Comparing the persistence levels of accruals with the persistent levels of cash in forecasting stock prices.

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ABSTRACT

This study attempts to compare the persistence levels of accruals components versus the persistent levels of cash flow components. Many studies have researched the persistence levels of accruals components versus the persistent levels of cash flow components in predicting future share prices. However, previous research has reported mixed results in this area as well as limited studies are available in some cash flow elements and accrual. In Saudi Arabia, evidence of the persistence levels of accruals components versus the persistent levels of cash flow components is very limited. Annual data used in this study were collected from the financial statements of 90 non-financial companies listed on the Stock Exchange of Saudi Arabia from 2007 to 2011. A hypothesis was developed and regression analysis was used to test the hypothesized relationships during various economic conditions; pre-global financial crisis, during the global financial crisis and after the global financial crisis. The regression results found that the accrual components are more persistent than the cash flow components in explaining the variations of the Saudi share price before, during and after the global financial crisis 2008-2009. The results of this paper can be used as evidence to support the theory in financial analysis such as the free cash flow theory and the theory underlying the relationship between earnings and stock price.

Key Words: Share price prediction, Cash flow Components, Accrual components, Saudi Stock Exchange, Global financial crisis.

المستخلص

هدفت هذه الدراسة إلى مقارنة مستويات الثبات لبيانات المحاسبة على أساس الاستحقاق مقابل مستويات الثبات لبيانات المحاسبة على الأساس النقدي لتقدير سعر السهم للشركات غير المالية المدرجة في السوق المالي السعودي الصاعد وذلك خلال ظروف اقتصادية مختلفة أو بمعنى اخر قبل الأزمة المالية العالمية، أثناء الأزمة المالية العالمية، وبعد الأزمة المالية العالمية (2009-2008). العديد من الدراسات بحثت مستويات الثبات لبيانات المحاسبة على أساس الاستحقاق مقابل مستويات الثبات لبيانات المحاسبة على الأساس النقدي لتقدير سعر السهم المستقبلي. إلا أن، أظهرت هذه الأبحاث السابقة نتائج مختلطة (متضاربة) في هذا المجال، كما أن هذه الدراسات والأبحاث كانت محدودة ومقتصرة على بعض عناصر التدفق النقدي والاستحقاق. في المملكة العربية السعودية ، الدراسات حول مستويات الثبات لبيانات المحاسبة على أساس الاستحقاق مقابل مستويات الثبات لبيانات المحاسبة على الأساس النقدي لتقدير سعر السهم المستقبلي محدودة جدا. تم صياغة وتطوير فرضية البحث لاختبار العلاقات المفترضة وتم استخدام نموذج تحليل الانحدار المتعدد. بيانات الدراسة تم جمعها من التقارير المالية السنوية لـ 90 شركة غير مالية مدرجة في السوق المالي السعودي وذلك خلال الفترة المالية 2007-2011. وجدت نتائج الدراسة أن بيانات المحاسبة على أساس الاستحقاق أكثر ثباتًا من بيانات المحاسبة على الأساس النقدي في تفسير التغيرات في أسعار الأسهم السعودية قبل وأثناء وبعد الأزمة المالية العالمية 2008-2009. يمكن استخدام نتائج هذه الورقة كدليل لدعم النظريات في التحليل المالي مثل نظرية التدفق النقدي الحر والنظرية الكامنة وراء العلاقة بين الأرباح وسعر السهم.

الكلمات المفتاحية: توقع سعر السهم، التدفقات النقدية، الأرباح، السوق المالي السعودي، الأزمة المالية العالمية.

1. Introduction

This study attempts to compare the persistence levels of accruals components versus the persistent levels of cash flow components. Based on Andikaputri (2008); Maxwell, (2010); Arthur, Marco and Czernkowski, (2008) and Haofeng, (2008), the persistence levels of accruals components versus the persistence levels of cash flow components means comparing the individual contribution of each component of accrual components versus the individual contribution of each component of cash flow components in predicting future share prices. Some researchers such as Cheng et al. (1996) and Andikaputri, (2008) studied the persistence level between accrual components and cash flow components and found that the coefficient of accrual earnings is greater than the coefficient of cash flow in predicting future share prices. Therefore, the term, persistence level, means the difference between the coefficients of accrual and cash flow components in explaining the price changes. On this basis, this study tests the persistence of the accrual components with the persistence of the cash flow components by comparing the coefficient of the accrual components versus the coefficient of the cash flow components. If the coefficient on accrual components is larger than the coefficient on cash flow components, then it can be said that the accrual components are more persistent than the cash flow components in predicting share prices. Based on the above, this study attempts to compare the persistence levels of accruals components versus the persistent levels of cash flow components. In other words, this study attempts to compare the coefficient of the accrual components versus the coefficient of the cash flow components with the aim of determining which coefficient is considered the largest in explaining the price changes, the coefficient on accrual components or the coefficient on cash flow components. Therefore, this study aims to study the different persistence level between accrual components and cash flow components in predicting Saudi share price before, during and after the GFC.

Saudi Stock Exchange (SSE) is the largest financial market in the Arab world, accounting for 63% of the share volume on all Arabian Stock Exchanges in 2003 (Saudi Arabian Monetary Agency, 2003). In mid-December 2009 its market capitalization was around U.S.D 313 billion (SAMBA Report Series, 2009). Moreover, it is deemed the 8th largest among those of developing countries (Al-Sehali, 2006). The SSE is a good case for investigation due to the lack of studies conducted on the market because it is relatively young and the historical data is limited. Al-Twaijry, (2007) stated that stock trading found its way in the SSE by the end of the nineties. Therefore, the SSE is recent and only developed recently as a recognized market. Also, Aljazira Capital Report, (2010) indicated that the SSE was informal and unorganized before the decade of 1990s. In addition, Al-Rodhan, (2005) declared that firms listed on the Gulf Cooperation Council (GCC) stock exchanges have solid track records; but there is limited historical data to analyze the basis of this remarkable growth. Also, Al-Sehali, (2006) stated that the knowledge of the role of accounting information in explaining changes in share prices of listed Saudi companies in this market is still insufficient. Accordingly, there is a lack of studies conducted on the SSE because the market is relatively young and the historical data is limited.

Like many emerging markets, the Middle East Capital Markets (MECM) responded sharply to the global financial crisis by 15 September 2008, the day that Lehman investment bank filed for bankruptcy after failing to find a buyer (Onour, 2010). The Saudi Arabian stock market in particular fell by 6.5 percent (Olivia and Javier, 2009). In addition, trading volume and value dipped 3.3% and 23.3%, respectively, during 2008 as the global economic crisis gripped KSA equity market. The trading volume and value continued to decline during 2009 with a dip of 3.9% and 35.6% respectively as the investors continued to remain cautious in the wake of global economic crisis (Aljazira Capital Report, 2010). This study attempts to compare the ability of accrual accounting data versus cash flows data in explaining the variations in share price of Saudi listed firms in different economic conditions. Namely, before, during and after the global financial crisis of 2008-2009 (GFC) which started in July 2007 in the United States of America (USA), and which is considered as the deepest one since World War II (SESRIC Report, 2009).

2. Problem Statement

Many studies have researched the persistence levels of accruals components versus the persistent levels of cash flow components. However, previous research has reported mixed results in this area as well as limited studies are available in some cash flow elements and accrual. Several researchers indicated that this issue is still need to be researched. A study by Telmoudi et al., (2010) stated that the former studies could not judge with certainty in favor of any explanatory variable, (cash flow, earnings, accrual…), to forecast the future share prices. In addition, some researchers confirmed that the results of prior research around this issue are mixed, weak and inconsistent and arrive at inconclusive findings such as Alharbi, (2009); Cheng and Shamsher, (2008); Tho, (2007); Anwer and Nainar, (2006) and Norita and Shamsul, (2004). The inconsistency of results could be due to a combination of several factors. Firms in emerging market are mixed in nature, mostly newly listed and have volatile earnings. Also, emerging markets are different from developed markets in a number of respects: for instance, transparency, liquidity, level of corruption, volatility, governance taxes and transaction costs.

In Saudi Arabia, evidence of the persistence levels of accruals components versus the persistent levels of cash flow components is very limited. Al-Sehali, (2006), mentioned that future studies in the Saudi context might want to consider the investigation of the reasons for earnings' superiority over cash flows in the SSE. In addition, Al-Sehali and Spear, (2004) declared that, to date, the extant literature lacks significant empirical evidence on the current role of accrual and cash flow components in security valuation in the SSE, despite its status as one of the largest (by market capitalization) among emerging markets.

Besides that, there is a lack of studies conducted around this issue during the financial crisis periods. Accounting information is very important to predict share price. However, this prediction is affected by other factors such as financial crises. For instance, Muliati et al.,

(2009) found that earnings and book value as well as a non - accounting beta for firm valuation in Malaysia are more valued during the financial crisis as compared to after the financial crisis (1997-1999). Another example from Saudi Arabia, Al-Twaijry, (2007) found that earnings per share and dividends per share are not always good predictors of the changes in the share price, where the explanatory power of these variables was 80 percent before the domestic crisis which took place in Feb 2006 in the SSE and suddenly declined by 64 percent to 29 percent during the crisis and continued decreasing after the crisis to 4 percent. In addition, Chotkunakitti, (2005) pointed out that cash flow ratios were not a good predictor of future cash flows due to the impact of the Asian economic crisis, which had an effect on the predictive power of accounting data of Thai listed companies. Another study conducted on the Stock Exchange of Thailand by Narktabtee, (2000). Narktabtee revealed that the accounting information had more information content when the economic situation was normal and lost information content when the Asian economic crisis occurred.

On this basis, the current study focuses on examining the persistence levels of accruals components versus the persistent levels of cash flow components in predicting future Saudi share prices before the GFC, during the GFC and after the GFC. Therefore, this research differs from prior studies because previous studies focused on normal horizons, while the current study instead focuses typically on the crisis horizons. In other words, most studies related to the issue of the comparative ability of accrual and cash flow components to forecast future share prices were conducted in the normal economic situations, while the current study investigates this issue for the crisis periods and non-crisis. In light of the preceding argumentation, it can be concluded that there is a lack of research evidence in Saudi Arabia about the issue. In addition, the findings of the previous studies were non-consistent and therefore, this issue is still needs to be researched.

3. Objectives of the Study

This study aims to compare the persistence levels of accruals components versus the persistent levels of cash flow components in predicting Saudi share price. As discussed previously, the term, persistence level, means the difference between the coefficients of accrual and cash flow components in explaining the price changes. On this basis, this study attempts to compare the coefficient of the accrual components versus the coefficient of the cash flow components with the aim of determining which coefficient is considered the largest in explaining the price changes, the coefficient on accrual components or the coefficient on cash flow components. Based on the above, the research objective can be formulated as follows:

To study the different persistence level between accrual components and cash flow components in predicting Saudi share price before, during and after the GFC.

4. Significance of the Study

Investigation of the ability of accrual components against cash flow components in predicting future share prices has a special importance because previous research reported mixed and unexpected findings. In addition, several researchers indicated to the importance of this topic. For instance, Dimitropoulos and Asteriou, (2009) indicated that the relationship between earnings figures and stock returns has been a topic of international research since decades, previous studies resulted in mixed results regarding the usefulness of models which were using earnings levels or earnings changes as the explanatory variable. Eko, (2009) mentioned that the nature of the relationship between accrual and cash flow data and share price of the firms for this purpose, particularly in emerging markets, has yet to be determined with any degree of certitude.

Maligi, (2006) pointed out that the topic of factors influencing share prices is one of the most frequently discussed. However, most studies focused on that phenomenon in European countries, resulting in a clear dearth in emerging countries. It is difficult to generalize European study's findings on different environments because of the differences of both legislative systems and accounting policies. Therefore, studying this topic has become important (Maligi, 2006). Kotb, (2004) indicated that findings of prior research on the relationship of share prices and accrual and cash flow components are mixed. Kotb also added that studies of the accrual and cash flow components effect on share prices represent an increasing importance whether in mature market or emerging market. Also, Schadewitz, Kanto, Kahra and Blevins, (2002) mentioned that there is a need to research the relationship between accrual and cash flow components and share price in emerging stock exchange. Additionally, Lee, (1987) indicated that the development of effective accounting infrastructure is necessary for emerging markets until they become efficient in their activities.

In addition, the SSE is a good case for investigation, especially under the effect of the GFC. The SSE is very important to conduct studies because it is considered one of the emerging markets. According to Bruner, Conroy, Javier, Mark and Wei Li, (2002) emerging market studies are gaining importance in accounting and finance studies for a number of reasons. First, there is no generally accepted model for share price valuation in emerging markets. Second, emerging markets are different from developed markets in a number of respects: for instance, transparency, liquidity, level of corruption, volatility, governance taxes and transaction costs. Third, the flow of capital into and the growth of investors numbers in emerging markets have been very substantial (Bruner et al, 2002).

The study's significance also results from the scientific findings of studying the impact of accrual accounting data in comparison with cash flow data on the stock market value behavior. The scientific findings will help the corporations to know how to make the fit economic decisions for achieving high stock market value, and therefore achieving owners' goals, investor's goals, and all other relevant categories including state holders. Therefore, the corporations' knowledge of the ability of the variables that explain the share price changes, will help the corporation to decrease the error rate in stock price estimation. This study is also

expected to serve the financial report users, in particular the financial analysts who depend on accounting data to define stock prices.

5. Methodology

5.1 Research Model

The research Model is used to investigate the ability of a combination of accrual components and cash flow components in predicting future share prices before, during and after the GFC. This model is based on the free cash flow theory and the theory underlying the relationship between earnings and share price. The model is used with the CFC Model to investigate the incremental information provided by accrual components beyond cash flow components. In other words, to examine if the addition of accrual components to cash flow components would give better predictions of future share prices than would cash flow components alone. Figure 1 shows the Full Model:
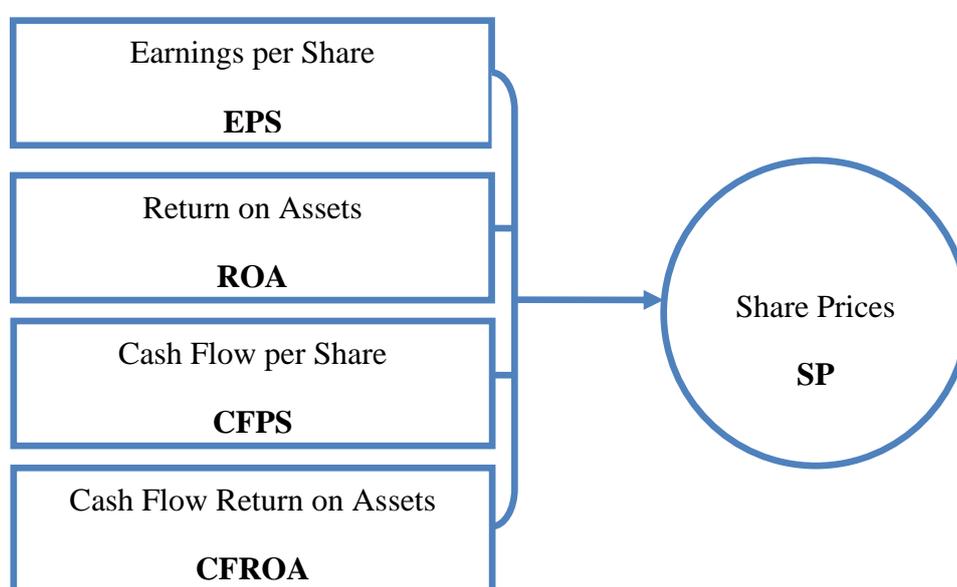

Figure 1: Model of predicting share prices using cash flow and accrual components

The model is based on multiple regression and tested in all economic conditions, including before, during and after the global financial crisis. The Full Model is formulated as follows:

$$SP=a_0+a_1EPS+a_2ROA\ a_3CFPS+a_4CFROA\ +e$$

SP refers to share prices at the end of the year, i.e. at the end of 2007 (before the GFC), at the end of 2008 and 2009 (during the GFC) and at the end of 2010 and 2011 (after the GFC).

EPS refers to earnings per share at the end of the year, at the end of the year 2007 (before the GFC), 2008 and 2009 (during the GFC) and 2010 and 2011 (after the GFC).

ROA refers to return on assets at the end of the year, at the end of the year 2007 (before the GFC), 2008 and 2009 (during the GFC) and 2010 and 2011 (after the GFC).

CFPS refers to cash flow per share at the end of the year, at the end of the year 2007 (before the GFC), 2008 and 2009 (during the GFC) and 2010 and 2011 (after the GFC).

CFROA refers to cash flow return on assets at the end of the year, at the end of the year 2007 (before the GFC), 2008 and 2009 (during the GFC) and 2010 and 2011 (after the GFC).

5.2 Research hypothesis

Research hypothesis compared the persistence coefficient of accrual components versus the persistence coefficient of cash flow components in predicting share price. The Full model (Model 3.7), accrual components and cash flow components model, is constructed to test this hypothesis, and regression analysis is conducted to examine the model. The statistical results of the Full model are used to test the hypothesis. The Full model is examined in three ways. Firstly, the model contain one-year of accrual components and cash flow components, namely before the crisis period. Secondly, the model contains two-year of accrual components and cash flow components i.e. during the crisis. Thirdly, the model contains two-year of accrual components and cash flow components i.e. after the crisis.

As discussed in previous chapters and similar to previous studies such as Andikaputri (2008); Maxwell (2010); Arthur et al. (2008) and Haofeng (2008), comparing the persistence of the accrual components with the persistence of the cash flow components means that the coefficient of the accrual components should be compared with the coefficient of the cash flow components before, during and after the GFC. If the coefficient of accrual components is larger than the coefficient of cash flow components before, during and after the GFC, then it can be

said that the accrual components are more persistent than the cash flow components in predicting share prices before, during and after the GFC.

Accordingly, the fourth hypothesis is to compare the persistence coefficient of accrual components versus the persistence coefficient of cash flow components in predicting share price before, during and after the GFC. Based on Andikaputri (2008); Maxwell (2010); Arthur et al. (2008) and Haofeng (2008), who found that the coefficient of accrual earnings is greater than the coefficient of cash flow in predicting future share prices, the accrual components are expected to be more persistent than the cash flow components in explaining the price changes before, during and after the GFC. Therefore, the hypothesis can be developed as follows:

Accrual components are more persistent than the cash flow components in explaining the variations of the share price before, during and after the GFC.

5.3 Data

The study utilizes annual data covering the period of 2007-2011. The choice of this period is grounded on data availability as well as it includes the period of the global financial crisis 2008-2009. The study uses secondary annual data gathered from annual financial reports published on the SSE website. The share price data consists of the closing share price at the end of the year, and they are gathered from the Annual Reports of SSE published on GulfBase Web Site (www.gulfbase.com). The data chosen from financial statement were as follows:

i. Balance sheet from the accounting year 2007 (ended in 31 December 2007) to the accounting year 2011 (ended in 31 December 2011), the variable taken directly from this statement is Total Assets.
ii. Income statement from the accounting year 2007 (ended in 31 December 2007) to the accounting year 2011 (ended in 31 December 2011), the variables taken directly from this statement are earnings per share and net income. Net income is used in this research to calculate the amount of Return on assets (ROA). The ROA is calculated by dividing net income over total assets at the end of the year.
iii. Statement of cash flows from the accounting year 2007 (ended in 31 December 2007) to the accounting year 2011 (ended in 31 December 2011), the variable taken directly from this statement is the cash flow from operating activities. Cash flow from operations is used in this research to calculate the amount of cash flow per share and cash flow return on assets.

5.4 Population and Sampling of the Study

The sample of the companies comprises all non-financial companies, 90 non-financial companies, listed in the SSE and which data available and with December 31 fiscal year end over the period of 2007-2011.

Table 1: Distribution of companies into sectors in the SSE

ID	Sector	Number of Companies
	Non-Financial Companies	
1.	Media and Publishing	3
2.	Industrial	13
3.	Cement	8
4.	Services	8
5.	Electrical	2
6.	Agriculture and Food Industries	14
7.	Telecommunication and Information Technology	4
8.	Hotel and Tourism	2
9.	Multi-Investment	7
10.	Industrial Investment	11
11.	Building and Construction	13
12.	Real Estate Development	7
13.	Transport	4
Financial Companies		
14.	Banks and Financial Services	11
15.	Insurance	21
Total Companies Listed on the Saudi Stock Exchange		**128**

Source: (Saudi Stock Exchange website, 2011)

The financial companies are excluded from the sample size because they apply the International Accounting Standards (IAS) whereas, the non-financial companies apply the Saudi Accounting Standards (SAS). All non-financial companies are subject to the supervision and the control of the Saudi Organization for Certified Public Accounting (SOCPA) which prepares and develops SAS as well as it has all powers to oblige the companies which are subject to its control to apply SAS (Saudi Arabia Economics Report, 2011). The financial companies are not subject to the control of SOCPA but they are instead subject to the control of the Saudi Arabian Monetary Agency (SAMA). Therefore, SOCPA does not have the powers to oblige the financial companies to apply the SAS. On this basis, the current study examines only the non-financial companies listed on the SSE.

A longitudinal study has been chosen to correlate with all non-financial companies listed on the SSE and the period of five years would be sufficient to monitor the comparative ability of accrual components and cash flow components to predict share price. The sample consists of 90 non-financial companies listed on the SSE during the period of 2007-2011. The firms were selected based on the following criteria:

i. The firms were listed on the SSE starting from January 2007 until 2011.

ii.   The firms that have necessary financial statement data.
iii. Share price data are available for the company selected during the sample period of 2007-2011.

Based on the criteria mentioned above, the company selected must be active in the business and trades on the SSE. That means, the application of the models is limited to the companies whose shares are traded on the SSE regularly during the study period. In other words, trading in shares of the company under-study has not been broken off during the study period, and the company has not been consolidated with other companies, or has been liquidated.

Based on these criteria, 90 samples of observations were selected for the period of pre-global financial crisis 2007. Namely, 90 companies are selected for the year 2007 which represents the period of pre-global financial crisis. In addition, 180 samples of observations were selected for the period of during the global financial crisis i.e. 90 companies are selected for the year 2008 and the year 2009 which together represent the period of during the global financial crisis. Also, 180 samples of observations were selected for the period of post financial crisis, i.e. 90 companies were selected for the year 2010 and the year 2011 which together represent the period of post global financial crisis (See Table 2).

Table 2: Sample selection of the study period, before, during and after the crisis

Fiscal Year	2007	2008	2009	2010	2011
Number of companies	90	90	90	90	90
Number of observations	90	180		180	
Periods	Pre-global financial crisis	During the global financial crisis		Post the global financial crisis	

5.5 Methods of Data Analysis

A statistical analysis was done to achieve research objective, including Pearson correlation Analysis, multiple regression analysis. Linear regression analysis and correlation analysis were used by majority previous studies to investigate the relationship of accounting data and share price such as Brown (1970); Kormendi and Lipe (1987); Ball and Brown (1968); and Board and Day (1989).

Correlation Analysis is used in this research to determine the correlation relationship between accrual accounting data and cash flow data (independent variables) and share price (dependent variable) and to define the relationships direction (positive or negative).

According to the rule of thumb proposed by Hinkle et al. (2003), the relationships between accounting data and share price is considered very weak if the correlation coefficient (R) is less than or equal to 0.20; greater than 0.20 and less than or equal to 0.40 is weak; greater than 0.4 and less than or equal to 0.60 is moderate; greater than 0.6 and less than or equal to 0.80 is strong and greater than 0.8 is very strong. In addition, the relationship between accounting data and stock price is considered negative if the correlation coefficient (R) is less than zero; and positive if (R) greater than zero (Hinkle et al., 2003). Simple and Multiple Regression Analysis are also used in this study to determine the comparative ability of accrual components and cash flow components in predicting share prices. They are used to examine the direct effect of the independent variable, accrual accounting data and cash flow data, on the dependent variable, share price.

6. Findings and Discussion

The research hypothesis is to compare the persistence coefficient of accrual components versus the persistence coefficient of cash flow components in predicting share price before, during and after the GFC. It assumes that the accrual components are more persistent than the cash flow components in explaining the variations of share price before, during and after the GFC. This research defines accrual components such as earnings per share (EPS) and return on assets (ROA) as well as it defines cash flow components such as cash flow per share (CFPS) and cash flow return on assets (CFROA).

As mentioned in previously, the accrual components are expected to be more persistent than the cash flow components in explaining the price changes during the crisis period and non crisis. To compare the persistence of the accrual components with the persistence of the cash flow components, the coefficient of the accrual components should be compared with the coefficient of the cash flow components. If the coefficient on accrual components is larger than the coefficient on cash flow components, then it can be said that the accrual components are more persistent than the cash flow components in predicting share prices. In the F test, if the F significant value is less than 0.05, the alternative hypothesis cannot be rejected. Accordingly, independent variables statistically altogether can influence dependent variable. Table 3 shows the regression results for the Full Model before, during and after the GFC.

Table 3: Regression Results for Full Model before, during and after the GFC

	Full Model		
	Before GFC	*During GFC*	*After GFC*
F-ratio	51.939	56.585	143.540
Model Sig.	.000	.000	.000
R	.842	.751	.875
R²	.710	.564	.766
Adjusted R²	.696	.554	.761
t value (EPS)	6.512*	11.689*	14.088*
Parameter Sig (EPS)	.000	.000	.000
t value (CFPS)	.243	.058	1.023
Parameter Sig (CFPS)	.809	.954	.308
t value (ROA)	1.451**	2.219**	3.038*
Parameter Sig (ROA)	.015	.028	.003
t value (CFROA)	.264	1.254	.831
Parameter Sig (CFROA)	.793	.211	.407
Number of Cases	90	180	180

*, ** Statistical significance at the 0.01 and 0.05 levels respectively.

In Table 3, the p-value is .000 (P< 1% level) for the full model. It means that independent variables consisting of EPS, ROA, CFPS and CFROA simultaneously and significantly influence dependent variable, share prices, before the GFC. During the GFC, the p-value is .000 (P< 1% level) for the full model during the GFC. It means that independent variables, EPS, ROA, CFPS and CFROA, simultaneously and significantly influence dependent variable, share prices, during the GFC. After the GFC, the p-value is .000 (P< 1% level) for the full model after the GFC. It means that independent variables consisting of EPS, ROA, CFPS and CFROA simultaneously and significantly influence dependent variable, share prices, after the GFC.

In addition, the Adjusted R^2 presented in Table 3 is .696 before the GFC, which implies that accrual and cash flow components are significant in predicting share prices. The cash flow components and accrual components explain 69.6% of the variations in next-period share prices. During the GFC, the Adjusted R^2 presented in Table 3 is .554, which means that accrual and cash flow components are significant in predicting share prices. The cash flow components and accrual components explain 55.4% of the variations in next-period share prices. After the GFC, the Adjusted R^2 presented in Table 3 is .761, which means that accrual and cash flow components are significant in predicting share prices. The cash flow components and accrual components explain 76.1% of the variations in next-period share prices.

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Table 3 also shows the coefficient and p-value results (Parameter Sig) of all independent variables (EPS, ROA, CFPS and CFROA). Before the GFC, the t-statistic of the EPS is 6.512, which is positive, and the sig value is .000, which is significant. This finding means that EPS are found to have a significant and positive influence on SP at a significance level of p<0.01. In addition, the t-statistic of the CFPS is .243, which is positive, and the sig value is .809, which is insignificant. This finding means that CFPS are found to have an insignificant and positive influence on SP. Based on these findings, the coefficient of EPS (The t-statistic is 6.512 with a sig value .000) is significantly larger than the coefficient of CFPS (The t-statistic is .243 with a sig value .809). Therefore, it can be concluded that the earnings per share are larger persistent than the cash flow per share before the GFC. During the GFC, the t-statistic value for the coefficient of EPS is 11.689, which is positive, and the sig value .000, which is significant. Therefore, EPS are found to have a significant and positive influence on SP at a significance level of p<0.01 during the GFC. The t-statistic value for the coefficient of CFPS is .058, which is positive, and the sig value is .954, which is insignificant. This finding implies that CFPS are found to have an insignificant and positive influence on SP.

By comparing these results, the coefficient of EPS is significantly larger than the coefficient of CFPS during the GFC. From that results, it can be concluded that the earnings per share are larger persistent than the cash flow per share during the GFC. After the GFC, the t-statistic of the coefficient of EPS is 14.088, which is positive, and the sig value .000, which is significant. Therefore, EPS are found to have a significant and positive influence on SP at a significance level of p<0.01 after the GFC. The t-statistic of the coefficient of CFPS is 1.023, which is positive, and the sig value .308, which is insignificant. This finding implies that CFPS are found to have an insignificant and positive influence on SP after the GFC. Therefore, the coefficient of EPS is significantly larger than the coefficient of CFPS after the GFC.

For the coefficient of ROA presented in Table 3, before the GFC, the t-statistic is 1.451, which is positive, and the sig value is .015, which is significant. This result means that ROA is found to have a significant and positive influence on SP before the GFC. In addition, the t-statistic of the CFROA is .264, which is positive, and the sig value is .793, which is insignificant. This finding implies that CFROA is found to have an insignificant and positive influence on SP before the GFC. By comparing those figures, the ROA is larger persistent than the CFROA before the GFC. During the GFC, the t-statistic of the ROA is 2.219, which is positive, and the sig value is .028, which is significant. Therefore, ROA is found to have a significant and positive influence on SP during the GFC. In addition, the t-statistic for the coefficient of CFROA is 1.254, which is positive, and the sig value is .211, which is insignificant. Therefore, CFROA is found to have an insignificant and positive influence on SP during the GFC.

By comparing those figures, the ROA is larger persistent than the CFROA during the GFC. After the GFC, the t-statistic of the ROA is 3.038, which is positive, and the sig value is .003, which is significant. This finding means that ROA is found to have a significant and positive influence on SP after the GFC. The t-statistic of the coefficient of CFROA is .831, which is positive, and the sig value is .407, which is insignificant. Therefore, CFROA is found to have an insignificant and positive influence on SP after the GFC. From that results, the ROA is larger persistent than the CFROA after the GFC. Accordingly, the accrual components are

more persistent than the cash flow components in explaining the variations of share price before, during and after the GFC. Therefore, H_4 is supported.

Based on the findings discussed above, it can be seen that both CFPS and CFROA are insignificant in the full model presented in Table 3. This is due to the incremental information provided by cash flow components beyond accrual components. As discussed previously in Table 3, the R^2 of the accrual model (AC model) before the GFC was 70.9%. After adding cash flow components to the AC model (full model), the R^2 increased from 70.9% to 71%, an increase of about 0.1% (very small). During the GFC, the R^2 increased from 55.9% to 56.4%, an increase of almost 0.5% (very small too). After the GFC, the R^2 increased from 76.5% to 76.6%, an increase of almost 0.1% (very small too). From these results, it can be concluded that cash flow components have very weak incremental information content beyond accrual components. Accordingly, both CFPS and CFROA are insignificant in the full model. These findings are in line with Cheng and Shamsher (2008) who found that cash flow components have weak incremental information content beyond accrual components.

Based on the findings of the hypothesis discussed above, the Full model was found to be a significant predictor of future share prices in all prediction periods from 2007 to 2011. Overall, this finding suggests that a combination of accrual components and cash flow components have a significant predictive power for future share prices of Saudi listed companies. In addition, the adjusted R^2 of the Full model for each prediction period was found to be unstable (adjusted R^2 before the crisis was .696, during the crisis was .554 and after the crisis was .761). This means that the explanatory power of the Full model in prediction future share prices was varied over the prediction periods. In summary, the Full model can be used to predict future share prices of Saudi listed companies and the explanatory ability of the models in predicting future share prices differs across periods. However, the model may decrease its explanatory power when the prediction contains a period during the financial crisis.

Based on findings documented earlier, when comparing the coefficient of the accrual components versus the coefficient of the cash flow components, the coefficient of accrual components are greater than the coefficient of the cash flow components for all prediction periods. Accordingly, the accrual components are more persistent than the cash flow components in explaining the variations of the share price. This research finding is consistent with previous research such as Cheng et al. (1996) and Andikaputri (2008), who found that the coefficient of accrual earnings is greater than the coefficient of cash flow in predicting future share prices.

7. Recommendations

Further research can extend this study by replicating the methodology to investigate data of listed companies in the financial sector. Moreover, the data sample can be separated and analyzed by industry. In this way, a contribution could be made for developing a more industry-specific theory. In addition, this research generates prediction models by using simple and

multiple regression model which can be applied to general firms in the Saudi Stock Exchange. Perhaps the prediction model would prove more accurate if a firm-specific model is used, with the data of each firm tested separately. Nevertheless, further research has an opportunity to test longer time periods for the data, which could provide an appropriate prediction model for Saudi listed companies.

The results of this research rely solely on a secondary data method. The findings of this research would be given further credibility by conducting survey research to collect data directly from the users of financial statements or related parties. Further research may provide evidence in practice and users of financial statements could use cash flow predictors in predicting future share prices. It can be seen that the economic condition had an impact on the results of the current research. Extended research could investigate the effect of the economic condition by considering economic indices such as the exchange rate, inflation rate and growth rate, thereby providing a clearer picture of how different economic conditions affect the accounting information to predict future share price. Moreover, it is possible that non-financial information is significant in predicting future share price. Further research may include non-financial data, such as a company's financial policy, government aids and other economic factors in prediction models.

8. Conclusion

The main purpose of this study is to compare the persistence levels of accruals components versus the persistent levels of cash flow components in explaining the variations in the share price of Saudi listed firms before, during and after the global financial crisis (2008-2009). The study concluded that the accrual components are more persistent than the cash flow components in explaining the variations of the Saudi share price before, during and after the global financial crisis 2008-2009.

REFERENCES

Alharbi, Abdullah. 2009. The Differential Weights of Cash Flow-Based Versus Accrual-Based Measures in Valuing Intangible-Intensive and High-Technology Stocks. Journal of Business and Policy Research. Vol. 4 No. 2, Pp. 124-137.

Aljazira Capital Report. 2010. The Financing Role of the Saudi Capital Market. Promising Prospects. Research Department. Economic Report. Available online at: http://www.aljaziracapital.com.sa/jaziracapital/report_file/ess/ECO-4.pdf. Access date: 13 February 2018.

Al-Rodhan, Khalid R. 2005. The Saudi and Gulf Stock Markets: Irrational Exuberance or Market Efficiency? Center for Strategic and International Studies (CSIS). Available online at: http://csis.org/files/media/csis/pubs/051025_saudi_gulf_mrkts.pdf. Access date: 13 February 2018.

Al-Sehali, M. and Spear, N. 2004. The Decision Relevance and Timeliness of Accounting Earnings in Saudi Arabia. The International Journal of Accounting. Vol. 39. No. 2. Pp. 197-217.

Al-Sehali, Mohammed S. Al-Qabani. 2006. The Value Relevance of Accrual Components in Saudi Listed Firms. Journal of King Saudi University. Vol. 18. No. 2. Pp . 41-62. Riyadh. Saudi Arabia.

Al-Twaijry, Abdulrahman A. 2007. Saudi Stock Market Historical View and Crisis Effect: Graphical and Statistical Analysis. Accounting Department, College of Business and Economics, Qassim University, Saudi Arabia. Available online at: http://www.slideshare.net/Zorro29/saudi-stock-market-historical-view-and-crisis-effect. Access date: 13 February 2018.

Andikaputri Kusuma Wardhani. 2008. Predicting Future Operating Cash Flows and Factors that Influence Future Operating Cash Flows: An Empirical Examination of Manufacturing Company Listed on the Jakarta Stock Exchange. Islamic University of Indonesia. Yogyakarta.

Anwer, S. A. and Nainar, S. M. K. 2006. Further Evidence on Analyst and Investor Misweighting of Prior Period Cash Flows and Accruals. The International Journal of Accounting, Vol. 41, Issue 1. Pp 51-74.

Arthur, Neal. Chen, Marco and Czernkowski, Robert. 2008. The Persistence of Cash Flow Components into Future Earnings. Faculty of Economics and Business. The University of Sydney. Available online at: http://www.afaanz.org/openconf/2008/modules/request.php?module=oc_proceedings&action=view.php&a=Accept+as+Paper&id=515. Access date: 3 Feb 2018.

Ball, R. and Brown, P. 1968. An Empirical Evaluation of Accounting Income Numbers. Journal of Accounting Research. Pp. 159 –178. Available online at: http://www.chicagobooth.edu/pdf/BallBrown1968.pdf. 3 Feb 2018.

Board, J.L., Day, J. F. S. 1989. The Information Content of Cash Flow Figures. Accounting and Business Research. Vol. 20. Pp. 3-11.

Brown .1970. The Impact of the Annual Net Profit Report on the Stock Market. The Australian Accountant. July: 277-83.

Cheng C.S.A., Chao S.L. and Schaefer T.F. 1996. Earnings Permanence and the Incremental Information Content of Cash Flows from Operations. Journal of Accounting Research. Vol. 34. No. 1. Pp. 175-181.

Cheng Fan Fah and Shamsher Mohamad. 2008. Are Cash Flows Relevant for Stock Pricing in Bursa Malaysia?. Journal of Economics and Management. Vol. 2. No. 2. Pp. 353 - 367.

Chotkunakitti, P. 2005. Cash Flows and Accrual Accounting in Predicting Future Cash Flows of Thai Listed Companies. DBA Thesis. Southern Cross University. Lismore, NSW. Available online at: http://epubs.scu.edu.au/cgi/viewcontent.cgi?article=1018&context=theses. Access date: 13 August 2018.

Dimitropoulos, Panagiotis E. and Asteriou, Dimitrios. 2009. The Relationship between Earnings and Stock Returns: Empirical Evidence from the Greek Capital Market. International Journal of Economics and Finance. Vol. 1. No. 1. FEB 2009. Available online at: http://www.ccsenet.org/journal/index.php/ijef/article/view/191. Access date: 13 August 2018.

Eko Suwardi. 2009. The Dynamic Relationship between Accounting Numbers and Share Prices on the Jakarta Stock Exchange. International Review of Business Research Papers. Vol. 5. No. 5 September 2009. Pp. 16-24.

Haofeng Xu. 2008. The Earning Persistence of High Tech Enterprise and Market Efficiency of China Capital Market. International Journal of Business and Management. Vol. 3. No. 8. Pp. 10-13. School of Economics and Management, Tsinghua University, Beijing, China.

Hinkle, Dennis E.; Wiersma, William and Jurs, Stephen G. 2003. Applied Statistics for the Behavioral Sciences. Cengage Learning; 5th Edition (October 7, 2002).

Kormendi, R., and Lipe, R. 1987. Earnings Innovation, Earnings Persistence, and Stock Returns. Journal of Business. Vol. 60. No. 3. P. 323-345.

Lee, C. Jevons, 1987. Fundamental Analysis and the Stock Market. Journal of Business Finance and Accounting. Spring, Vol. 14, No. 1. Pp. 377-391.

Maligi, Ibrahim S., 2006. Study and Testing of Performance Measures Based on Accounting Profit and Performance Measures Based on Cash Flow to Measure the Performance of Egyptian Companies (In Arabic). Department of Accounting. Faculty of Commerce. University of Alexandria.

Maxwell Samuel Amuzu. 2010. Cash Flow Ratio as a Measure of Performance of Listed Companies in Emerging Economies: The Ghana Example. PhD Thesis. St. Clements University. Turks and Caicos Islands. Available online at: http://www.stclements.edu/grad/gradmaxw.pdf. Access date: 3 Feb 2018.

Muliati Binti Aba Ibrahim, Hajah Fatimah Binti Bujang, Nero Madi, Aizimah Binti Abu Samah, Ummi Syarah Binti Ismai, Kamaruzaman Jusoff and Azlina Narawi. 2009. Value-Relevance of Accounting Numbers for Valuation. Journal of Modern Accounting and Auditing. Vol. 5. No. 9. Pp. 30-39.

Narktabtee, K. 2000. The Implications of Accounting Information in the Thai Capital Market. PhD thesis. University of Arkansas. USA.

Norita Mohd Nasir and Shamsul Nahar Abdullah. 2004. Information Provided by Accrual and Cash Flow Measures in Determining Firms' Performance: Malaysian Evidence. American Journal of Applied Sciences. Vol. 1. No. 2. Pp. 64-70.

Olivia Orozco, and Javier Lesaca. 2009. Impact of the Global Economic Crisis in Arab Countries: A First Assessment. International Institute of Arab and Muslim World Studies. Available online at: http://www.clubmadrid.org/img/secciones/Background_Doc_ArabWorld_Eng.pdf. Access date: 27 January 2018.

Onour, Ibrahim, 2010. The Global Financial Crisis and Equity Markets in Middle East Oil Exporting Countries, MPRA Paper 23332, University Library of Munich, Germany. Available online at: http://mpra.ub.uni-muenchen.de/23332/. Access date: 14 August 2018.

SAMBA Report Series. 2009. The Saudi Stock Market: Structural Issues, Recent Performance and Outlook Office of the Chief Economist. Economics Department. Samba Financial Group. Riyadh. Saudi Arabia.

Saudi Arabian Monetary Agency (SAMA). 2003. Annual Review Saudi Equity Market. Riyadh. Tadawul. Saudi Arabia.

Schadewitz, H. J., Kanto, A. J., Kahra, H. and Blevins, R., 2002. An Analysis of the impact of Varying Levels of Interim Disclosure on Finish Share Price within Five Days of the Announcement. American Business. June. Pp. 33-45.

SESRIC, Statistical, Economic and Social Research and Training Centre for Islamic Countries Reports. 2009. Organization of the Islamic Conference. Ankara, Turkey. Available online at: http://www.sesric.org/files/article/315.pdf. Access date: 1 January 2018.

Telmoudi, Aymen, Hedi Noubbigh, and Jameleddine Ziadi. 2010. Forecasting of Operating Cash Flow: Case of the Tunisian Commercial Companies. International Journal of Business and Management. Vol. 5. No. 10. Available at: http://www.ccsenet.org/journal/index.php/ijbm/article/view/7652. Access date: 2 February 2018.

Tho, Lai Mooi. 2007. Predicting Future Cash Flows: Does Cash Flow Have Incremental Information Over Accrual Earnings? Faculty of Business and Accountancy, University of Malaya, Malaysian Accounting Review Vol. 6. No. 2. December 2007. P. 63-80.