0.1808	0.2311	0.2166	0.2219		
47	UCI	0.0145	0.0157	0.0152	0.0162	0.0134	0.0138	0.0133	0.0144	
48	VOIC	0.1554	0.2719	0.1422	0.1829	0.1754	0.1012	0.1141	0.1774	0.1756
49	WASSEL	0.0212	0.0291	0.0287	0.0241	0.0151	0.0160	0.0179	0.0163	
50	WATANIYA	0.0155	0.0137	0.0172	0.0155					

Table 33: Closing Price Average

#	Company Symbol	2006-2013	2013	2012	2011	2010	2009	2008	2007	2006
1	ABRAJ	1.03	0.93	1.00	1.04	1.09				
2	AHC	0.89	0.65	0.63	0.78	0.90	0.73	0.85	0.95	1.07
3	AIB	1.25	1.01	0.77	0.81	1.03	1.26	1.60	1.84	1.42
4	AIG	1.45	0.19	0.26	0.34	0.61	0.82	1.24	2.30	6.45
5	AMB	0.80		0.80	0.75	0.80	0.68	0.88	0.92	
6	APC	1.67	2.86	2.83	2.12	1.65	1.12	0.99	0.89	0.94
7	AQARIYA	0.71	0.69	0.73	0.71					
8	ARAB	0.73	0.97	0.79	0.81	0.72	0.60	0.66	0.90	0.76
9	ARE	0.59	0.37	0.44	0.56	0.64	0.46	0.54	0.81	0.65
10	AZIZA	1.52	2.56	2.06	2.76	2.42	0.95	0.86	1.01	1.02
11	BOP	3.43	2.96	2.80	3.15	3.49	3.41	3.66	4.23	3.76
12	BPC	4.20	2.88	2.85	3.31	3.76	3.88	4.84	4.77	6.02
13	ELECTRODE	2.29	2.00	1.94	2.56					
14	GCOM	0.54	0.26	0.41	0.58	0.81	1.14			
15	GMC	0.95	0.82	0.84	1.00	0.76	0.84	0.89	0.98	1.31
16	GUI	1.22	1.36	1.11	1.20					
17	HOTEL									
18	ISBK	0.89	1.13	0.84	0.85	0.83	0.74			
19	JCC	2.70	1.18	1.09	1.87	2.72	3.08	3.47	3.66	4.23
20	JPH	4.97	2.36	4.31	4.77	4.33	4.11	5.09	5.36	7.55
21	JREI	0.97	0.66	0.83	0.96	0.91	1.13	1.08	1.03	1.05
22	LADAEN	0.58	0.36	0.35	0.45	0.49	0.31	0.51	0.70	0.97
23	MIC	0.61			0.53	0.65	0.56	0.64	0.77	
24	NAPCO	0.78	0.69	0.81	0.95					
25	NCI	0.51	0.71	0.59	0.69	0.45	0.30	0.40	0.51	0.78

#	Symbol	2006-2013	2013	2012	2011	2010	2009	2008	2007	2006
26	NIC	3.76	3.30	3.51	3.48	3.76	4.00	4.38		
27	NSC	0.77	1.08	1.18	1.06	0.86	0.49	0.63		
28	PADICO	1.77	0.99	0.96	1.14	1.32	1.32	2.34	2.38	3.76
29	PALAQAR	0.83	0.74	0.90						
30	PALTEL	5.48	5.10	5.02	5.23	5.28	5.58	6.63	4.46	6.65
31	PCB	0.76	0.71	0.77	0.76	0.70	0.79	0.84	0.73	0.86
32	PEC	1.13	1.36	1.24	1.16	1.05	0.92	0.97	1.14	1.34
33	PHARMACARE	4.10	4.10							
34	PIBC	1.99	0.88	0.89	0.98	1.05	1.34	1.60	1.94	4.17
35	PICO	1.64	1.31	1.44	1.50	1.86				
36	PID	0.94	1.02	1.00	1.00	1.00	0.97	0.95	0.87	0.79
37	PIIC	1.09	1.43	1.31	1.58	1.21	0.49	0.70	0.87	1.42
38	PLAZA	0.70	1.29	0.54	0.69	0.75	0.56	0.61	0.76	0.84
39	PMHC	0.92	0.90	0.98	0.85					
40	PRICO	0.92	0.63	0.71	0.83	0.85	0.71	0.92	1.15	1.48
41	PSE	5.03	5.02	5.05						
42	QUDS	1.11	0.83	0.93	1.05	1.12	0.89	1.04	1.42	1.38
43	RSR	3.05	3.10	2.86	2.82	3.42				
44	TIC	1.04	1.08	1.01	1.03					
45	TNB	0.90	0.90	0.90						
46	TRUST	3.21	2.56	2.82	2.96	2.72	3.23	4.02		
47	UCI	0.72	0.53	0.69	0.63	0.65	0.63	0.75	1.07	
48	VOIC	3.05	5.57	4.06	3.33	2.75	1.85	2.17	3.31	3.22
49	WASSEL	0.80	0.81	0.84	0.86	0.63	0.62	0.91	0.98	
50	WATANIYA	1.16	1.08	1.17	1.23					

Table 34: Number of Trades Average

#	Symbol	2006-2013	2013	2012	2011	2010	2009	2008	2007	2006
1	ABRAJ	2.18	1.56	1.83	1.67	3.01				
2	AHC	5.76	2.09	4.33	6.88	2.99	3.52	3.35	5.39	11.79
3	AIB	21.13	4.22	6.52	7.08	7.58	17.96	24.51	50.85	39.24
4	AIG	9.71	5.61	5.83	7.06	12.32	8.62	6.63	14.66	16.40
5	AMB	17.70		6.80	11.63	17.40	15.35	19.15	40.88	
6	APC	1.45	1.42	1.41	1.94	1.36	1.15	1.32	1.62	2.00
7	AQARIYA	5.35	4.25	4.97	6.41					
8	ARAB	2.72	2.61	3.97	1.50	2.15	2.55	1.77	2.94	3.15
9	ARE	2.34	1.45	1.36	2.45	2.45	1.85	1.64	3.74	2.17
10	AZIZA	4.16	3.35	2.42	3.61	6.21	2.83	3.75	2.95	5.35
11	BOP	51.85	26.54	24.33	24.95	22.41	50.18	123.66	102.76	40.59
12	BPC	9.50	3.25	3.49	4.22	4.75	7.86	13.56	9.44	21.81
13	ELECTRODE	1.52	1.36	1.64	1.55					
14	GCOM	15.96	10.86	16.04	16.75	20.19	17.63			
15	GMC	9.15	4.27	3.93	11.69	4.84	5.22	10.08	14.80	12.01
16	GUI	3.11	2.36	2.55	4.15					
17	HOTEL									
18	ISBK	10.92	11.28	9.88	8.57	12.12	14.01			
19	JCC	7.15	7.67	5.02	5.08	5.60	7.95	8.68	9.10	6.86
20	JPH	5.61	4.00	3.16	3.14	4.80	4.43	7.96	4.75	8.44
21	JREI	1.29	1.88	1.33	1.00	1.40	1.00	1.00	1.42	1.00
22	LADAEN	3.50	1.78	2.99	3.85	5.19	2.26	2.32	3.08	4.40
23	MIC	2.00			1.54	1.90	1.89	2.33	1.50	
24	NAPCO	2.61	1.84	3.42	2.83					
25	NCI	7.72	5.11	3.63	9.47	13.22	5.81	6.22	6.59	10.92

#	Symbol	2006-2013	2013	2012	2011	2010	2009	2008	2007	2006
26	NIC	3.06	2.23	2.88	1.97	3.61	3.00	4.20		
27	NSC	2.06	1.00	1.81	1.47	2.15	1.93	2.69		
28	PADICO	104.84	35.65	25.22	43.94	70.06	106.71	177.12	159.70	225.22
29	PALAQAR	2.10	1.00	2.83						
30	PALTEL	66.76	27.24	22.39	27.01	36.23	71.63	123.20	78.70	151.86
31	PCB	5.07	3.74	4.11	4.16	5.34	5.58	5.62	4.67	15.20
32	PEC	11.97	5.49	5.81	6.76	8.64	13.29	13.97	19.61	27.01
33	PHARMACARE	3.46	3.46							
34	PIBC	4.06	2.26	1.58	3.25	5.53	2.41	4.88	3.09	5.85
35	PICO	2.31	4.14	1.25	1.00	1.94				
36	PID	2.55	1.85	1.84	1.83	2.31	2.10	2.31	2.90	4.62
37	PIIC	21.57	7.21	6.09	20.50	40.79	15.43	16.46	21.00	34.81
38	PLAZA	3.25	2.29	1.94	1.43	2.59	2.64	5.22	3.26	2.70
39	PMHC	3.28	1.00	1.55	7.38					
40	PRICO	17.06	7.95	9.44	16.90	30.47	7.68	14.86	21.55	24.36
41	PSE	9.80	1.00	15.67						
42	QUDS	9.12	4.28	4.48	4.06	8.76	9.37	11.49	13.53	9.98
43	RSR	1.96	2.32	1.41	1.66	2.17				
44	TIC	3.67	4.06	2.26	4.80					
45	TNB	7.65	7.42	10.00						
46	TRUST	2.17	1.20	1.43	1.90	1.57	1.35	3.87		
47	UCI	17.41	5.81	6.98	9.26	10.05	10.47	20.84	50.63	
48	VOIC	3.54	1.97	1.69	1.95	1.80	1.89	3.00	4.42	5.91
49	WASSEL	11.37	3.97	4.66	7.73	9.89	6.43	14.61	36.32	
50	WATANIYA	13.94	11.87	10.93	19.04					

Table 35: Trades Value Average

#	Symbol	2006-2013	2013	2012	2011	2010	2009	2008	2007	2006
1	ABRAJ	1486.9	304.3	930.7	962.9	2759.4				
2	AHC	29974.5	17435.8	28930.7	21135.8	92455.3	50513.5	10062.5	9134.6	29956.5
3	AIB	71569.6	27060.4	23982.6	9700.1	7860.3	112495.6	52376.3	249659.3	52531.7
4	AIG	21830.1	9880.9	5151.6	6290.4	19857.4	9937.7	9575.9	51957.0	63897.7
5	AMB	29745.3		22230.1	24717.5	48723.1	36062.8	17667.6	26194.1	
6	APC	2087.0	4800.5	1709.4	4349.0	2041.4	1065.4	1137.7	843.0	1680.5
7	AQARIYA	9088.4	8045.2	10361.9	8400.2					
8	ARAB	3408.1	1668.3	9007.1	1107.2	4009.8	5826.6	395.0	3464.4	1038.8
9	ARE	1277.9	211.0	316.9	1628.9	2789.2	754.9	498.7	1424.8	719.9
10	AZIZA	12497.9	11023.0	38867.2	25285.5	28541.3	3355.2	3025.8	2298.4	6129.5
11	BOP	311659.1	199307.8	193444.5	153859.4	111754.3	442375.0	648126.5	533183.6	212617.1
12	BPC	42400.0	33102.0	12270.6	33756.9	36096.6	56242.2	60560.0	21972.6	66197.4
13	ELECTRODE	2761.9	3180.9	6717.0	906.1					
14	GCOM	16118.7	5220.3	12093.6	18584.2	28008.5	20982.3			
15	GMC	19425.4	11853.5	12130.0	41882.1	5812.5	45886.8	10698.4	12714.4	13585.4
16	GUI	5679.7	3672.4	5694.8	7305.2					
17	HOTEL									
18	ISBK	57072.3	82958.8	62915.2	30964.6	61890.1	36316.0			
19	JCC	13884.1	15034.7	7047.8	11049.3	18727.8	20213.1	17565.8	12480.8	8455.3
20	JPH	18844.3	7950.3	27825.1	32994.6	14560.2	7795.7	38666.1	8061.2	12797.3
21	JREI	39587.6	27176.5	50446.5	325927.8	534.9	5455.1	436.3	23160.4	7439.3
22	LADAEN	2785.1	498.4	2367.5	3598.8	7992.6	988.5	811.2	1222.1	2545.5
23	MIC	5149.1			3551.0	4050.4	9516.8	1827.0	239.9	
24	NAPCO	11743.3	1757.1	26308.4	3312.2					
25	NCI	7918.5	6606.9	7102.3	13674.9	17658.4	5017.7	2567.7	2661.0	9281.1
26	NIC	10279.5	16250.3	12269.6	5572.2	9950.1	9748.7	8453.7		

#	Symbol	2006-2013	2013	2012	2011	2010	2009	2008	2007	2006
27	NSC	5753.0	7703.0	17850.0	9872.7	8786.3	1222.8	1058.2		
28	PADICO	510117.6	417610.3	121427.6	254870.8	303052.1	348925.4	950783.0	497232.7	1224787.7
29	PALAQAR	78419.4	214.2	130556.2						
30	PALTEL	746204.9	404348.5	400390.6	533074.5	691201.9	732067.0	1411502.3	540245.9	1279256.0
31	PCB	11982.7	25676.5	9057.8	20811.2	11544.7	11219.4	9748.0	6439.1	13489.2
32	PEC	12092.0	7677.5	7427.0	10765.3	10629.7	16013.6	10878.9	14129.5	22708.3
33	PHARMACARE	14321.5	14321.5							
34	PIBC	55176.2	61116.7	12090.6	31149.2	215035.1	3345.5	41670.0	8472.9	67772.0
35	PICO	169949.6	222582.8	777315.3	15375.0	14403.1				
36	PID	7295.4	19058.5	6244.1	7552.2	6450.4	6821.2	4022.3	7101.8	5855.0
37	PIIC	51621.7	36356.3	20484.7	104673.5	144885.9	17623.6	12327.4	17480.7	50638.6
38	PLAZA	2491.7	1958.4	1216.6	1038.3	5370.8	1872.9	3717.3	2415.7	1518.1
39	PMHC	434980.4	231039.8	632774.9	315968.6					
40	PRICO	43119.2	12582.1	20466.7	43289.9	80897.8	100723.5	18489.8	30054.4	38069.4
41	PSE	109574.1	14391.7	173029.0						
42	QUDS	73564.2	19211.9	8864.7	38961.9	53221.0	80531.4	119822.3	138568.8	44393.5
43	RSR	19240.7	28449.1	12878.9	15891.0	10997.4				
44	TIC	33456.9	66351.7	10555.1	32045.1					
45	TNB	33530.5	35603.1	12507.7						
46	TRUST	24087.2	22227.4	52450.7	66503.4	20854.5	9918.4	5465.3		
47	UCI	24721.3	12169.2	13802.9	10258.9	11145.7	13405.1	18340.5	84785.1	
48	VOIC	24834.0	15763.3	61941.6	145014.5	30465.3	12158.8	10309.8	21199.6	6573.6
49	WASSEL	10412.0	1808.7	1788.5	15645.2	17207.1	6380.0	9703.1	20378.6	
50	WATANIYA	53298.8	19467.3	67450.2	72241.2					

Table 36: Trades Volume Average

#	Symbol	2006-2013	2013	2012	2011	2010	2009	2008	2007	2006
1	ABRAJ	1351.4	307.5	940.5	926.5	2404.9				
2	AHC	27518.5	23721.8	31274.4	18921.0	74330.2	45618.1	11658.8	9591.1	27081.7
3	AIB	61306.7	25012.5	30170.6	11752.6	7657.2	88996.8	50663.4	199091.6	48755.0
4	AIG	24243.1	51861.9	21667.1	17457.3	31121.6	12178.9	11961.6	28628.5	23871.1
5	AMB	39082.9		27471.5	31962.7	59636.3	47939.0	27134.9	37237.7	
6	APC	992.5	1220.2	443.6	1407.8	907.6	703.4	1165.6	941.0	1775.2
7	AQARIYA	8733.3	8071.0	9431.6	8411.1					
8	ARAB	3507.6	1236.1	7770.9	953.6	3721.2	6719.5	566.9	3471.0	1260.4
9	ARE	1679.1	428.0	557.7	2065.9	3255.3	1215.2	957.9	1711.2	1113.8
10	AZIZA	5026.1	3208.2	11658.3	6367.1	7630.6	2414.7	3467.4	2045.5	5613.1
11	BOP	105566.0	66374.2	68621.9	49708.6	31405.5	127801.6	246917.6	175828.1	79109.5
12	BPC	8332.1	8563.5	3097.9	7433.0	6816.6	10493.4	12795.7	4395.9	10368.5
13	ELECTRODE	972.3	1127.6	2435.0	285.9					
14	GCOM	28598.7	19527.8	28616.7	30019.9	38777.8	17909.0			
15	GMC	15950.0	10681.1	9988.0	27506.7	5282.1	39591.8	11654.7	12193.3	9817.8
16	GUI	4719.5	2711.5	5112.5	6060.6					
17	HOTEL									
18	ISBK	61571.8	72319.1	70317.4	35884.4	73681.1	47946.1			
19	JCC	4735.3	8965.1	4574.3	3802.7	4837.3	4522.5	5004.0	3516.6	2028.9
20	JPH	3409.3	3074.9	4362.7	5137.5	2387.8	1344.4	7173.4	1639.5	1747.9
21	JREI	45401.9	40815.6	58004.0	343067.0	602.4	4400.0	575.0	31556.1	10000.0
22	LADAEN	3943.2	978.8	4906.1	5347.1	10460.9	2195.6	1666.2	1675.1	2550.5
23	MIC	9284.0			6557.2	6200.6	17541.8	3728.6	442.3	
24	NAPCO	9853.8	1687.7	21933.6	2493.3					
25	NCI	12420.2	9577.8	11898.7	16928.8	25392.2	11906.8	6410.2	5019.5	11012.7
26	NIC	2972.3	5017.4	3566.3	1622.3	2669.0	2428.7	2779.3		

#	Symbol	2006-2013	2013	2012	2011	2010	2009	2008	2007	2006
27	NSC	4734.2	4994.5	10867.8	6628.1	7571.4	1780.4	1667.8		
28	PADICO	302707.8	364548.0	122892.7	212675.6	225878.7	252466.4	541655.0	290600.0	424308.7
29	PALAQAR	59193.8	212.5	98514.7						
30	PALTEL	109015.1	55097.6	54819.8	72681.6	91841.7	89230.3	207246.0	118493.5	183849.8
31	PCB	17234.3	36350.5	11653.6	26952.8	16328.3	14112.8	16882.6	11941.4	21658.8
32	PEC	12615.2	5673.2	5978.8	9269.0	10029.4	17554.0	15432.2	16652.4	23442.1
33	PHARMACARE	3429.5	3429.5							
34	PIBC	39357.4	71223.5	12794.3	29366.2	178736.7	2665.9	37363.9	5143.2	17174.2
35	PICO	118878.8	159398.0	547950.0	10250.0	7462.5				
36	PID	6446.6	13439.2	4419.5	5352.7	4579.8	4901.7	4220.5	8483.9	7395.6
37	PIIC	31497.0	17079.1	11136.7	45322.2	78578.2	22852.1	16895.1	19106.0	30700.1
38	PLAZA	3364.6	2522.3	1704.5	1035.7	5016.2	2329.6	6348.8	3155.1	1830.8
39	PMHC	457125.0	263950.0	633467.0	359536.0					
40	PRICO	36363.8	13883.0	19850.8	35500.2	61753.3	90619.7	19471.3	25488.8	25100.6
41	PSE	21803.2	2883.0	34416.7						
42	QUDS	75720.9	22057.5	9558.8	35563.3	46596.1	91913.6	137560.5	126888.5	44580.4
43	RSR	4446.7	6434.4	3138.8	3998.5	2315.7				
44	TIC	31680.2	62564.5	10392.2	30140.8					
45	TNB	35895.4	38059.4	13945.5						
46	TRUST	8336.3	8591.6	18535.1	22678.9	7298.3	3273.1	1847.5		
47	UCI	35738.9	23100.7	19138.8	16022.7	16615.4	21123.8	34637.8	107464.1	
48	VOIC	6428.4	2028.6	10013.0	33687.3	8224.6	4859.8	4364.5	6894.2	2004.8
49	WASSEL	9452.8	1559.6	1499.2	12509.7	15667.5	7463.1	10313.4	16578.2	
50	WATANIYA	42570.9	18403.8	52979.1	55799.0					