HOW NEWSPAPER-ARTICLE-EVENTS, OTHER STOCK MARKET INDICES, AND THE FOREIGN CURRENCY RATE AFFECT THE PHILIPPINE STOCK MARKET

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ABSTRACT

Eugene Fama in his "Efficient Market Hypothesis" introduced the term newspaper-article-event. The aim of this paper is to find out if newspaper-article-events which are presented and discussed in newspaper articles and which could collage to create an atmosphere of investment, together with the indices of other stock markets (treated as other events) and the performance of the Philippine Peso against the US Dollar (considered as another event) could affect the closing Philippine Stock Market Indices (Phisix) during the 2004 Election Campaign in the Philippines and the 2005 Impeachment Controversy against the Philippine President Gloria Macapagal-Arroyo. Expressivity rating was conceived to measure the expressivity of newspaper articles and, in turn, represent the degree of positiveness, neutralness or negativeness of newspaper-article-events. This research found significant correlations between the closing Forex rate the day before and the present closing Phisix for the two cases. Significant models were also derived incorporating several types of newspaper articles, other stock market indices and the previous Forex rate for the two cases.

INTRODUCTION

Lois Bachelier in the early 1900 observed that stock prices behave randomly. He also asserted that the probability of getting profit in securities investment has the same probability of losing one. In 1965, Eugene Fama adopted Bachelier's Random Walk Theory and advanced his Efficient Market

Hypothesis, stating that the prices of stocks are reflective of all available information and the prices react to new information available in the market.

> In an efficient market, competition among the many intelligent participants leads to a situation where, at any point in time, actual prices of individual securities already reflect the effects of information based both on ***newspaper-article-events*** that have already occurred and on events which, as of now, the market expects to take place in the future (Fama, 1995) (Author's emphasis).

It was Fama who introduced the term newspaper-article-events and it is this study that would make it operational. The aim of this paper then is to find out if newspaper articles that present and discuss events (newspaper-article-events) which could collage to create an atmosphere of investment, together with the indices of other stock markets (treated as other events) and the performance of the Philippine Peso against the US Dollar (considered as another event), could affect the closing Philippine Stock Market Index (Phisix) as the measure of the performance of the Philippine bourse during the 2004 Election Campaign in the Philippines and the 2005 Impeachment Controversy against the Philippine President Gloria Macapagal-Arroyo. These events were marked with tense political controversy that the stock market and Peso-Dollar exchange rates fluctuated wildly. Newspaper-article-events are measured in terms of their expressivity rating. The closing forex rate the day before will be tested together with the effects of expressivity rating of news and opinion articles and the performance of other stock markets.

Information makes the stock market work. In fact, information is the chief ingredient which market players gobble in order to create profitable decisions. These pieces of information are available in company reports, technical and fundamental analyses, and also from newspaper coverage of their company's activities and stock market reports. And as stock investors look for relevant information in newspapers that would guide their investing decisions, they may not help but also gloss over the political events printed on the front page and other sections of the newspaper. Somehow, the pieces of information that they might know may also create apprehensions that would induce them to withhold from investing in stocks in order to protect their money or it could give them the fighting confidence to invest more. Newspaper-article-events could then create an overall impression of how conducive the market is for investing or for momentarily withholding the investment for fear of loss.

On the other hand, market analysts would imply the performance of the stock market and the local currency with the outcome of trading from other nations' capital and money markets. Whether categorically or impliedly stated, the media publishes and airs a rundown of stock market indices

and currency rates, giving an impression that the performance of the stock market and currency would have been affected by other capital and money markets across the seas. These stock market indices could be considered other events which could collage with a variety of newspaper-article-events and create an overall profile of how attractive or unattractive the market has become for investment.

Theoretical Framework

The EMH assumes that a) the market s reacts on information available, b) the prices of stocks reflect all known information, c) since rational investors also know the information available, then the market cannot be outperformed. What makes the market efficient is the available information that induces investors to buy or sell stocks. The kind of information and the reaction of the market would determine the type of market.

The weak form assumes that prices reflect all the information in past prices. Prices appear to wander randomly, virtually and equally likely to offer a high or low return on any particular day, regardless of what has occurred on previous days (Brealey *et al.*, 2004). Prices of securities are therefore independent of each other and technical analysis or charts may not be helpful for an investor to regularly generate excess returns. On the other hand, information from fundamental analysis could help investors gain profit. The weak form subscribes to the Random Walk Theory which assets that "if a stock's price follows a random walk, the odds of an increase or decrease during any day, month or year do not depend at all on the stock's previous price moves... the historical path of prices gives no useful information about the future" (Brealey *et al.*, 2004).

The semi-strong form assumes that prices reflect all publicly available information (Brealey *et al.*, 2004) and share prices rapidly adjust to new information. This would mean that information derived from fundamental analysis or technical analysis would not be able to give excess returns except for public news with which prices consistently reach or adjust at the moment the news was made public. An investor can only beat this market if some private information is secured by a few in order to bet on it for profit.

And the strong form holds that prices reflect all acquirable information (Brealey *et al.*, 2004). In this case all public and private information are available that even inside information cannot make an investor beat the market by making excessive returns. This would mean that the market has no insider trading laws that could make an investor accumulate profit at the expense of others.

An efficient capital market is one in which "there is no piece of information relevant to security price determination that is ignored by the market." Technically, this would mean that the joint

probability density function for security prices at a time assessed by the market on the basis of certain information which the market uses to determine security prices, is equal to the joint probability density function for security prices at a time that is implied by the information (Foster, 1978). Information for EMH is news that may affect the price which is unknowable at present but may appear randomly in the future (Fama, 2008). For this, an efficient market according to Fama was defined as:

> … A market where there are large numbers of rational, profit-maximizers actively competing with each other, trying to predict future market values of individual securities, and where important current information is almost freely available to all participants. In an efficient market, competition among the many intelligent participants leads to a situation where, at any point in time, actual prices of individual securities already reflect the effects of information based both on newspaper-article-events that have already occurred and on events which, as of now, the market expects to take place in the future. In other words, in an efficient market at any point in time the actual price of a security will be a good estimate of its intrinsic value.

What this research would do is to test if newspaper-article-events covered in newspaper articles and the results of other stock markets could affect the performance of the Philippine bourse.

RELATED STUDIES

Factors that affect the Asian stock markets have been covered in other researches. (Attari *et al.*, 2012) titled "The Dynamic Relationship between Stock Volatility and Trading Volume" sought to measure the relationship between trading volume and returns in the Karachi Stock Exchange (KSE100). The Generalized Autoregressive Conditional Heterocedasticity or GARCH test was used to analyze the data from January 2000 to March 2012. The results showed positive relationship between trading volume and returns.

While knowing the trading volume and stock returns is vital from the individual and investment point of view, the factors that determine stock prices is the concern of Nisa and Nishat (2011) work "The Determinants of Stock Prices in Pakistan." The study embarked on determining the empirical relationships between stock prices and several indicators like financial position and macroeconomic factors. This research found out that the company's previous price movements, company size, previous earnings per share are the most important determinant of stock prices in addition to macroeconomic indicators like the GDP growth, interest rate and financial depth.

Relationship among stock markets was the theme of (Wu and Su, 2003) research entitled "Dynamic Relations among Stock Markets." The research employed multiple hypotheses testing which allowed the researchers to isolate the effect of a third market when testing the short-term dynamic relations of two specific markets. The results showed that significant dynamic relations exist among four major international stock markets which even became stronger after the 1987 Asian financial crisis. The research also found out that the cross autocorrelation among large international markets had significant effect on small markets. It also found out that the Japanese market had a fairly strong influence on other markets after the impact of the US market was isolated.

Fang and Loo (2004) in their article "Dollar Value and Returns" established the dynamics of stock returns and foreign exchange outcome and provided empirical evidence that foreign exchange risk has an impact on common stock returns. The research used unanticipated changes of foreign exchange rate to represent exchange risk and nonlinear regression is used to examine the data. The empirical results suggested that exchange risk is priced within the framework of arbitrage pricing theory that cross-sectional variation in foreign exchange exposure can be attributed to differences in export and import ratios of industries.

Linkages between exchange rates and stock prices were also established in the research of (Pan *et al.*, 2007) entitled "Dynamic linkages between exchange rates and stock prices: evidence from East Asian markets." The research examined seven East Asian countries namely Hong Kong, Japan, Korea, Malaysia, Singapore, Taiwan and Thailand within January 1988 and October 1998. Empirical results showed significant causal relation between exchange rates and stock prices of Hong Kong, Japan, Malaysia and Thailand before the 1997 Asian financial crisis. The research was also able to establish causal relations between equity and foreign exchange markets for Hong Kong, Korea and Singapore. No significant causal relationship was found between foreign exchanges and stock prices among these markets during the Asian financial crisis except for Malaysia.

Several studies have also attempted to link public information circulated by the media and the performance of stock markets. The research entitled "Asymmetric Information in the Stock Market: Economic News and Co-movement" (Albuquerque and Vega, 2006) investigated the relationship among real-time foreign and domestic news and economic fundamentals and the stock returns of stock markets in Portugal and the United States. The research found out that US macroeconomic news and Portuguese earnings news have no effect on each country's correlation of stock market performances. On the other hand, US public information affected Portuguese stock market returns but the effect was diminished once the US stock market returns were included in the regression model.

Another study entitled "The Impact of Public Information on the Stock Market" (Mitchell and Mulherin, 1994) studied the relation between the number of news announcements reported daily by Dow Jones and Co. and the aggregate measures and stock market activity including trading volume and returns. This research found out that the number of Dow Jones announcements and market activity were directly related. Likewise, *New York Times* headlines and major macroeconomic announcements and information sources such as dividend capture and triple switching rating were found to influence the financial markets. The study, however, admitted that news and market activity did not have strong correlation and the analysis of the study confirms the difficulty of linking volume and volatility to observed measures of information.

Another study "Is All that Talk Just Noise? The Information Content of Internet Stock Message Boards" (Antweiler and Frank, 2004) attempted to test the financial press claim that internet stock message boards can move markets. The study tried to determine the effect of more than 1.5 million messages posted on Yahoo, Finance and Raging Bull about the 45 companies in the Dow Jones Industrial Average and the Dow Jones Internet Index. Bullishness was measured using computational linguistic methods and "Wall Street Journal" news stories were used as controls. The research found out that stock messages could help predict market volatility and though the effect on stock returns was statistically significant, it was however, small.

Stock market linkages have been established in the research of Wu and Su while the dynamics of foreign exchanges and stock market returns were confirmed in the study of Fang and Loo. The same dynamics was observed in the study of Pan et. al. All the other researches presented here provided the link between public information and the behavior of the stock market. But there are several innovations that the present research can do which these researches were not able to accomplish. First, Albuquerque and Vega found links between real-time news on the stock returns of the Portuguese capitals market and the news on US macroeconomic fundamentals affecting Portuguese stock market. This research looked at events reported in news reports affecting the day's trading. The present research, on the other hand, will look at news published in newspapers or events that transpired the day before but could affect the behavior of the present trading. The research of Mitchell and Mulherin confirmed, in their analysis, the difficulty of linking volume and volatility with measures of information while mining Dow Jones databases. The relationship between stock market performances with other factors has always been the theme of other studies and the work of Attari et. al. and the joint study of Nuri and Nishat are no exemptions. The present study, however, provided a measure to quantitatively assess the expressivity of news and opinion articles so they could be correlated with quantitative variables such as stock market index. While the research of Antweiler and Frank used linguistic methods to examine the message boards, the

expressivity rating which the present research devised and used can measure messages in the interval scale so it could directly be processed for statistical treatment.

With the dynamics of foreign exchange rate and stock performances already established and with the performances of stock markets affecting each other already ascertained, this research will test the combined effects of the expressivity of newspaper articles, the performances of other stock markets and the Peso-Dollar closing rate with the performance of the Philippine Stock Market. All these would be considered events as Fama theorized. The only difference is that newspaper-article-events would be considered a collage of different occurrences which different articles in four leading newspapers covered. These events aggrupate to create a climate which the expressivity rating can measure and which will be tested if they could affect stock market performance.

Method

Information may not only be measured through bits or quantity but also through its expressiveness, hence the author conceived of the concept of expressivity rating (Gabriel, 2011). Expressivity rating can be defined as the measure of the positiveness, neutralness or negativeness of the reportage of the media on certain events, creating media-events. Media-events are occurrences processed by the media through gathering information about them, writing them into preferred journalistic format, editing them to conform to their own media style and disseminating them into specific media-product-information. Since there are different types of media, media-events can be newspaper-article-events which this paper is concerned about, television-documentary-events or radio-news-events among them. Expressivity rating (ER_i) as a form of measurement is the average of the net difference between the Percentage of positively coded media-product-information (P+) and the Percentage of neutrally coded media-product-information (Po) and the net difference between the Percentage of neutrally coded media-product-information (Po) and the Percentage of negatively coded media-product-information (P-) about the media-events (newspaper-article-events in this case.)

$$ER_i = \frac{(P_+ - P_o) + (P_o - P_-)}{2} \tag{1}$$

Where: ER_i = Expressivity Rating

i = Media-event or Newspaper-article-event

P_+ = Percentages of Positive Codes

P_0 = Percentages of Neutral Codes

P_- = Percentages of Negative Codes

The expressivity rating formula (1) can be simplified in the following formula (2) since the Percentage of neutrally coded information (P_0) can cancel each other out.

$$ER_i = \frac{(P_+ - P_-)}{2} \qquad\qquad (2)$$

But for the purpose of clarity the author prefers the use of formula (1), since simply abbreviating it in formula (2), might cause confusion that the percentage of neutral codes (P_0) might be mistaken not to be analyzed and counted in the data analysis anymore. By using the formula, any of the positive, neutral, or negative code can acquire a maximum of 100% at one time, the maximum parameter on either end of the measurement would be -50 and +50 (Figure 1). The indicators of the positive, neutral, or negative codes are imbedded in the coding instrument.

The logic behind expressivity rating is that public or media information are not matter-of-fact pieces of information. When you read the newspapers or watch television news or listen to radio coverage of events, what you read, watch or listen to is processed information. It is not just the facts as they are presented that we as consumer of product-information read, watch, listen or consume but we also take in the slant, emphasis, or bias of the media institution. Therefore, we as media-consumers are not just consuming the quantity of information but we are actually consuming the interpretation of the information-supplier (Gabriel, 2012).

With this form of data analysis, the researcher also devised a Coding Instrument detailed with indicators to define the parameters of Positive, Neutral, and Negative codes. Four daily newspapers were the source of data. These were *The Philippine Daily Inquirer*, *Manila Bulletin*, *Philippine Star* and *Business World*. The first three major broadsheets acquired the highest readership in a survey conducted by the Nielsen Media Research. Of the 2,550 respondents ages 10 years old and above across all socio-economic classes in 22 cities all over the Philippines, *Philippine Daily Inquirer* acquired 54 per cent readership equivalent to about 1.47 million readers, *Manila Bulletin* got 47 per cent readership which translated to approximately 1.27 million readers and *Philippine Star* had 35 per cent readership equivalent to 1.15 million readers (Inquirer most read broadsheet, 2004). *Business World* was a more specialized newspaper on business and economics which businessmen and investors would include as part of their information diet.

The dates of the newspapers from which the data were collected stretched within 2 February – 14 May 2004 (2004 Election Campaign) and 26 July – 9 September 2005 (2005 Arroyo Impeachment). Newspapers published during Saturdays, Sundays, and holidays were not analyzed since there were no trading in both the Philippine Stock Market and the Philippine Dealing System

during those times. The Coding Instrument was pre-tested to three students with outstanding general weighted average and a sample of news and opinion articles taken from the newspapers during the period of study were also subjected for their coding scrutiny. The high rate of similarity of coding between the researcher's coding of articles using the Coding Instrument and the pre-testers of 97.96 per cent to 99.29 per cent would confirm that even if the students would do the coding, a similar coding result would be achieved.

The newspaper articles were categorised and grouped as to Political News (PN), Political Opinion (PO), Political News and Opinion (PS), Economic News (EN), Economic Opinion (EO), Economic News and Opinion (ES), News Political and Economic (NO), Opinion Political and Economic (OO), Overall, (G), Issues only (I), and Front Page articles (F). Two criteria determine if the articles were included in the data analysis: a) Location, b) Content. The location of the articles is actually pre-determined by the editor since reporters work under certain section editors. So a beat reporter who is assigned in the Senate will write political news and those assigned in the Philippine Stock Exchange will write about economic news. In terms of Location, articles that were included were those found in the sections: a) Front Page, b) Second Front Page or Political News, c) Columns or Commentaries, d) Business or Economic News, e) Business or Economic Columns or Commentaries. Articles that were not included were located in the sections: a) Foreign News except those tackling Oil issues, b) Provincial News and Opinions, c) Metro Manila News and Opinions, d) Letters to the Editor, e) Education, f) Sports News and Columns, g) Entertainment News and Columns, h) Travel News and Columns, i) Medical or Health News and Columns, j) Science or Technology News and Columns, k) Real Estate or Property News and Columns, and l) Newsbriefs. In terms of Content, even if articles were located under those sections, still they were excluded in the data analysis if their content included: a) Anniversaries and celebrations, b) Tributes to persons or institutions, and c) Trivias or historical reminiscing except if they were compared and connected with the present events.

The researcher read, analyzed and coded the articles if they were Positive, Neutral or Negative to the government being the primary political machinery and to the economy which the government manages. Since the news may possess various information slants and in turn acquire various codes, the researcher simply based the coding on the first or lead paragraph which summarizes the whole news story and from which the headline was based. In terms of opinion articles, the over all theme of the article was used as the basis for coding and if these opinion articles contained various topics, the basis of coding would be the title of the article. From the codes of the articles the percentages of the number of Positive, Neutral and Negative articles were computed and their expressivity ratings were calculated.

The Phisix and Forex were also taken with the same dates as newspapers being coded, assuming that the articles of the day may have affected the capital market trading except the forex which was taken the previous day. The indices of the Dow Jones, Euro Stoxx, Nikkei, Hang Seng, Taiwan stocks, Kospi, were gathered within the period covered and included in the test of correlation and regression if they would be significant with the other variables. The expressivity ratings, Phisix, Forex and other stock market indices were smoothened using Moving Averages before they were subjected for correlation since the lines that they produced were sometimes too spiky.

The Philippine Capital Market and Foreign Exchange

The capitals market in the Philippines began in 8 August 1927 by five businessmen by five American businessmen, namely: W. Eric Little, Gordon W. Mackay, John J. Russell, Frank W. Wakefield and W.P.G. Elliot. Called the Manila Stocks Exchange, it first held its operation at Binondo, Manila and later transferred in 1992 in Pasig. On a separate path, five businessmen, namely: Hermenegildo B. Reyes, Bernard Gaberman, Eduardo Ortigas, Aristeo Lat and Miguel Campos, organized the Makati Stocks Exchange on 27 May 1963. But with opposition against its creation, it only began operations on 16 November 1965 at Ayala, Makati City. Since the same companies were listed on the same exchanges, unification under one bourse happened in 1993 with the election of officers under one company which was incorporated in the Securities and Exchange Commission the previous year (PSE, 2009).

The Philippine Stocks Exchange (PSE) is a private organisation which was transformed in 2001 from a non-stock, member-governed organization into a shareholder based, revenue-generating corporation after the Securities Regulation Code of 2000 was enacted (PSE, 2009). The Philippine Stock Exchange uses the free float market capitalization which is determined by the amount of shares traded in the market rather than market capitalisation. The Composite Index (Phisix) is determined by the most actively traded stocks which in 2004 included: Aboitiz Equity Ventures, ABS-CBN, Equitable-PCI, Filinvest Land, First Philippine Holdings, Ginebra San Miguel, International Container Terminal Services, JG Summit Holdings, Jollibee Foods, Meralco, Megaworld, Metrobank and Trust Co., Petron, Belle Corp., Digitel Telecom, Ionics, Lepanto Consolidated Mining, Asian Terminal, Banco De Oro, SPI Technologies, Union Bank, Empire East, and Security Bank (PSE reclassifies benchmark to add 6 firms, 2004) The benchmark of Phisix was set at 1,450.91 points (Shares close lower, 2004) and its strategic support level was given at 1,430 points (Stocks seen to consolidate as investors seek fresh leads, 2004).

On the other hand, since the Philippines was a former American colony, the US Dollar, under the Commonwealth period (1935-1941), was the standard equivalent of the Philippine Peso as backed up by 100 per cent gold reserve. After it became independent in 1946, a commission created by

President Manuel Roxas, under the leadership of Finance Secretary Miguel Cuaderno recommended the shift from the dollar exchange standard to a managed currency system with which a central bank would be necessary to implement the shift (BSP 2009). Through a fixed rate of Php2.00-$1.00 and with a managed currency system, the peso was backed up by a gold standard of 7 13/21 grains of gold 9/10 fine. Devaluation came in 1962 at Php3.90-$1.00 at 3 19/21 grains of gold 9/10 fine. The managed floating rate was adopted in 1972 at President Ferdinand Marcos' declaration of Martial Law, where the peso was permitted to seek its own level relative to other currencies depending on the demand and supply of money. (Laman and Laman, 2007). In March 2005 the Philippine Dealing System began operations. As monitored and managed by the Bangko Sentral ng Pilipinas (Philippine Central Bank), the Philippine currency system maintains a floating exchange rate which is determined by the quantity of supply and demand of the Philippine Peso and the US Dollar. This is a market determined system designed to achieve price stability and efficiency. Members of the Bankers Association of the Philippines (BAP) participate in the peso-dollar trading using an electronic platform called the Philippine Dealing and Exchange (BSP, 2009).

With the liberalisation of the capitals and foreign currency markets, claims have been raised that the gloomy specter of the nation's political and economic conditions could be responsible for the plunge of the stock market and the foreign exchange rate. On the other hand, the stable political condition and the booming economy would lift the stock market and foreign exchange rates. The pieces of information that provide a picture of this condition can be obtained from newspapers and it should be tested whether these pieces of information can affect the stock market and currency performances.

Findings

The Philippine Stock Market and the Philippine Peso-US Dollar closed in different directions during the two events (Figures 1 and 2). The closing index as a measure of investor confidence was on an uphill climb after emerging from an all-time low of 1,400 points during the 2004 Election Campaign. It climbed after hitting rock-bottom and the skid was due to the scare that the ruling party, Lakas-CMD and the Arroyo-government squealed in the media that the economy will plunge upon the entry of the opposition bet, the popular actor Fernando Poe Jr. in the presidential race. But the closing index eventually picked up and steadily climbed after a more positive survey result pictured the incumbent, Pres. Gloria Arroyo closing in on the opposition bet. Since the business sector bestowed its support on Arroyo, investments in the capitals and the money market flowed in with more positive news from the government. Quoting from a newspaper report:

> Local business leaders expressed support yesterday for the candidacy of Pres.
> Arroyo who was guest speaker of the closing of the 2nd National conference of
> Employers at Westin Plaza Hotel. The respective heads of the Philippine
> Chamber of Commerce and Industry (PCCI), the Federation of the Filipino
> Chinese Chambers of Commerce and Industry (FFCCI) and the Employers
> Confederation of the Philippines (ECOP) relayed their statements of support to
> Mrs. Arroyo in her bid for a full six-year term (Business groups endorse Arroyo,
> 2004).

In the same manner, after plummeting at an all-time low of Php56.00 to the US Dollar, the Peso
also rebounded with the decline of its figures showing its appreciation to the US Dollar as investor
confidence switched on the side of Arroyo. But after only a year in office, President Arroyo in
2005 was enmeshed in a controversy that alleged her connivance with Comelec Commissioner
Virgilio Garcilliano to rig the 2004 Presidential elections of 1 million votes to her favor. As
Congress, the acting prosecutor in the case, was quagmired whether to adopt the weak Atty. Oliver
Lozano's complaint of bribery and betrayal of public trust or the amended and fortified
oppositions' complaint of corruption, bribery and betrayal of public trust, the debate boiled in a
fiery mode that the Philippine bourse fell to below 1,950 points. The slide in the closing index
showed the erosion of investor confidence which would also show the rattling exchange rate that
fluctuated upwards, indicating the depreciation of the Philippine Peso.

A total of 15,081 political and economic articles (Tables 1 and 2) were analysed and the most
number of these articles came from *Business World* accounting for 29.94 per cent with 4,516
articles. In terms of Political News, *Manila Bulletin* topped the highest contribution with 30.11 per
cent with 1,757 articles and for Political Opinion, *Philippine Star* had the most number with 31.09
per cent with 536 articles. For Economic News and Economic Opinion, *Business World* had the
highest percentage contribution with 42.53 per cent at 2,993 articles for Economic News and 31.55
per cent with 153 articles for Economic Opinion. *Philippine Daily Inquirer* devoted the most
number of articles to specific issues being studied with 28.98 per cent or 972 articles while *Manila
Bulletin* apportioned the most number of articles tackling various issues in its Front Page with
26.16 per cent with 692 articles.

The Phisix and the Forex

The Philippine Stock Exchange (PSE) opens its bell at 9:30 in the morning and wraps up its trading
at 12:10 in the afternoon. With the floating rate as monetary policy and monitored by the Bangko
Sentral ng Pilipinas, the Philippine Dealing System (PDS), which is the electronic-based foreign
exchange trading platform starts its transactions at 9:00 in the morning, breaks for lunch at 12:00

noon, resumes trading at 2:30 in the afternoon and ends its trading at 4:00 in the afternoon. At the close of both transactions the closing Stock Market Index (Phisix) and the losing Peso-Dollar Exchange Rate (Forex) have been achieved. Since the PSE closes earlier at midday than the PDS, then one could suspect that investors may be watching both markets that could affect both markets' performances.

The significant correlation in the opposite direction having a negative relationship would indicate well fitted relationship in the inverse mode (Table 2). High negative correlations were recorded between the closing Phisix and Forex during the 2004 Election Campaign at -0.789 and during the 2005 Arroyo Impeachment at -0.670. This would mean that as the closing Phisix goes up the closing Forex figures goes down or that the Philippine Peso appreciates against the US Dollar. Inversely, as the closing Phisix slides, the closing Forex shoots up or the Philippine Peso depreciates. The two markets, therefore, affect each other inversely in their figures. The good performance of the Philippine Stock Market with its high investor confidence would translate also to a good performance of the Philippine Peso against the US Dollar with its appreciating rate.

If the Phisix and Forex were inversely related in their figures, can the closing Forex rate the previous day affect the Philippine Stock Market trading at present. The significant correlations of -0.802 during the 2004 Election Campaign and -0.648 during the 2005 Arroyo Impeachment would confirm this (Table 3).

Multiple Effects on the Closing Phisix

Closing $\text{Phisix}_{2004} = 7565.018 + 5.376NO + 2.067OO + 0.045DJA - 0.064ESX - 114.063PFX + 26.91510_{error}$

Incorporating all the significant variables, the regression model for the 2004 Election Campaign acquired a significant F-statistics of 39.418 at over 0.001 level with a high Pearson-r correlation of 0.869 (Table 4). The model can account for 75.5 per cent of the cases having an R-square of 0.755. At this time, the stock market was beginning the climb after it skidded to below 1,400 points. Thus one percentage increase in the expressivity rating of News Political and Economic resulted in the increase of the in closing Phisix in moving averages by 5.376 while holding all other variables constant. In the same manner, one percentage increase in the expressivity rating of Opinion Political and Economic articles increased the closing Phisix in moving averages by 2.067 while holding all other variables constant. Newspaper-article-events as covered in political news and political opinions revolved around election campaigns nationally and locally. The race between Arroyo and Poe for the presidential post, the battle for 12 senatorial seats captured most of the political articles. Local coverage of the elections focused on election violence in the provinces.

Since the closing Phisix was on the uptrend after skidded at its lowest within the year began to pick up when surveys showed the incumbent president Arroyo picking up on its electoral and sectoral support. Newspaper-article-events on the economy centered on the economic woes that the ruling party propagandized if, the popular national bet of the opposition, Poe would win the presidency. With the natural trend of the stock market to pick up slowly after it skidded so low, economic news and opinion articles began also to improve on their expressivity regarding the outlook of the economy when the business sector threw their support on the incumbent president. For the effect of other bourse around the world, one unit increase in the Dow Jones Averages led to the increase in the closing Phisix in moving averages by 0.045. The Euro Stoxx, however, had a reverse consequence. One unit decrease in the Euro Stoxx index, resulted in the increase of the Closing Phisix in moving averages by 0.064. Since the Forex rates and the stocks performance were related to each other, one unit decrease in the Forex rate (or its appreciation) resulted in the increase of the Closing Phisix in moving averages by 114.063.

$$\text{Closing Phisix}_{2005} = 9937.628 - 1.554F - 0.062NK - 128.929PFX + 17.06638_{error}$$

On the other hand, the closing Phisix, during the 2005 Impeachment Controversy, was moving downward. Incorporating all the significant variables with F-statistics of 38.927, the model was significant at over 0.001 level with Pearson-r correlation of 0.895 (Table 5). One percentage increase in the expressivity rating of Front Page articles which carried the issues of the Arroyo impeachment reduced the closing Phisix in moving averages by 1.554 while holding all the other variables constant. Newspaper-article-events which were captured in front page articles during this period centered on the senate and congressional hearings on the allegations about anomalies during the 2004 elections leading to the impeachment hearing of the incumbent president Arroyo. Due to the counter publicity measures of the government to answer the allegations against the president, the expressivity rating of these articles picked up but it was not enough to arrest the downslide of the closing Phisix during this period. The effect of the Japanese Nikkei showed that one unit in increase in its closing index decreased the performance of the closing Phisix in moving averages by 0.062. The Forex at this time, was on the uptrend or on its depreciation level. Thus, one unit increase in the Forex rate (or its depreciation) during the previous day's transaction, downgraded the performance of the closing Phisix in moving averages by 128.929.

CONCLUSION

This research was conducted with the aim of finding out the combined effects newspaper-article-events measured in expressivity rating and the performances of other stock markets (other events) and the performance of the Philippine Peso against the US Dollar the previous day (another event)

on the performance of the Philippine Stock Market measured in closing Phisix. This research has confirmed the inter-relationship of the performances of the stock market and foreign exchange rate. A good Peso-Dollar rate the day before could result in a good performance of the Philippine stock market or boost investor confidence at present. The significant correlations and multiple regression models show that during the 2004 Election Campaign in the Philippines and the 2005 Impeachment Controversy against the Philippine President Gloria Macapagal-Arroyo newspaper articles of political and economic nature affected the performance of both the Philippine Stock Market. The performances of other stock markets were also shown to have affected the performance of the Philippine Stock Market together with the expressivity rating of newspaper reports which generated higher multiple regression coefficients all the more when the Peso-Dollar rate during the previous transaction day was included.

As regards Fama's theory, this research has the following implications. Falling stock market indices are actually not a cause for panic nor would it be a sign of total economic slump. The plummeting stock market indices are signs of souring investor confidence. This would simply mean that stocks investors and brokers are shying away from betting their money on the stocks since they are apprehensive of low returns. But this does not mean a thoroughly economic downfall. In fact, risky, entrepreneuring stocks investors would await for this slump for this would mean that they could crumb over the spoils of these slumped stock prices, pour their money into them and wait for prices to go up in order to make some profit. They could make more money than on ordinary days. But as the investments begin to pick up so will the stock market indices as investor confidence increases. Prices of stocks would also begin to rise. Investor confidence would plateau and rattle down again. And so the cycle goes on. The fluctuation of the stock market index was actually necessary in the same manner as the share prices also needed to vibrate so that others would make money and others would lose theirs. If share prices were stocked on only a single price and there is no occasion for it to fluctuate, then what is produced is a dead market and no investor in his or her right mind would ever bet his or her money in it for it would never go up or decline anymore. But in this cycle of up and down, there comes the sudden crash or wild vibrations (Gabriel, 2010).

In 1965, Eugene Fama of the University of Chicago Booth School of Business also argued for the Random Walk Theory of Bachelier and advanced his "Efficient Market Hypothesis," stating that the prices of stocks are reflective of all available information and the prices react to new information available in the market.

Information, therefore, is the life blood of the stock market. In fact, it is the pieces of information that market players feast on. It is these pieces of information that they bargain, buy or sell. While investors react to new information, a piece of information positive to a stock would prove valuable

to cushion the price of that particular stock. In the same manner, negative news on a definite stock would depress its price. While information makes the price fluctuate, it is actually information that investors buy and sell. In this regard, there are three things definitely particular about Fama's work on the stock market behavior. The literature is basically concerned with a) intrinsic information that affects the b) price of c) specific stocks (Gabriel, 2010).

What the present research has proven, however, is that there are pieces of information extrinsic to the market of stocks or currencies that would affect the movement of indices or rates. Fama's works assume that there are pieces of information that are specific to stocks and intrinsic to the equities and currency markets. The results of technical analysis are bits of information that trend the movement of past and present stock prices which could help investors pattern their future investments. The outcome of fundamental analysis is a bit of information about specific performances of the company that offers the stocks and would help create a gauge in the determination of stock prices. Likewise, inside information, is a piece of knowledge about occurrences and outcomes that would depict a positive or negative image of the company and would be the basis of investment motivation but this bit of information is momentarily monopolized by a person or a few of them which would give them undue advantage in the trading. These are all intrinsic pieces of information about the market and would directly concern market behavior. But this research has proven that there are extrinsic bits of information outside of the market that affect the movement of the overall trend of the prices of most stocks. These bits of extrinsic information create a climate that paint the overall conduciveness to invest or reclusiveness to withhold investment. This research found out that the bunch or bundles of information with varied subjects or those concentrated on certain political or economic issues are significantly correlated and they possess the tendency to affect the movement of the stocks or currency market. The bunch of information creates a climate that would induce or discourage capital or money market investors of their investment. And these bits of information are collaged in newspaper-article-events: occurrences which are covered, discussed and reported in newspapers or the media. They could be single events or various events that collage to form an overall picture of the climate that would be encouraging or discouraging for strategic investment.

The Efficient Market Hypothesis assumes that information makes the market efficient for no one has the monopoly of information and that no one has the capability to outperform the market. It is presumed that information about the fundamentals of certain companies issuing stocks and the technical analysis of trends and movements of stocks are public information. Even inside information that could give undue advantage to the holder of such information would not be able to totally beat the market if it operates on a strong-efficient mode since the choice of stocks to invest

on is too random and others might bandwagon on one's choice once they observe that it is raking high profit.

Game theory could partly explain this. Suppose one investor is strategizing his or her investment with all other investors. At stake is a 20% decrease in price of a certain stock which could suggest a good buy (Table 6). Since the dictum for stock market investing is to buy low and sell high, the matrix would indicate that with all the rosy information available in the market, purchasing a certain stock would give one investor 20% decrease in price. If he or she would not join the bandwagon, other investors may take advantage of the information and get and a 20% decrease in price while that one investor would end up with nothing. If all of them would choose not to buy the stocks though it is cheap then all of them would get nothing. But since all other investors know that the particular stock was a hot buy, then all strategies would converge to the equilibrium cell of buying the stock and since everyone else bought the stock, they may end up buying it at a higher price since many are buying but there is only one stock available. There is a high demand, but with limited supply.

The same scenario would result in the sell mode (Table 7). Since the rule is to sell high, selling the stock that one investor holds now would be presumed for him or her to acquire 15% profit. If he or she sells his stocks but the rest of the investors didn't, then he or she would be the only one to get the profit. But since others would sell at the same time, the market would be flooded with the same stock trying to sell it while there might not be enough investors to buy it. Then, instead of generating a profit of 15% everyone else sold their stocks at the same price without extra earnings.

The market then is efficient because the information significant to invest is made public and no one has the capability to win outrageously excessive returns over the rest. The trading becomes a skill of bargaining and timing. Extrinsic information which this research has found to be correlated and could affect stock preferences are also public knowledge which no one has monopoly of. The climate which this bunch of information creates may induce investors to bet more of their money or deny the market of their investments.

If you are picking coffee beans, the climate and season would have made the beans ripe and the atmospheric condition of the day would have motivated you to harvest them. In fact you would have already known what to pick by simply looking at the bushes. But because it rained that day, you chose not to pick the beans (Gabriel, 2012).

The stock market index as a measure of investor confidence, therefore, rattles in the upward or downward direction and not on a flat mode over the long term depending on the climate of

investment which newspaper-article-events could paint and which the other stock markets and the foreign exchange could affect. The stock market index fluctuates and vibrates depending on the mood or climate that bundles of extrinsic and intrinsic information paint. Prices of stocks move up or down, so does investor confidence depending on the climate of investment. On the other hand, the Efficient Market Hypothesis also finds confirmation on the assumption that no one would ever outdo the market if it is efficient. It would be noticed that even if the indices of the stock market have correlation with the expressivity rating of certain types and combinations of articles, still different combinations of articles of specific types are correlated with the indices at different events. Events are marked with uniqueness and the expressivity rating of articles (making up newspaper-article-events) that are written to describe or interpret them also uniquely vary that find their correlation and effect with the stock market indices at varying degrees. Different stock markets and their performances which can be considered as different events also affect certain capital markets in different ways at various times. Thus, no one can still definitely predict the indices or prices by regressing the expressivity rating of extrinsic information published in newspapers with the indices of other stock markets and the foreign exchange rate. Randomness still remains as the central feature of the market as Fama characterized it.

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Table-1. Total Number of Newspaper Articles Content Analyzed for the 2004 Election Campaign and 2005 Arroyo Impeachment

Newspapers	Political News	Political Opinion	Economic News	Economic Opinion	Total Pol & Econ	Issues Only	Front Page Only
Philippine Star	1451	536	1489	111	3587	962	657
Business World	1137	233	2993	153	4516	506	582
Manila Bulletin	1757	496	1399	105	3757	914	692
Philippine Daily Inquirer	1490	459	1156	116	3221	972	580
Total	5835	1724	7037	485	15081	3354	2511

N_{2004}= 70 days
N_{2005}=33 days

Table-2. Total Number of Newspaper Articles Content Analyzed for the 2004 Election Campaign and 2005 Arroyo Impeachment

Newspapers	Political News	Political Opinion	Economic News	Economic Opinion	Total Pol & Econ	Issues Only	Front Page Only
Philippine Star	24.87%	31.09%	21.16%	22.89%	23.78%	28.68%	26.16%
Business World	19.49%	13.52%	42.53%	31.55%	29.94%	15.09%	23.18%
Manila Bulletin	30.11%	28.77%	19.88%	21.65%	24.91%	27.25%	27.56%
Philippine Daily Inquirer	25.54%	26.62%	16.43%	23.92%	21.36%	28.98%	23.10%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

N_{2004}= 70 days
N_{2005}=33 days

Table-3. Relationship between the Phisix and the Forex

	Forex Close	Before Forex Close
Closing Phisix 2004 Election	-0.789**	-0.802**
	0.000	0.000
Closing Phisix 2005 Impeachment	-0.670**	-0.648**
	0.000	0.000

First numbers in the cells are Pearson r correlations
  Second numbers in the cells are the significant levels
 **Correlation significant at 0.01 level (2 tailed)
 *Correlation significant at 0.05 level (2 tailed)

Table-4. First Multiple Regression Coefficients of Expressivity Rating Variables, Other Stock Market Indices against the Closing Phisix for the 2004 Election Campaign

Expressivity Rating and Other Stock	Unstandardized Beta	Standardized Beta	T-statistics Significance	Standard Error	Pearson R	R Square	F-statistics Significance

Market Indices							
News Poll and Econ	5.376	0.346	3.881** 0.000	26.91510	0.869	0.755	39.418** 0.000
Opinion Poll and Econ	2.067	0.584	3.537** 0.001				
Dow Jones	0.045	0.161	2.088* 0.041				
Euro Stoxx	-0.064	-0.221	-2.546* 0.013				
Previous Forex Close	-114.063	-0.515	-6.085** 0.000				
Constant	7565.018		7.012** 0.000				

Second numbers in the cells are the significant levels
**Significant at 0.01 level (2 tailed), *Significant at 0.05 level (2 tailed)

Table-5. Multiple Regression Coefficients of Expressivity Rating Variable, Other Stock Market Indices against the Closing Phisix for the 2005 Arroyo Impeachment

Expressivity Rating and Other Stock Market Indices	Unstandardized Beta	Standardized Beta	T-statistics and Significance	Standard Error	Pearson R	R Square	F-statistics and Significance
Front Page Articles	-1.554	-0.239	-2.618* 0.014	17.06638	0.895	0.801	38.927** 0.000
Nikkei	-0.062	-0.497	-5.403** 0.000				
Previous Forex Close	-128.929	-0.501	-5.878** 0.000				
Constant	9937.628		8.179** 0.000				

Second numbers in the cells are the significant levels
**Significant at 0.01 level (2 tailed) *Significant at 0.05 level (2 tailed)

Table-6. Strategy and Pay-off in a the Buy Mode of a Hypothetical Stock Market Investing

		One Investor	
		Buy	Don't Buy
All Other Investors	Buy	+5%, +5%	-20%, 0%
	Don't Buy	0%, -20%	0%, 0%

Table-7. Strategy and Pay-off in a the Sell Mode of a Hypothetical Stock Market Investing

		One Investor	
		Sell	Don't Sell
All Other Investors	Sell	0%, 0%	+15%, 0%
	Don't Sell	0%, +15%	0%, 0%

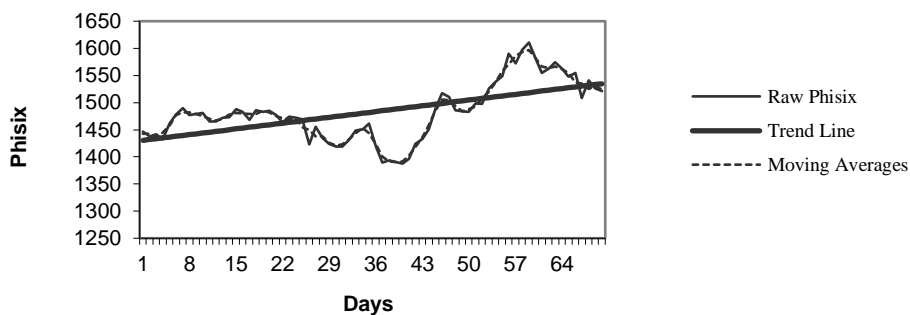**Figure-1.** Closing Phisix During the 2004
National Campaign and Elections

Figure-2. Closing Index During the 2005 Arroyo Impeachment