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## **IS PALESTINE EXCHANGE AN EFFICIENT MARKET IN SEMI-STRONG FORM?**

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### **Abstract**

*An efficient market hypothesis is still crucial towards financial literature and is of interest to researchers evaluating the efficiency of financial markets in various economies. In this study, we used the event study methodology to examine if the Palestine Exchange is an efficient market in its semi-strong form by studying the effect of cash dividend announcements on stocks prices for companies listed on the Palestine Exchange. We studied sixty events that have been announced in the nine years for the period between 1/1/2006 and 31/12/2014 by using the appropriate statistical tests to examine if the cumulative abnormal return is statistically significant around the announcement day; which are ten days before and ten days after the event day. The results reveal that we can accept the alternative hypothesis that assume there were statistically significant differences between cumulative abnormal returns and zero. Thus, investors could realize abnormal returns during the event window for the study period. From this study, we concluded that the Palestine Exchange is inefficient in semi-strong form in the study period.*

*Keywords: Event study, abnormal return, cash dividend, Palestine Exchange, market efficiency, announcement effect, market model*

## INTRODUCTION

Achieving profits in companies is regarded as one of the most important indicators for management performance, investors, and stockholders. They aim to maximize the benefit of any investment, process, or action in capital investments. When the company makes a profit, they will either distribute it to the shareholders to meet the indignation of the risk arising from the possession of company stock's, or will hold these profits or parts of it to expand operations and future investment, as these profits are regarded as a cheap source of funding. Companies adhere to a few methods of distributing profits, mostly in the form of cash or bonus shares, or shares owned by companies in other companies being distributed in the form of goods produced by the company. However, psychological factors play a major role in determining the method of distribution; shareholders usually prefer cash distribution, as it is regarded as a significant compensation of risks taken by investors when they own stocks.

The efficiency of the financial markets is one of the topics being raised, and continues to provoke heated debate among those that are interested. The efficiency of the financial markets hypothesis was a strong feature in financial literature over the past few decades due to its implied importance; as per Fama (1970), efficient markets fully reflect all available information, whether representing such information in the financial rules or in the information broadcast by the media or in the historical record stock prices in the past periods, or other information affecting the market value of the shares as a result of decisions of certain investors. Therefore, Fama (1970) categorizes the financial market efficiency "Efficient Market Hypotheses" into three levels, depending on the availability of information in the market; the weak form, semi-strong form, and the strong form.

According to Fama efficient market hypotheses: the stock information should reflect the stock price and the movement and direction of the market; this study attempts to determine if the Palestine stock market is efficient in its semi-strong form. That will be done by analyzing the effect of cash dividends announcement on the stock price and if the investors can realize abnormal return before and after the announcement, known as the "event study" methodology, which was devised by Fama et al (1969).

To measure market efficiency, it is important to examine the effect of the announcement of cash dividend on share price in terms of psychological factor to cash dividends announcement for investors and anticipation since the end of the fiscal year. The research problem are addressed in the following question:

Is the announced cash dividends reflected directly in the companies' stock prices in Palestine Exchange; and therefore the investors cannot achieve abnormal returns?

Through the answer of the aforementioned question, we can determine whether or not the Palestine Exchange is an efficient market in the semi-strong form.

## LITERATURE REVIEW

Several academic research were conducted since Fama et al (1969), who presented an important study on theoretical techniques of event study techniques and explained the methodology that can be used by researchers to measure the relationship between events and stocks prices movements. This is followed by Warner and Brown (1980, 1985), who developed the event study practical techniques by using the market model. Vazakidis & Athianos (2010) used the event study method to determine if the dividend announcement influences the stock price in the Greek stock market. They used samples from 60 companies listed in the Athens Stock Exchange, a study period from 2004 - 2008, and used (-20, +20) days for event window. The study confirmed that the dividends announcement influences stock prices. They attributed the results to characteristics distinguishing the Athens Stock Exchange from European and American markets. Salameh & Albahsh (2011) studied the effect of mandatory disclosure on stock prices in the Palestine Stock Market, and they used the event study to test whether or not the Palestine stock market is efficient market in its semi-strong form, determined to be inefficient. In Kadioğlu et al (2015), the event study methodology was used to determine the effect of cash dividends announcement on the stock price and if the investors can realize abnormal returns around the event date in Borsa Istanbul. They also used data from 902 events for 118 companies from 2003 – 2015. The study found that the relationship between cash dividends per share and abnormal returns after the announcement day was significantly negative. The study attributed this occurrence to the tax clientele effect theory.

J.Rajesh (2013) used the event study methodology to examine the effect of stock split on stocks prices. The researcher used several event window in their study. In addition to using the market model to calculate the expected return for the stock sample, the study tested the split effect for 521 companies that carries stock split in 3 - 4 years. The study found that the Indian market was efficient in its semi-strong form. Kumar et al (2012) used the event study methodology to determine market reaction to dividends announcement. They used event window from 8 days (-4, + 4) for listed company in the national stock market in India for one year, from January 2009 - December 2009. The study found that there is no abnormal return during the study period, and remains-to-dividends announcement means that the national stock market is efficient in its semi-strong form. Dilshad (2012) used merger and acquisitions events to test the stock market efficiency via the event study methodology by using sample from 18 deals for banks merger from 2001 - 2010 in Europe. The study used 89 days as an estimation

period and event window of (-30, + 30). The study found that the investors achieve abnormal returns during the (-5, +5) around the event date. However, during the (-30, +30) event window, CAR is statistically equal to Zero.

Gopalaswamy et al (2008) studied the stock price reaction to the merger announcement in Indian markets. They analyzed 25 firms that merged or acquired announcement from 2000 - 2007 by using the event study methodology. The sample is selected from companies listed in the Bombay Stock Exchange or National Stock Exchange. Furthermore, the study used several events window to determine when the stock prices changed around the announcement date. The analysis showed that on average, the price go-up a few days prior to the announcement. The study also confirmed that the Indian stock markets as being efficient in the semi-strong form. Lasmanah and Bagja (2014) studied the differences in the abnormal return and trading volume around the stock spilt announcement in the Indonesian stock exchange by using the event study method. The study covered the stock spilt announcement in 2010 – 2013, and used the event window (-7, +7) around the event date. They used a sample of 32 companies, which have stock spilt announcement and used T-test Paired Two Sample to test the hypothesis of the research. The study found no significant difference between abnormal return and stock trading volume activity around the event date, and they returned that to investor perceive benefits from the stock spilt on wealth.

Poon and Chan (2007) used the pooled time series cross-sectional issuer rating data of 170 companies listed on the Shanghai and Shenzhen Stock Exchanges from January 2002 to July 2006. The study followed the event study method to determine the certification effect of initial rating announcements and the signaling effect of rating downgrade announcements in China. In addition, the study confirmed that the announcements effect of rating downgrade was negative. Stasiulis (2009) examine the market efficiency in 9 CEE countries from 2005 – 2008, and looked for market reaction for good and bad news by using the event study methodology to determine the effect of earning announcement on the stock market and whether or not the events possess informatics value. The result for testing the information content shows that certain countries reacted on and after the event day, while other countries reacted in all events period. The study concluded that the markets were efficient when they took all events into account (bad, good, neutral news), but when they took the events separately, the study found that some markets were efficient in the semi-strong form, while others were not. Finnerty et al (2013) examined the credit rating announcements on credit default swap using the event study methodology. The study found that the credit rating change and credit watch and outlook effected credit default swap. Galil and Soffer (2011) used the event study technique to examine the CDS market's response to rating announcements by using sample of 2866 rating

announcements throughout the period between January 2002 and June 2006 and CDS spreads for more than 2000 entities. The study concluded that the market reaction for bad news was stronger than good news.

Olweny (2012) used dividends announcements to determine whether or not the Nairobi Stock Exchange was an efficient market in semi-strong form. The study used secondary data collected from NSE through the period from 1999-2003. The study confirmed that the NSE is not an efficient market in semi-strong forms, as the found that the investors can achieve abnormal return via dividend announcement. Hussin et al (2010) tested if the Malaysian Stock Exchange was an efficient market in semi-strong form by using the event study methodology via examining the influence of dividends and earnings announcements in stock price. The study covered 120 companies announcing dividends between January - November 2006. The study confirmed the Malaysian Stock Exchange was efficient market in semi-strong form, but not fully efficient in this form.

Steiner and Heinke (2001) studied the influence of the watchlistings and rating changes announcements on the Eurobonds price in Germany via the event study methodology. The study period covered 1985 – 1996, and used samples from 546 rating changes and 182 watchlistings. They confirmed that the events announcement of downgrading and negative watchlistings induce significant abnormal returns on the events day and after the events days. Furthermore, negative abnormal returns are followed by significant positive abnormal returns several weeks after the announcement day.

Chen et al (2007) examined the announcements effect of cash dividends changes on the stock price in the Chinese stock markets using event study methodology. The study covered companies that are not in the financial sector and announced cash dividends during 2000 to 2004. They concluded that the announcements of cash dividends changes were significantly positive. On top of that, the stock's price reactions were significantly positive for the fluctuation of cash dividends. Hanifa el (2014) analyzed the announcements of sukuk and conventional bond on the stock price in Kuala Lumpur Stock Exchange (KLSE) and whether or not the investors and institutional wealth was affected by abnormal returns. They used event windows from (64- , 64+) around the event date, which was determined in the study as 2- , +2 days. The study covered 287 firms issuing securities debt between “2001 - 2013”. They concluded that the firm value and investor's wealth were influenced when announced for sukuk and conventional bond.

Kirat and Rezaee (2015) used the event study methodology to test the impact of regulatory sanctions on the firm stock's price that are listed in the Paris Stock Exchange. The study tested 75 observation for investigations regulatory sanctions, and the events which was

tested are (open investigations, issue financial sanctions, disseminate information about sanctions), carried out by the Financial Market Authority through 2006 - 2011. The study confirmed that there is a strong negative impact for the sanctions published in press on the firm's stock price, on top of the decrease to the firm's stock price when the investigations opened.

Abbas (2015) studied the stocks' prices reaction for the dividends announcements in Damascus Securities Exchange. In this study, the event study methodology was used to examine the effect of events on the stock price, and whether or not the investors can achieve abnormal around the events. The period for this study covered 2011 – 2014, and 18 events for 11 companies announcing dividend payment. The study found that there are no significant abnormal returns before the event day, and the investors could achieve abnormal return after the announcement day.

### **The Levels of Financial Markets Efficiency**

Market efficiency means that the stock price fully reflects all available information about the company, economy, and political events in a quick and efficient manner. Thus, the market value represents the fair value, or true value. This value is sufficient to compensate for the risks in stock investment; because the investors and speculators cannot realize abnormal returns. As per Fama's (1970) classification, the market efficiency was divided into three categories, depending on the information available in the market.

#### ***The weak form***

A minimum level of efficiency is defined assuming the current price per share fully reflects all the information contained in the historical prices. It cannot be used as a tool to predict the movement of future stock prices. Therefore, it is not possible for investors to realize abnormal returns using historical stock prices.

#### ***The semi-strong form***

This level of efficiency includes market-priced stocks, which reflects all available information from the published annual reports; or other published information such as information on the annual profits and dividends, interest rates, and exchange rates.

That means that the investor cannot realize abnormal returns compared to others as a result of the analysis of the information in published reports, because prices in the market will be adjusted immediately with any good or bad news contained in the published report.

### ***The Strong Form***

According to this level of efficiency, the share prices in the market reflects all information concerning including public and private information, which includes a strong level of efficiency that the internal information are difficult to use in realizing abnormal returns, because the information reflects an ongoing basis by the market.

### **Palestine Exchange: An Overview**

Palestine Exchange was founded in 1995 as a private company within an agreement with the Palestinian government after the Palestinian territories was autonomous in order to provide a safe and favorable investment environment. On February 18<sup>th</sup>, 1997, trading begun with several companies. After that, the number of companies listed in the stock market increased to 48 companies as of April 30<sup>th</sup>, 2015. A lot of developments took place in the stock market during the past years, such as inserting control program “SMARTS” to control the daily trading movements, the online disclosure systems, the launch of online trading service, and the implementation of cash settlement. Furthermore, in 2014, bonds started trading for one company in the market. This development played a role in improving the efficiency of financial market.

In the beginning, the stock market trading was under the Ministry of Finance control. After the establishment of the Capital Market Authority in 2005; it became responsible for controlling the Palestine Exchange. The Palestine Exchange was made public in 2010 in order to apply the rules of corporate governance. The 48 companies trading in the stock market are divided into five sectors: banking and financial services, insurance, investment, industry, and services. A company has listed its bonds on the market. There are eight companies working as brokerage companies.

The Jordanian dinar and the US dollar are the trading currencies in the market. The indicator for Palestine Exchange is Al-Quds index; which consists of 15 companies representing all market sectors. The gross value of securities is 3.2 billion US\$, with more than 1.63 billion securities and 73,959 investors as of 2014. Furthermore, the total dividends of listed companies in the Palestine Exchange from 2006 to 2010 reached to 636,630,579 US\$ (454,819,724 US\$ as cash dividends; 181,810,855 US\$ as shares dividends) , while the dividends as of 2014 were 171,537,456 US\$ (148,464,041 US\$ as a cash dividends; 23,073,415 US\$ as shares dividends).



## METHODOLOGY

The primary data of this study was collected from the Palestine Exchange, the annual reports of the companies listed, and their websites. The study population is all the companies that have cash dividends announcement from 2006 – 2014, this period was characterized of relative calm in Palestine, especially the West Bank. There are ninety seven (97) events throughout the study period. We removed companies that have no daily trading on the company stock through the event window. We also removed one event, because the stock stopped trading one month before the event date. We also removed another event from the sample because the company announced cash dividends in the same month of being listed in the stock market. The total number of events used in the analysis were sixty within nineteen companies for nine years.

The event study was used to examine the effect of cash dividends announcement on the stock prices, as follows:

**First**, determination of the event date, which is the announcement date of cash dividends, for all companies that have been selected within the criteria, and that is in each year of the study period. This day is called “day zero”. We have 60 events for cash dividends announcement in Palestine Exchange from 2006 to 2014.

**Second**, determination of the (Event Window), which is the period when the statistical test will be conducted to determine the effect of cash dividends announcement on stock returns for selected companies. The study will use event window from -10, +10; ten days before the event date “day zero” and ten days after.

**Third**, calculation of the daily abnormal return for company's stock in the study years; and in order to do that, we follow the steps listed below:

We calculated the actual return for companies and for stock market “index” for the study estimation period days using the following equation:

$$R_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}} \quad (1)$$

Whereas:

$R_{it}$  = the actual return of the company stock  $i$  on the day  $t$ ,  $P_{it}$  = closing price of the company's stock  $i$  at the end of the day  $t$ ,  $P_{it-1}$  = closing price of the company's stock  $i$  at the day  $t-1$ .

After that, we calculate the expected return per stock for each company. In this study, the (market model), as the most popular in practice, was used to find the expected return during the event window, and the model is as follows:

$$E(R_{it}) = \alpha_i + (\beta_{it} * R_{mt}) + \varepsilon_i \quad (2)$$

$\alpha_i$ : represents the constant in the equation that is the return achieved regardless of the relationship between the return on the stock market and the return on the company's stock  $i$ .

$\beta_{it}$ : represents the slope of the linear relationship between the return on stock  $R_{it}$  and the return on the market portfolio " $R_{mt}$ ".  $\varepsilon_{it}$ : random error. The  $\alpha_i$ ,  $\beta_i$  are estimated by taking 245 days before the event window for each company in all of the years and the use of simple regression model to calculate it. During the study period; the actual return for the company stocks and for the market portfolio were calculated.  $R_{mt}$ : is the actual return on the market portfolio.

Now we have the actual return and expected return for the companies. We can determine the abnormal return via equation (3):

$$AR_{it} = R_{it} - E(R_{it}) \quad (3)$$

Where:  $AR_{it}$  = is the abnormal return on the day t.  $R_{it}$  = the actual return on the day t.  $E(R_{it})$  = the expected return on the day t: which calculated from equation (2).

**Fourth**, calculate the Average Abnormal Return (AAR) for day t as in formula (4) in all years.

$$AAR_T = \sum \frac{AR_{it}}{N} \quad (4)$$

**Fifth**, find the cumulative average abnormal return (CAAR) for every day in the study window period. The (CAAR) was determined using formula (5):

$$CAAR = \sum_{i=1}^n AAR_{it} \quad (5)$$

Hence, we have twenty one views for (CAAR), depending on the number of window days.

**Sixth**, one sample of the T-Test was used to test the hypothesis using the SPSS software to see whether or not the values of CAAR possess a significant statistical difference from Zero. We can then reformulate the hypotheses in the following manner.

$$H_0: CAAR = 0$$

$$H_1: CAAR \neq 0$$

Where  $H_0$  indicates that there are no statistically significant differences between the cumulative average abnormal return (CAAR) and zero. Thus failure to achieve abnormal returns. The  $H_1$  indicates a statistical significant differences between the cumulative average abnormal return (CAAR) and zero and thus achieve abnormal returns.

## ANALYSIS AND DISCUSSION OF RESULTS

The results of this research are provided according to the aforementioned hypotheses test. The main objective of the research is to examine whether or not the cash dividends announcement has a significant effect on the stocks prices.

Table (1) presents the statistics of Average Abnormal Return (AAR) for the 21 days study window.

Table 1: Average Abnormal Return (AAR) Results

Day	AAR					
	Min	Max	Mean	Standard Deviation (SD)	t Value	Sig. (2 tailed)
-10	-0.02	0.02	0.0029	0.00865	1.463	0.161
-9	-0.01	0.03	0.0023	0.01167	0.854	0.404
-8	-0.01	0.02	0.0015	0.00866	0.734	0.473
-7	-0.04	0.04	0.0016	0.01743	0.408	0.688
-6	-0.03	0.01	-0.002	0.0098	-0.886	0.387
-5	-0.03	0.01	-0.0011	0.01263	-0.383	0.706
-4	-0.02	0.03	-0.0009	0.01205	-0.324	0.749
-3	-0.01	0.05	0.0051	0.01388	1.587	0.13
-2	-0.03	0.03	-0.0023	0.01355	-0.751	0.462
-1	-0.04	0.01	-0.0063	0.01368	-1.992	0.062*
0	-0.12	0.03	-0.0328	0.04191	-3.413	0.003**
1	-0.17	0.01	-0.0172	0.04108	-1.82	0.085*
2	-0.04	0.02	-0.0038	0.01437	-1.164	0.26
3	-0.05	0.04	-0.005	0.01787	-1.217	0.239
4	-0.04	0.02	-0.003	0.01284	-1.03	0.317
5	-0.02	0.05	0.0025	0.01711	0.64	0.53
6	-0.02	0.03	0.0004	0.01193	0.162	0.873
7	-0.03	0.02	0.0002	0.01008	0.081	0.937
8	-0.03	0.01	-0.0041	0.0116	-1.538	0.142
9	-0.05	0.02	-0.0054	0.01804	-1.31	0.207
10	-0.11	0.01	-0.0114	0.02784	-1.739	0.1

\* Significant at 10% level, \*\* Significant at 1% level.

The mean column shows that Average Abnormal Return (AAR) reporting some positive and negative values. It is noticeable that most of the values around the event day are negative. The negative returns could be explained by the public expectations that the announcement might have some negative information on the days around the dividends announcement day. The highest AAR value 0.51% is reported 3 days before the dividends' announcement. The lowest value -3.28% took place on the dividends announcement day (day 0).

The table reveals that cash dividend announcement leads to significant abnormal returns in three days only, i.e. the event day, one day before, and one day after. All the significant returns are negative. In other words, when cash dividend announced, a negative market reaction exists with a significance of 6.2% one day before the announcement day, 0.3% on the announcement day, and 8.5% the following day. Table (2) presents statistical results of the Cumulative Average Abnormal Returns (CAAR).

Table 2: Cumulative Average Abnormal Returns (CAAR) Results

Day	CAAR					
	Min	Max	Mean	Standard Deviation (SD)	t Value	Sig. (2 tailed)
-10	-0.02	0.02	0.0029	0.00865	1.463	0.161
-9	-0.03	0.04	0.0052	0.01462	1.546	0.139
-8	-0.04	0.05	0.0066	0.01855	1.562	0.136
-7	-0.03	0.08	0.0083	0.02658	1.357	0.192
-6	-0.07	0.07	0.0063	0.03095	0.885	0.388
-5	-0.07	0.05	0.0052	0.03233	0.697	0.495
-4	-0.07	0.06	0.0043	0.03005	0.62	0.543
-3	-0.09	0.07	0.0093	0.03378	1.204	0.244
-2	-0.08	0.06	0.007	0.02999	1.017	0.323
-1	-0.1	0.06	0.0007	0.03319	0.097	0.924
0	-0.14	0.03	-0.0321	0.04435	-3.152	0.006
1	-0.18	0.02	-0.0492	0.05229	-4.103	0.001*
2	-0.17	0.01	-0.0531	0.04889	-4.731	0*
3	-0.15	0.01	-0.058	0.04519	-5.599	0*
4	-0.15	0.01	-0.0611	0.04804	-5.543	0*
5	-0.15	0.02	-0.0586	0.04548	-5.613	0*
6	-0.17	0.02	-0.0581	0.04566	-5.55	0*
7	-0.16	0.02	-0.0579	0.04355	-5.8	0*
8	-0.19	0.02	-0.062	0.04912	-5.505	0*
9	-0.18	0.02	-0.0675	0.04906	-5.993	0*
10	-0.28	0.04	-0.0775	0.0714	-4.605	0*

\* Significant at 1% level

It is noticeable that the values of the Cumulative Average Abnormal Returns (CAAR) becomes negative starting from the dividends announcement day and statistically significant at 1% level. The result reveals that there is statistically significant, negative relationship between dividends announcement and abnormal returns starting from the day of dividends announcement. Market reacts negatively to cash dividends after its disclosure.

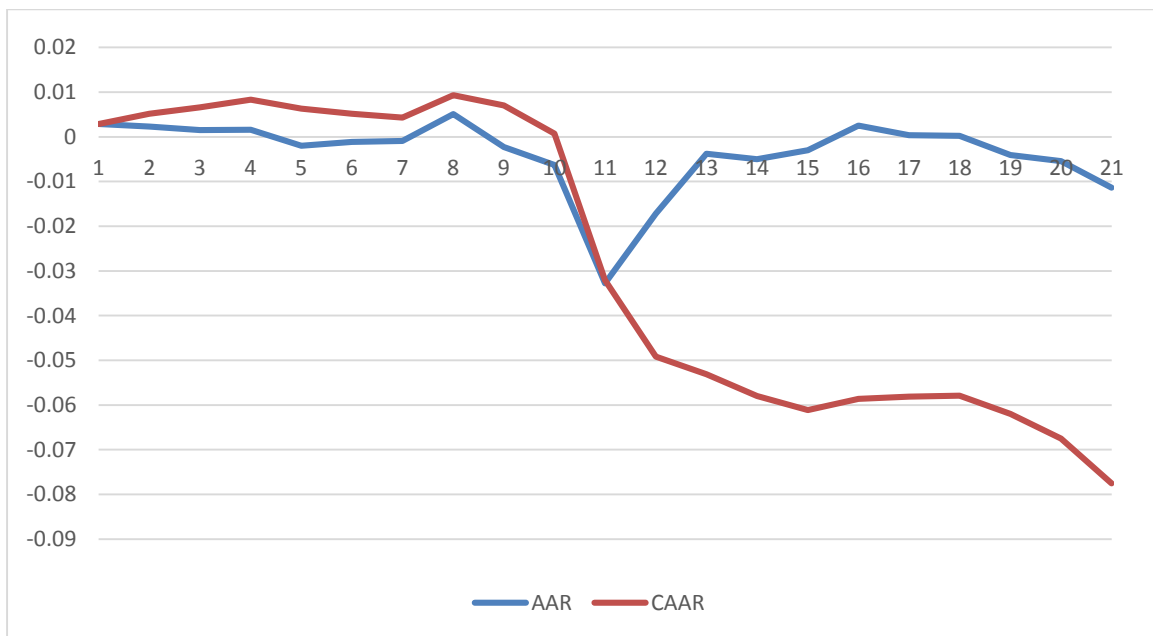
The announcement of cash dividends causes a negative market reaction; this could be explained by the fact that shareholders start to sell their shares, as per Eyüp Kadioğlu et al (2015).

The following studies reported similar results, Eyüp Kadioğlu et al. (2015), that studied the Turkish Stock Market, Vazakidis and Athianos (2010) for Athens Stock Exchange, Mamun et al. (2013) for Bangladesh, Karim (2010) for the London Stock Exchange, Samwel et al. (2014) for Nairobi Securities Exchange and Abbas (2015) for Damascus Stock Exchange. Our study

result contradicted those reported by Akron (2011), Miletic (2011), Suwanna (2012), Perepeczo (2014), Liu and Chi (2014), and Asiri (2014).

Based on the results, we reject the null hypothesis, which indicates that there is no significant effect for cash dividend announcement on Palestine Exchange prices. This means that we accept the alternative hypothesis that indicates the CAAR is statistically significant at 1%. Furthermore, we can conclude that the cash dividends announcement effect the stock price, and the investors can achieve abnormal return. The result indicates that the Palestine Exchange is not an efficient market in the semi-strong form. Figure (1) shows the mean of AAR and CAAR movements during the event window.

Figure 1. AAR and CAAR during the event window



## CONCLUSION

This study analyzes whether or not the Palestine Exchange is an efficient market in semi-strong form in the study period, which extended from 2006 to 2014. In this study, we used the cash dividend announcement as an event that could affect the stock prices as a result of the sensitivity of cash dividends on the investors' responses. We concluded from the result that the Palestine Exchange is not efficient market in semi-strong form in the study period.

In addition to the aforementioned conclusion, we also recommend further studies to include all events in the market to examine their respective influences for events on stock prices.

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