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Investigating the Relationship Between the Kuwait Stock Market and Its Marketing Sectors

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Abstract
The main objective of this research is to measure the relationship between the Kuwait stock Exchange (KSE) index and its two marketing sectors after the new market classification. The findings of this research are important for economic policy makers as they need to know whether the new system (new classification) is efficient and to which level, in order to monitor the markets and intervene with appropriate measures. The investigated data are derived from the daily index of the financial Kuwaiti market and the daily closing price, number of deals and volume of shares traded of two marketing sectors (consumer goods and consumer services sectors) for the period starting from the 13th of May 2012 till the 12th of December 2016. The results indicate a positive direct impact of the closing price, volume and deals indexes of the consumer goods and the consumer services companies on the overall KSE index, volume and deals of the Kuwaiti stock market (KSE).
Keywords: Correlation, Market Capitalization (MCAP), Kuwait Stock Exchange (KSE), Marketing sectors, Stock Performance, Regression Analysis.

1. Introduction

This article discusses the relationship between the performance of the Kuwait Stock Exchange (KSE) marketing sectors (the consumer goods and consumer services sectors) and the whole KSE index performance. At the start it is imperative to know that the Kuwait Stock Exchange (KSE) was established in 1983 to regulate and organize public trading activities in Kuwait.

KSE over its years of operation have witnessed various changes and developments through introducing different investment tools such as the introduction of options, futures and forward markets. In addition, the KSE worked on facilitating the trading process through implementing an electronic trading system and then later extended to include an online trading platform. It is worth mentioning that in 2010, the regulatory responsibilities of the KSE moved to be under the Capital Markets Authority (CMA). The CMA council established the Boursa Kuwait Securities Company (BKSC) mainly to run the KSE operations effectively. Starting from April 25th 2016, the KSE market started to be operated by (BKSC).

2. Literature Review

In light of the change in the economic and market conditions, companies from different sectors started to work on finding ways and tools to improve their capabilities and to acquire a competitive measure of their performance, especially after the financial crisis that took place in September 2008. A study on the US market (Bausysin 2016), that was represented by the S&P-500 (Standard & Poors) index for 2015, had examined the correlation between the sectors and the overall performance of the index using the online portfolio analysis tool InvestSpy. The findings showed that no sector had a coefficient correlation of 0.9, the highest correlation that was recorded equaled to 0.87

Barakat *et. al*. (2016) analyzed the stock market performance in two emerging economies, Egypt and Tunisia. Their research studied the relationship between Egypt and Tunisia stock markets and the macroeconomic factors for the period extending between January 1998 and January 2014. Results indicated that there is a causal relationship in Egypt between the market index on one hand and consumer price index (CPI), exchange rate, money supply, and interest rate on the other hand. The same goes for Tunisia except for CPI, which had no causal relationship with the market index. Similarly, Bajpai (2014), in an earlier study clarified the importance of the sectorial diversification which comes as a result of the degree of correlation between the stocks and the markets.

Various researchers (Forbs and Rigobon 2002; Alagidede and Panagiotidis 2009), have reported low correlations between global indicators and the African stock markets. More specifically, Alagidede and Panagiotidis (2009) have analyzed the correlations indexes of four major markets in Africa including South Africa, Kenya, Egypt and Nigeria between 1997 and 2006. Furthermore, it was rightly concluded by Forbes and Rigobon (2002) that when testing for contagion across stock markets, it is critically important to measure market co-movements accurately because adjusting the correlation coefficient to correct for changing market volatility will not only affect estimates of cross-market correlations, but can significantly reduce estimates of stock market

contagion.

In his early research, Mullainathan (1998), he focused on the psychological factors of investors and how it affects the level of correlation between the stocks and the market index. He went on to clarify that a crisis in one country could trigger a memory of past crises, which would cause investors to re-compute their priors and assign a higher probability to a bad state. In line with the previous opinion, Mason (1997), presented the theory of multiple equilibrium which shows that a crisis in one country can be used as a sun-spot for another and that the same concept can be considered for different sectors in the same market.

Lee & Kim (1993) examined twelve major markets and concluded that there is an evidence of contagion: that average weekly cross-market correlation increased to 0.39 after the U.S. stock market crash of 1987 from a previous value of 0.23 before. This conclusion was also supported by an earlier research conducted by Bertero & Mayer (1990) who explained how the shock of the U.S. crash was spreading across markets. In line with the previous opinions, Chou (1994) and Hamao (1990) conducted more tests on the same topic using an auto-regressive conditional heteroscedasticity (ARCH) framework to evaluate the variance-covariance matrices. The results highlighted the evidence of significant spill-overs across markets and indicated that this international transmission of volatility does not occur evenly across countries.

Many researchers have used correlation analysis for financial related studies. Moss and Tuott (2013) used correlation analysis to examine the trends over the past two decades and found that regional indices have become increasingly correlated with the S&P 500 index. Longin & Slonik (1995) conducted a research considering seven OECD (The Organization for Economic Co-operation and Development) countries between 1960 and 1990. The research reported that the average correlations in stock market returns between the American market and the other seven countries have increased by approximately 36% during that period. Ronn (1998) has also analyzed the intra-market correlations in bonds and stocks. However, Ronn (1998) has developed more conservative assumptions to verify such bias and did not apply this to measuring the correlation of cross markets.

Merza et. al. (2016) studied the factors that affect the performance of the KSE which is measured through the average stock price. After analyzing three sectors in the KSE market which are the Banking, Insurance and Real Estate sectors, the results indicated that due to the nature of each sector, they behave differently towards the different macroeconomic variables. The major conclusion that can be reached, out of the previous literature review, is that there is no specific research that is focusing on measuring the relationship between the KSE and its marketing sectors after the new KSE market classification in Kuwait.

3. Methodology

The current study has adopted the following conceptualizations of the researched variables:

- **The market index** represents a reflection of the value of a particular portfolio of securities, Berk and Demarzo (2017) while **The KSE index** is an index that represents a value-weighted portfolio of all companies that are listed on Kuwait Stock Exchange.
- **The closing price** can be looked at differently from one market to another; ranging from simply the last transaction for the day to a price derived from complicated calculations Parry (2011).
- **Volume** is defined as the term used to measure the total number of shares traded. Gallant, R., et. al. (1992).
- Finally, the **Deals** which means An entity that stands ready and willing to buy a security for its own account (at its bid price) or sell from its own account (at its ask price). Individual or firm acting as a principal in a securities transaction. Principals are market makers in securities, and thus trade for their own account and risk. Harvey, R., (2012)

Building on the findings of the previous research papers that has been reviewed; the current paper is adopting the following hypotheses:

H1: there is a positive effect of the consumer goods companies' closing price on the overall market in terms of its KSE index.

H2: there is a positive effect of the consumer goods companies' volume on the overall market in terms of volume.

H3: there is a positive effect of the consumer goods companies' deals on the overall market in terms of its deals.

H4: there is a positive effect of the consumer services companies' closing price on the overall market in terms of its KSE index.

H5: there is a positive effect of the consumer services companies' volume on the overall market in terms of its volume.

H6: there is a positive effect of the consumer services companies' deals on the overall market in terms of its overall deals.

The data of the study is based on the daily index figures of the KSE marketing sectors represented by the consumer goods sector (includes 8 companies) and the consumer services sector (includes 13 companies) from the 13th of May 2012 (the date of starting the new KSE classification) to the 12th of December 2016. The total number of statistical observations during the investigated time span equaled 1133 observations for each variable

of the study with no missing values recorded.

The main source of financial data is the Kuwait Stock Exchange website and companies' websites. The Kuwait Stock Exchange is classified into 15 sectors (including the parallel market) with a market capitalization (MCAP) of around KD 28.8 billion as of April 2017. The marketing sectors total MCAP is KD 2.06 billion as of 10 April 2016 distributed as follows, KD 1.4 billion for consumer goods and KD 0.66 billion for consumer services. The total marketing services sectors MCAP represents 7.15 of the KSE total MCAP.

4. Results and Discussion

Correlation analysis of the KSE index, the closing price of consumer goods and the closing price of consumer services revealed significant positive associations between variables. The strongest correlation existed between the closing price of consumer services and the overall KSE index of the market while the correlation between the closing price of consumer goods and the overall KSE index of the market was weak but significant as table 1 indicates:

Table1. Correlation analysis for the KSE index and the closing price of consumer goods vs. services.

		KSE index	Closing price of consumer goods	Closing price of consumer services
KSE index	Pearson Correlation	1	.198**	.858**
	Sig. (2-tailed)		.000	.000
	N	1133	1133	1133

**. Correlation is significant at the 0.01 level (2-tailed).

H1 assumed that there is a positive effect of the consumer goods companies' closing price on the overall market in terms of its KSE index. In order to test this hypothesis, regression analysis was used which revealed a significantly positive, yet weak, effect of the closing price of consumer goods on the KSE index of the market as Table 2 indicates:

Table 2. Regression results for H1

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5603.383	132.648		42.243	.000
	closing price of consumer goods	1.040	.153	.198	6.789	.000

a. Dependent Variable: KSE Index

R square analysis revealed that the effect of the closing price of consumer goods explains around 3.9% only of the total variance of the KSE index which indicates a weak impact on the KSE index of the market. In order to test the pure correlation between the closing price of consumer goods and the KSE index, partial correlation test was used, controlling for the effect of the closing price of consumer services. As shown in Table 3, the results indicated a slightly stronger association between the two variables which means that there is some negative weak moderating effect of the closing price of consumer services on the positive relationship between the two variables. Therefore, we conclude that there is a positive effect of the consumer goods companies' closing price on the overall market in terms of its KSE index and H1 is accepted.

Table 3. Partial correlation analysis for H1

Control Variables: consumer service closing price		KSE index	consumer goods closing price
KSE index	Correlation	1.000	.203
	Significance (2-tailed)	.	.000
	df	0	1130

Correlation analysis of the overall market volume, consumer goods volume and consumer services volume revealed significant positive associations between variables. The strongest correlation existed between the volume of consumer goods and the overall market volume while the correlation between consumer services volume and the overall market volume was weak but significant as table 4 indicates:

Table 4. Correlation analysis for the overall market volume and the volume for consumer goods vs. services.

		overall market volume	consumer goods volume	consumer services volume
overall market volume	Pearson Correlation	1	.595**	.256**
	Sig. (2-tailed)		.000	.000
	N	1133	1133	1133

**. Correlation is significant at the 0.01 level (2-tailed).

H2 assumes that there is a positive effect of the consumer goods companies' volume on the overall market in terms of volume. In order to test this hypothesis, regression analysis was used which revealed a significantly positive effect of the consumer goods volume on the overall market volume as Table 5 indicates:

Table 5. Regression results for H2

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.871E8	5918047.935		31.623	.000
	consumer goods volume	28.951	1.163	.595	24.898	.000

a. Dependent Variable: overall market volume

R square analysis revealed that the effect of the consumer goods volume explains around 35.4% of the total variance of the overall market volume which indicates a moderate impact on the overall market volume. In order to test the pure correlation between the consumer goods volume and the overall market volume, partial correlation test was used, controlling for the effect of the consumer services volume. As shown in Table 6, the results indicated a somewhat similar association between the two variables which means that there is no moderating effect of the consumer services volume on the positive relationship between the two variables. Therefore, we conclude that there is a positive effect of the consumer goods companies' volume on the overall market in terms of volume and H2 is accepted.

Table 6. Partial correlation analysis for H2

Control Variables: Consumer services volume		overall market volume	consumer goods volume
overall market volume	Correlation	1.000	.581
	Significance (2-tailed)	.	.000
	df	0	1130

Correlation analysis of the overall market deals, consumer goods deals and consumer services deals revealed significant positive associations between variables. The strongest correlation existed between consumer goods deals and the overall market deals while the correlation between consumer services deals and the overall market deals was moderate as table 7 indicates:

Table 7. Correlation analysis for the overall market deals and the deals for consumer goods vs. services.

		overall market deals	consumer goods deals	consumer services deals
overall market deals	Pearson Correlation	1	.555**	.370**
	Sig. (2-tailed)		.000	.000
	N	1133	1133	1133

**. Correlation is significant at the 0.01 level (2-tailed).

H3 assumes that there is a positive effect of the consumer goods companies' deals on the overall market in terms of deals. In order to test this hypothesis, regression analysis was used which revealed a significantly positive effect of the consumer goods deals on the overall market deals as Table 8 indicates:

Table 8. Regression results for H3

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3448.227	103.494		33.318	.000
consumer goods deals	21.541	.961	.555	22.413	.000

a. Dependent Variable: overall market deals

R square analysis revealed that the effect of the consumer goods deals explain around 30.8% of the total variance of the overall market deals which indicates a moderate impact on the overall market deals. In order to test the pure correlation between the consumer goods deals and the overall market deals, partial correlation test was used, controlling for the effect of the consumer services deals. As shown in Table 9, the results indicated a somewhat

similar association between the two variables which means that there is no moderating effect of the consumer services deals on the positive relationship between the two variables. Therefore, we conclude that there is a positive effect of the consumer goods companies' deals on the overall market in terms of deals and H3 is accepted.

Table 9. Partial correlation analysis for H3

Control Variables: consumer services deals		overall market deals	consumer goods deals
overall market deals	Correlation	1.000	.522
	Significance (2-tailed)	.	.000
	df	0	1130

H4 assumed that there is a positive effect of the consumer services companies' closing price on the overall market in terms of its KSE index. In order to test this hypothesis, regression analysis was used which revealed a significantly positive, effect of the closing price of consumer services on the KSE index of the market as Table 10 indicates:

Table 10. Regression results for H4

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	-1481.548	142.768		-10.377	.000
closing price of consumer services	15.781	.281	.858	56.075	.000
a. Dependent Variable: KSE Index					

R square analysis revealed that the effect of the closing price of consumer services explains around 73.5% of the total variance of the KSE index which indicates a very strong positive impact on the KSE index of the market. In order to test the pure correlation between the closing price of consumer services and the KSE index, partial correlation test was used, controlling for the effect of the closing price of consumer goods. As shown in Table 11, the results indicated a very similar association between the two variables which means that there is no moderating effect of the closing price of consumer goods on the positive relationship between the two variables. Therefore, we conclude that there is a positive effect of the consumer services companies' closing price on the overall market in terms of its KSE index and H4 is accepted.

Table 11. Partial correlation analysis for H4

Control Variables: consumer goods closing price		KSE index	consumer services closing price
KSE index	Correlation	1.000	.858
	Significance (2-tailed)	.	.000
	df	0	1130

H5 assumes that there is a positive effect of the consumer services companies' volume on the overall market in terms of volume. In order to test this hypothesis, regression analysis was used which revealed a significantly positive effect of the consumer services volume on the overall market volume as Table 12 indicates:

Table 12. Regression results for H5

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	2.017E8	8828680.461		22.848	.000
consumer services volume	17.818	2.004	.256	8.889	.000
a. Dependent Variable: overall market volume					

R square analysis revealed that the effect of the consumer services volume explains around 6.5% only of the total variance of the overall market volume which indicates a weak impact on the overall market volume. In order to test the pure correlation between the consumer services volume and the overall market volume, partial correlation test was used, controlling for the effect of the consumer goods volume. As shown in Table 13, the results indicated a slightly lower association between the two variables which means that there is a weak negative moderating effect of the consumer goods volume on the positive relationship between the two variables. Therefore, we conclude that there is a positive effect of the consumer services companies' volume on the overall market in terms of volume and H5 is accepted.

Table 13. Partial correlation analysis for H5

Control Variables: consumer goods volume		overall market volume	consumer services volume
overall market volume	Correlation	1.000	.203
	Significance (2-tailed)	.	.000
	df	0	1130

H6 assumes that there is a positive effect of the consumer services companies' deals on the overall market in terms of deals. In order to test this hypothesis, regression analysis was used which revealed a significantly positive effect of the consumer services deals on the overall market deals as Table 14 indicates:

Table 14. Regression results for H6					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3147.536	163.330		19.271	.000
consumer services deals	12.554	.939	.370	13.373	.000
a. Dependent Variable: overall market deals					

R square analysis revealed that the effect of the consumer services deals explain around 13.7% of the total variance of the overall market deals which indicates a weak impact on the overall market deals. In order to test the pure correlation between the consumer services deals and the overall market deals, partial correlation test was used, controlling for the effect of the consumer goods deals. As shown in Table 15, the results indicated a slightly lower association between the two variables which means that there is some negative moderating effect of the consumer goods deals on the positive relationship between the two variables. Therefore, we conclude that there is a positive effect of the consumer services companies' deals on the overall market in terms of deals and H6 is accepted.

Table 15. Partial correlation analysis for H6			
Control Variables: consumer goods deals		overall market deals	consumer services deals
overall market deals	Correlation	1.000	.305
	Significance (2-tailed)	.	.000
	df	0	1130

- Analyzing the joint effect of the consumer goods and consumer services companies on the overall market:

Multiple regression tests revealed a joint effect of both consumer goods and consumer services companies on the overall market variables of the study. Multi-collinearity between the independent variables was evaluated using the tolerance and VIF values where a tolerance value below 0.l0 which corresponds to a VIF value above 10 (VIF = 1 / tolerance) would refer to high Multi-collinearity between independent variables (Hair et al 1998).

The KSE index was jointly affected by the consumer goods companies' closing price and the consumer services companies' closing price. Data analysis indicated that both independent variables had a direct positive impact on the KSE index of the market. However it is noted that consumer services closing price had a much greater effect than consumer goods companies' closing price, as shown in Table 16. Both independent variables explained 74.6% of the variance of the KSE index of the market. Multi-collinearity between the independent variables does not exist according to the tolerance and VIF values calculated in Table 16.

Table 16. Multiple regression results for the joint effect on the KSE index.							
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-1841.921	149.152		-12.349	.000		
consumer goods closing price	.551	.079	.105	6.957	.000	.988	1.012
consumer services closing price	15.569	.277	.846	56.126	.000	.988	1.012
a. Dependent Variable: KSE index of the market							

The overall market volume was jointly affected by the consumer goods companies' volume and the consumer services companies' volume. Data analysis indicated that both independent variables had a direct positive impact on the overall volume of the market. However it is noted that consumer goods volume had a greater effect than consumer services volume, as shown in Table 17. Both independent variables explained 38.1% of the variance of the overall volume of the market. Multi-collinearity between the independent variables does not exist according to the tolerance and VIF values calculated in Table 17.

Table 17. Multiple regression results for the joint effect on the overall volume of the market.							
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.544E8	7454582.529		20.712	.000		
consumer goods volume	27.677	1.153	.569	23.995	.000	.975	1.026
consumer services volume	11.548	1.653	.166	6.986	.000	.975	1.026
a. Dependent Variable: overall market volume.							

The overall market deals index was jointly affected by the consumer goods companies' deals and the consumer services companies' deals. Data analysis indicated that both independent variables had a direct positive impact on the overall deals index of the market. However it is noted that consumer goods deals had a greater effect than consumer services deals, as shown in Table 18. Both independent variables explained 37.2% of the variance of the overall deals index of the market. Multi-collinearity between the independent variables does not exist according to the tolerance and VIF values calculated in Table 18.

Table 18. Multiple regression results for the joint effect on the overall deals index of the market.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	2297.125	145.329		15.806	.000		
consumer goods deals	19.324	.938	.497	20.592	.000	.952	1.050
consumer services deals	8.849	.821	.260	10.781	.000	.952	1.050

a. Dependent Variable: overall market deals index.

5. Conclusion

The aim of this study was to investigate the effects of market indexes of both consumer goods companies and consumer services companies on the overall indexes of the market in Kuwait. The findings indicated a positive direct impact of the closing price, volume and deals indexes of the consumer goods companies on the overall KSE index, volume and deals index respectively of the Kuwaiti financial market. Data analysis also revealed a positive direct impact of the closing price, volume and deals indexes of the consumer services companies on the overall KSE index, volume and deals index respectively of the Kuwaiti financial market. Data analysis of the joint effect of both consumer goods and consumer services sectors on the overall indexes of the market showed that the greater effect on the KSE index of the market comes from the consumer services closing price (with a very high explanatory power) while the greater effect on the overall volume index of the market comes from the consumer goods volume index. Finally, it was also revealed that the greater effect on the overall deals index of the market comes from the consumer goods deals index.

6. Recommendations

The present research is considered as a step towards investigating the effects of certain market sectors on the overall market indexes in Kuwait after starting the new KSE classification. The investigation of the effect of other market sectors (like the banking, information technology or the construction sectors) on the overall performance of financial market indexes in Kuwait will also contribute greatly to deepen our understandings of the inter-effect mechanisms of different sectors of the market and provide valuable insights about the ways to enhance the performance of the market in the future.

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