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PERFORMANCE AND FIRM VALUE: A STUDY OF INDUSTRIAL KUWAITI FIRMS

Key Words

Ratio Analysis; Financial Analysis; Tobin s Q; Market Value; Structural Equation; Market Efficiency.

Abstract

This study strives to analyze the relationship between financial performance and value for firms that are traded in Kuwait stock market. The intention is to find whether investors in Kuwait stock market use the publicly financial information extracted from financial statements in their investment decisions. Based on our analysis, we found a strong relationship between the level of liquidity and the financial performance; however, no association was found between stock prices and the accounting financial performance of firms in our sample. Our findings have direct implications to the Kuwait stock market efficiency as well as to the risk tolerance of Kuwaiti investors.

Introduction

Stock trading in major world stock markets has been influenced profoundly by two main interrelated events; namely, globalization (i.e. opening capital markets to international investors) and the considerable usage of home computer which allowed individuals, for the first time, to seek investment opportunities in international stock markets. The majority of those investors, however, are less educated about how stock prices are determined, simply because these markets are radically different than traditional product markets that they deal with on a daily basis. Usually, buyers can judge the quality of the product much better than judging the quality of the stock which is purchased under information asymmetry. Financial statements have been considered as a major source of information by which investors can summarize information by computing many financial ratios that can help in elucidating stock fair prices. It is unknown whether such information is utilized

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by Kuwaiti investors when making stock purchasing decisions.

Given the importance of stock price in trading decisions in Kuwait, it would be very useful to gain a better understanding of: whether financial ratios can be grouped into meaningful factors in order to represent mutually exclusive quality indicators, and whether stock prices, or firm value, are associated with these quality indicators. The use of financial information is extensive in Western markets. Barnes (1987) points out that firms pay considerable attention to financial ratios to certain targets and many employ window dressing techniques to make them more appealing and to project a better image about company s performance.

This research is theoretically grounded, in that it uses the market efficiency thesis as a general guiding framework, which postulates that stock price should reflect all available information about the healthiness and profitability of the firm. Our research also draws from the signaling theory (e.g., Stein, 1989), which postulates that investors resort to any available information signaled by managers as these provide hints about the quality of the stock. These signals are manipulated by investors who are faced with the problem of the asymmetric information, a condition that exists when investors lack complete information about the future performance of the company while managers have a better knowledge about it. In this study, we combine these two theoretical frameworks along with the framework of financial statements, which have been viewed as a main source of firms' financial information. This paper adopts a different and a more robust statistical technique than what have been used so far in previous studies, in that it employs the Structural Equation Modeling as the prime statistical technique to analyze the data. Unlike other multivariate techniques such as Multiple Regression Analysis, Factor Analysis, MANOVA, Discriminate Function Analysis, this approach allows the examination of several relationships simultaneously (Hair et al., 1995), and at the same time, the analysis uses factors which are composed of several measures instead of using a single variable that may grossly limited in measuring the construct of interest.

Importance of the Study

We believe that the two research questions mentioned earlier are important for many reasons. First, it is unknown whether Kuwaiti investors collectively judge stock prices based on public information. Since no study

has been conducted to examine the assumed speculative behavior[1] of Kuwaiti investors, the present research attempts to fill this gap by studying the relationships among accounting indicators of financial health, financial performance and actual market performance as measured by stock price. It is hoped that by examining these relationships, we would know if Kuwaiti investors in general actually utilize internal health indicators to judge the quality of the stock. Second, this research attempts to clarify investor s decision-making process in Kuwait by examining whether investors are actually using publicly available quality indicators when making their investments decisions. Third, if Kuwaiti investors are not responding to these performance measures despite its wide availability, then managers have to alter their understanding of the underpinnings of Kuwaiti investor decisions. That is, whether investors utilize financial ratios when buying a stock will determine the focus of firm management in sending right signals to shareholders. This is based on the idea that maximizing shareholders wealth is accomplished through maximizing stock price, which is the managers primary objective. Fourth, examining linkages between quality indicators and stock price can help management determine the effectiveness of some western managerial practices when applied to Kuwaiti firms. Some firms tie managers compensations to its stock price in an effort to improve overall firm performance, an approach that may not succeed if investors do not utilize such financial results when transacting on the stock.

Literature Review

Changes in Stock Price

Much information exists to evaluate stock price[2]. Many researchers have strived to examine the link between firm value (stock price) and firm performance, industry, and the economy. For example, Chung *et al* (1998) make an effort to relate stock price to financial performance of firms. They document a concrete relationship between three variables, namely, stock price, dividends, and earnings with a more pronounced relationship between stock price and dividends. The theoretical relationship between stock price and future dividends is well explained in the literature (consider Gordon model, for example). That is, firm value is a function of mainly the

(1) It is assumed by many local observers that Kuwaiti investors adopt very speculative behavior in their investment decisions.

(2) These include (but not limited to) financial statements, future cash inflows and outflows, financial potential of new ventures, and many other sources.

future dividends a firm distributes. Managers are required to make decisions that lead to stock price maximization so as to accomplish their intended role as appointed employees by the board of directors. Other studies also show other determinants of stock price. Jones *et al.* (1996) investigate whether oil shocks are priced in stock market. They document a strong relationship between oil shocks and stock prices in most industrial countries. The relationship between stock price and some economic factors thought to affect market performance of firms is modeled by many such as Ferson *et al* (1995) who find that variables such as inflation and term structure are important factors that affect stock prices. Other studies also found stock prices to be affected by firm-specific variables such as volatility (Cockrane, 1991), firm size (Chan and Chen, 1991), and book-to-market ratio (Fama and French, 1994). In addition to these studies, there is a long list of similar papers that deal with the same issue. All these previous studies use either co integration technique or regression analysis to reach their conclusions. Since these studies were conducted for western markets that have more historical data, the current study uses a totally different approach. The absence of credible sources of information that can be used as performance measures should lead investors to rely on current financial information to predict the quality of future performance (see Aaker and Jacobson, 1994). Many world exchanges (including Kuwait Stock Exchange) have imposed a condition on firms to issue periodical (often quarterly) financial reports by which a detailed financial ratio analyses can be conducted to help investors judge the quality of traded stocks. While this abundant financial information has been made available to all investors using general media sources, it s unknown whether investors in Kuwait stock market actually utilize such information to judge whether the stock is overpriced or under priced. Needless to say, the mere availability of such information is not sufficient by itself to conclude that Kuwaiti investors are indeed using it to evaluate the stock price; a topic that remains to be a strictly empirical question.

Price and Quality

The association between price and quality has attracted much research attention in marketing and financial literatures. In marketing, the price affects purchase decisions as being a sacrifice measure and as being an indicator of product quality (Rao and Monroe, 1988) especially when product quality is not transparent and when the marginal utility of new in-

formation is low. Tellis and Gaeth (1990) found that in conditions where information about quality is not present, and when consumers are quality seekers, these consumers tend to use price as a proxy for quality. Neilson (1973) postulated that consumers ability to examine product quality hinges upon whether the product is mainly composed of search attributes which can be examined prior to the purchase. Given this, consumers will be more likely to use price as indicator of quality when the product is mainly composed of credence attributes. Unlike products where consumers reduce the product value by consuming its benefits, the money expended to buy the stock (i.e., a sacrifice) is expected yield more money through capital appreciation and future dividend streams (i.e., a quality). Because both sources of future income are uncertain, it is unknown whether the current stock price actually reflects the quality of the firm. In the next section, we describe our hypotheses given the popularity of financial ratios in finance and accounting literature.[3]

Hypotheses Development

As stated earlier, the overall objective of this study is to test whether the information contained in the publicly available financial statements is used by Kuwaiti investors[4] when making their investment decisions. Our objective can be accomplished in two steps. First, it is important to study the factors that affect the financial performance of firms. Since these factors are endless (see Capon, 1996), identifying any connections among financial ratios should cover all the latent factors that affect corporate performance. The second step is to uncover a relationship, if any, between investors perception about firms values and the available financial information. This can be accomplished by investigating any interrelationships among the factors that would be identified in the first step to affect financial performance. We have to mention that we can not assume causality among the employed variables since causality necessitates three important conditions (temporal precedence, concomitant variation, and non-spurious association).

(3) For more elaboration on the categorization of financial ratios, see Bernstein 1989, Brealey and Myers 1988, Brigham and Young 1999, Holmes and Sugden 1990, Bayldon, Woods, and Zafiris 1984, Courtis 1978, Chen and Shimerda 1981, Pinches and Mingo 1973, Laurent 1979, Kanto and Martikainen 1992.

(4) Being an emerging market, Kuwait stock market history indicates that noisy investors have dominated the market during the last period where these speculators have gone too far by making uneducated investment decisions, and as a consequenee, the market suffered three plunges in a short period of time.

Ratio Group Construction:

Liquidity Ratios

These ratios usually used to test the short term solvency of a firm. A very popular ratio in this group is the current ratio. Since this ratio tends to hype the liquidity level, especially in firms with large and hard-to-liquidate inventories, another ratio, the acid test (quick ratio) is calculated. While one might expect to find a strong correlation between liquidity ratio and acid test ratio due to their mutual denominators, the specific nature of the two industries included in our study (the industrial and food sectors) leads us to believe that inventories should represent significant portions of the current ratio. In addition to these two ratios, our analysis also includes three typical ratios belonging to this category that measures: (1) the availability of funds such as the net working capital ratio,(2) inventory level ratio, and (3) cash level ratio; all of which have been derived from the balance sheet. Hence, we expect that:

H1: Liquidity can be measured using a single factor that is mainly composed of current ratio, net working capital ratio, inventory level ratio, and cash level ratio.

Financial Leverage Ratios

Using this group should serve an objective to provide a sound quality indicator of firm s use of debt in order to help investors in determining the overall risk of the firm. In this study, leverage is measured using four ratios including (1) debt ratio, (2) long-term debt ratio, (3) debt-to-equity ratio, and (4) market value debt ratio. Based on this argument, we *expect* that:

H2: The measure of financial leverage will emerge as a single factor consisting of debt ratio, long-term debt ratio, debt-to-equity ratio, and market value debt ratio.

Activity Ratios

This group of ratios measures the effectiveness of managing firm s assets as it provides a reliable measure of how reasonable is the size of each group of assets in light of firm fundamentals. Because account receivables were not uniformly reported in all industrial firms especially in older financial statements, this category is composed of five ratios: (1) total asset turnover ratio, (2) fixed asset turnover ratio, (3) inventory turnover ratio, (4) equity turnover ratio, and (5) operating leverage proxy ratio (see Table 1). Based on the above, we expect that:

H3: Firm s level of competency in managing its assets can be measured by extracting a single factor from the following five ratios: asset turnover ratio, fixed asset turnover ratio, inven-

tory turnover ratio, equity turnover ratio, and operating leverage ratio.

Profitability Ratios (Accounting Performance Ratios)

This group measures the extent to which the management is effective in managing liquidity, debt, and assets in order to maximize profits. The five key ratios used in this group are: (1) return on assets (ROA), (2) return on equity(ROE), (3) market-based return on equity, (4) profit margin, and (5) earning per share (EPS). Hence, we expect that:

H4: Profitability ratios should form a single factor that consists of ROA, ROE, market-based return on equity ratio, profit margin ratio, and EPS.

Market Performance Ratios

In addition to the preceding ratios, we constructed performance measures derived mainly from the market participants' perceptions about firm value. Managers usually have no control over these measures. Our objective is to formulate a group of ratios that reflect how well the company stock is performing in financial markets where price is a key determinant of all ratios. This group includes: (1) Tobin s q1 ratio, (2) Tobin s q2 ratios[5], and (3) market-to-book value (M/B). As such, we hypothesize that:

H5: A measure of market performance can be obtained from a factor by analyzing these three ratios: Tobin s q1 ratio, Tobin s q2 ratios, and M/B.

The Relationship among Financial Ratio Groups

From a conceptual standpoint, changes in one group of ratios are usually associated with changes in other groups. It is imperative to test whether these groups of quality indicators are interrelated in a way that allows investors to portray a clear picture of the overall quality of firm s stock. In order to see if these health indicators are associated with the firm s stock price, the interrelationships among the five groups of ratios specified earlier will also be investigated. More specifically, we propose a set of bi-directional relationships among these groups based upon finance literature (see for example Wild *et al* 2000). Our purpose is not to suggest any kind of causality between these groups of ratios. We believe that the absence of temporal precedence leads us to consider any interrelations as covariance s rather than a one-way directed regression coefficient. This will serve our purpose of determining

(5) These measures have been used by many. See for example, Hyland (1997) and Agarwal et al. (1996).

the strength and direction of the associations among the ratios rather than proposing a direct causal path. As such, we outline the following possible linkages. As these linkages are based on the discussion in Hampton (1989) and Bernstein (1999), they represent other hypotheses that to be tested.

Liquidity and Leverage

Borrowing is one cheap source that is usually preferred by managers due to its advantages over equity financing (agency costs and signaling). As managers leverage firm activities, liquidity will definitely increase. Based on this view, we expect that

H6: There is a linear and positive association between level of liquidity and amount of leverage taken by the firm.

Liquidity and Firm Activities

The increase in liquidity brought up by leverage should lead to more operational activities as managers tend to use the borrowed funds to buy raw materials and increase their production. This leads to more inventories that should be sufficient to meet any increase in demand, hence we expect that:

H7: Higher level of liquidity is positively associated with higher level of activity.

Liquidity and Accounting Performance

As more liquidity is infused in managers budgets, more operations are expected, which leads to an increase (supposedly) in profitability. A firm s quality of performance should deteriorate if liquidity is employed in assets that earn less than the cost of funds. Therefore, we expect that:

H8: Liquidity measures and accounting performance ratios are positively correlated.

Leverage and Accounting Performance

As managers weigh the advantages with the disadvantages of each financing source, financing cost plays a critical factor in opting for one financing type over the other. In general, it is argued that leverage is characterized by less cost than other financing sources such as equity. Hence, we expect that:

H9: Leverage is positively associated with improvement of accounting performance.

Liquidity and Market Performance

If higher levels of liquid assets are employed efficiently, profitability tends to improve. However, higher-than-average liquidity tends to be

associated, generally, with less profit levels as that liquidity is usually placed in low profit assets. In any case, we expect that:

H10: There is an association between Liquidity and market performance.

Leverage and Market Performance

More leverage seems to be appreciated by the market participants due to its many advantages (such as lower costs and reducing managers discretionary financial decisions). Market participants will definitely respond favorably by marking up the stock price. Hence, we expect that:

H11: Leverage measures and market performance ratios are positively correlated.

Accounting and Market Performance

Investors, in general, inspect available information about firms before investing their money. If these firms earn competitive rents, investors would scuffle to buy the stock which should bid the stock price up. So, we expect that

H12: Accounting performance is positively associated with market performance.

Activity and Leverage

There tends to be a close relationship between the aggressiveness of firms and their borrowing as the increase in business activities necessitates more financing. Therefore, we expect that:

H13: Activity ratios and leverage ratios are positively correlated.

Activity and Accounting Performance

In general, extensive business operations will have a positive effect on profits as long as marginal costs of these operations are less than marginal revenues. As a result, profitability measures should reflect such positive change, thus, we expect that:

H14: A linear relation is to be observed between activity and accounting performance.

Activity and Market Performance

Higher level of firm operations usually signals better utilization of firm s assets and such a signal will be cherished by investors in terms of higher stock price. Thus,

H15: An increase in firm s activity should lead to increase in stock price..

Methodology

Sampling and Data Collection Procedures

Our data set consists of cross-sectional data and covers the period 1984-1997. Data was collected from all available annual reports for nine publicly traded Kuwaiti companies for which data are available[6] (five companies operating in the industrial sector (38% representation) and four companies from the food sector (100% representation) yielding a sample size of 117 observations.

Data Analysis

We examined the data set through various descriptive analysis procedures to check the accuracy of coding and entry procedures while looking for out-of-boundary values for each series of ratios (see table 1). Missing data comprised less than 0.05% and were further analyzed to uncover any patterns. A closer examination revealed no specific pattern and thus missing data were estimated using serial means of nearest two points.

An examination of the skewness and kurtosis of each ratio revealed satisfactory levels

(in relation to the normal distribution benchmark) except for inventory level, fixed asset turnover, and the three ratios measuring the market performance. To remedy the severe bias, log transformation procedures were applied to these ratios.

Results and Discussion

Exploratory Factor Analysis (EFA)

The 22 ratios were factor analyzed to explore their factor structure[7]. Seven distinct factors (with eigenvalues greater than 1) have emerged from the principal component factoring procedures and results are contained in table (2). Taken together, these factors explained 84.6% of the total common factor variance. Given the sample size, we retained only those unique ratios that are loaded on a single factor and produced a loading greater than 0.5 (as in Hair *et al* 1995). In addition, we kept factors with homogenous and interpretable items. As shown in table (2), the loading of each variable is ordered and grouped to facilitate interpretation. Factor loadings that are below .5 (.25% variance) are replaced by blanks. Only 16 of these 22 ratios and 5 out of the seven factors meet these criteria and were subsequently retained for further analysis (deleted items are underlined in the table). Calculated communality values (percentage

(6) At the time of this study, no computer software (similar to Compustat) was available that contains the financial data for firms, and even most published commercial financial reports includes only data about the past 3-5 years. This has forced us to compile the annual reports of each company and to extract all the required items of the balance sheet and the income statement that are necessary to construct the ratios.

(7) The procedure was carried out using SPSS factoring procedures with Varmiax orthogonal rotation.

Table 1
Descriptive Statistics

RATIO	Mean	Std. Deviation	Skewness		Kurtosis	
			Statistic	Std. Error	Statistic	Std. Error
Liquidity Ratio (CA/CL)	3.66	2.74	2.079	.224	6.88	.444
Acid Ratio (CA-INV)/CL	3.16	2.75	1.96	.224	7.83	.444
Net Working Capital Ratio (CA-CL)/CL)	.371	.23	1.62	.224	7.34	.444
Cash level Ratio (cash/TA)	.007	.13	2.45	.224	5.34	.444
Inventory Level Ratio (Inv/CA)	.10	.28	10.41	.224	111.10	.444
Asset Turnover Ratio (sales/TA)	.45	.31	.96	.224	.222	.444
Fixed Assets Turnover Ratio (sales/FA)	7.00	24.69	7.58	.224	64.34	.444
Inventory Turnover Ratio (sales/FA)	7.7	8.22	2.46	.224	6.18	.444
Stock Turnover Ratio (Sales/Equity)	.78	.845	2.39	.224	5.97	.444
Debt Ratio (debt/TA)	.25	.17	1.62	.224	4.30	.444
Long Term Debt Ratio (LTD/TA)	.01	.001	2.24	.224	6.09	.444
Market Debt Ratio (debt/MVE)	.23	.24	2.35	.224	6.57	.444
Operating leverage Proxy (FA/TA)	.26	.19	.73	.224	-.047	.444
Debt-Equity Ratio (debt/equity)	.45	.51	2.64	.224	8.17	.444
Return On Equity Ratio (NI/ Equity)	.01	.30	-1.93	.224	8.04	.444
Return on assets Ratio (NI/TA)	.004	.18	-.823	.224	7.41	.444
Earning Per Share (NI/MVE)	.003	.20	-.398	.224	7.10	.444
Market ROE Ratio (NI/MVE)	.003	.19	-1.44	.224	11.12	.444
Profit margin Ratio (NI/Sales)	.128	.98	-1.85	.224	8.10	.444
Market-Book Value (MV/BV)	2.23	2.17	5.80	.224	38.31	.444
Tobin s Q_1 Ratio (MVE/TA)	1.59	1.88	5.94	.224	38.41	.444
Tobin s Q_2 Ratio (MVE + Debt/TA)	1.84	1.90	5.91	.224	37.37	.444

Where:

CA = Current Assets	LTD = Long term debt
CL = Current Liabilities	NI = Net income
Inv = Inventory	MVE = Market value of equity
TA = Total assets	MV = Market value of a stock
FA = Fixed assets	BV = Book value of a stock

Tobin s Q1 and Tobin s Q2 are defined above in table 1

of the variable variance explained by the formed factor) ranged between 0.55 and 0.99 and all are above the minimum acceptable value of 0.45, thus indicating a good extraction.

The rotated solution provides preliminary insights about the structure of the ratios obtained. As shown in table (2), the first factor is labeled liquidity factor and contains current

Table 2
Factor Analysis Results: Factor Structure and Loading

VARIABLES (RATIOS)	FACTORS						
	1	2	3	4	5	6	7
Liquidity Ratios							
Current Ratio (CA/CL)	0.90						
Acid Ratio (CA-INV)/CL	0.9						
Net Working Capital Ratio (CA-CL)/CL	0.81						
Financial Leverage Ratios							
Debt-Equity Ratio (debt/equity)		0.92					
Market Debt Ratio (debt/MVE)		0.87					
Debt Ratio (debt/TA)		0.76					
Activity Ratios							
Asset Turnover Ratio (sales/TA)			0.91				
Inventory Turnover Ratio (sales/Inventory)			0.76				
Stock Turnover Ratio (sales/equity)		0.56	0.76				
Profitability Ratios							
RETURN ON ASSETS Ratio (NI/TA)				0.94			
Return On Equity Ratio (NI/EQUITY)				0.94			
Market ROE Ratio (NI/MVE)				0.89			
PROFIT MARGIN Ratio (NI/SALES)				0.89			
Earning Per Share (NI/# shares)				0.71			
Market Performance Ratios							
Market_Book Value (mkt/bk)					0.93		
Toben s Q_1 Ratio (MVE/TA)					0.97		
Toben s Q_2 Ratio (MVE + Debt/TA)					0.96		
Complex Factor 1							
Inventory Level Ratio (inv/ca)						0.9	
Long Term Debt Ratio (LTD/TA)						0.51	
Complex Factor 2							
Cash level Ratio (cash/TA)							0.69
Fixed Assets Turnover Ratio (sales/FA)							-0.68
Operating Leverage Proxy (FA/TA)							0.54

Extraction Method: Principal Component Analysis0. Rotation Method: Varimax with Kaiser Normalization0.

ratio, quick ratio (acid test) and net working capital ratio. However, we retain only the first and the third ratios because there is a strong correlation between the first two ratios (r = 0.98). The second factor is composed of debt ratio, market debt ratio, and debt-equity ratio and hence is labeled financial leverage ratio. The third factor reflected activity ratios of two unique variables (asset turnover and inventory turnover ratios) and one complex item (the stock turnover ratio) is deleted. Accounting performance formed the fourth factor and is mainly composed of ROA, ROE, market ROE ratio, profit margin, and EPS. Finally, the fifth factor is the market performance ratio that contains market-book value, Tobin s q1, and Tobin s q2. The sixth and seventh factors are diverse factors containing ratios that have no theoretical sense, which leads us to delete both of them.

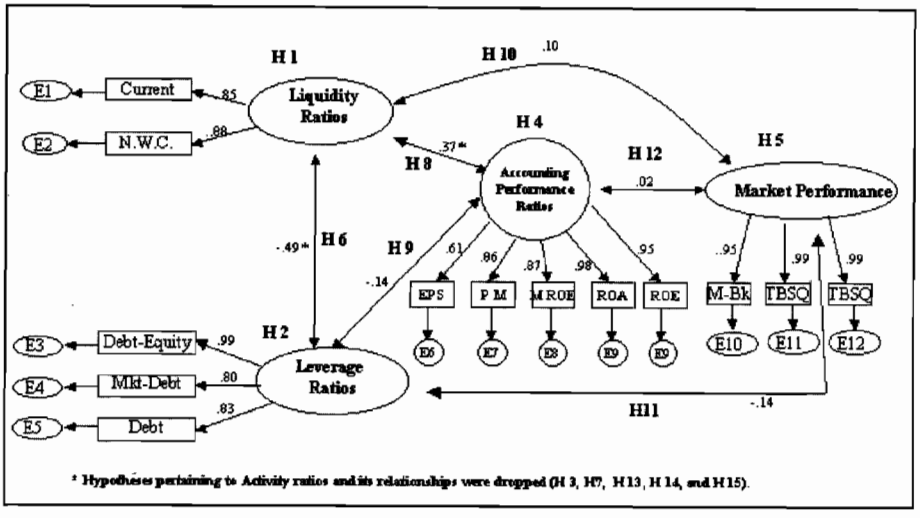
Structural Model: Confirmatory Factor Analysis

To verify the obtained results, a structural equation modeling for confirmatory factor analyses was performed on the 16 retained ratios composing the five retained factors. This method allows the examination of any interrelationships among the retained factors as well as provides robust fit indices for the model. Results obtained from the CFA analysis provide the necessary parameters to test the aforementioned hypotheses.

The CFA model included the five groups of financial ratios. Initial solution was unsatisfactory due to two Haywood cases (negative error variances) for two of three variables forming activity group. While several possible explanations exist for this situation, we believe that the main reason is that the cases-to-variables ratio is less than adequate. Our preliminary analysis resulted in 7 cases per variable which is less than the generally accepted rule of having 10 observations per variable. This problem was remedied by deleting the activity factor with its 3 indicators thus reducing the number of variables to 13 and increasing the ratio closer to the accepted rule. As shown in Figure 1, the final CFA model has converged without any problems.

Measures assessing the overall good of fit were generally supportive of the hypothesized model. Due to the sensitivity of the χ^2 to small sample size, we used more robust omnibus fit indices such as the Comparative Fit Index value (CFI = 0.913), Incremental Fit Index (IFI = 0.914), and the Root Mean Square Residual (RMR = 0.070). All these values are considered to be quite good and lend support to our conclusion of a good overall and incremental model fit.

Figure 1
Four-Factor Confirmatory Factor Analysis Model



Procedures undertaken to evaluate the fit of each construct have yielded encouraging results. As shown in table (3), for each construct, we calculate reliability and variance extracted and report the standard loading values, t-statistics, and covariance estimates for each pair of constructs. All values were above the acceptable ranges established in the literature (see Hair *et al* 1995).

Measurement Model: Formation of Groups

Hypothesis one predicts that liquidity should be composed of five ratios namely current ratio, acid test ratio, net working capital ratio, inventory level ratio, and cash level ratio. The results of Confirmatory Factor Analysis on the original 22 ratios (reported in table 1) showed that a liquidity factor is composed only of three indicators, namely, liquidity ratio, acid test ratio and net working capital ratio) rather than the five indicators mentioned in the literature (the remaining two loaded on complex items). Reliability measures of this factor indicate strong internal consistency (0.86), hence, we retain this hypothesis. According to hypothesis two, financial leverage factor should include four ratios namely: debt ratio, long-term debt ratio, debt-to-equity ratio, and market value debt ratio. Results have shown that only the first three ratios loaded highly on this factor (long-term debt ratio was excluded), and this factor showed a relatively large factor reliability

(0.91) and extracted variance (0.78) thereby lending strong support to its internal structure. Hypothesis three posited that activity ratio should be composed of five ratios namely: total asset turnover ratio, fixed asset turnover ratio, inventory turnover ratio, equity turnover ratio, and operating proxy ratio. Results from factor structure showed partial support at best. Out of the five ratios expected to form this factor, only two ratios had a clean loading on this factor (asset turnover ratio and inventory turnover ratio), while the three remaining ratios showed either multiple loading (stock

Table 3
Measurement of Five Factors of Ratios Model

Ratios	Liquidity Ratios	Leverage Ratios	Profitability Ratios	Marketing Performance
Current	0.85[a]	.000	.000	.000
	(.000)			
Net working capital	0.88	.000	.000	.000
	(7.28)			
Debt-equity	.000	0.83	.000	.000
		(.000)		
Market debt	.000	.80	.000	.000
		(10.57)		
Debt	.000	0.99	.000	.000
		(12.9)		
Earning per share	.000	.000	0.95	.000
			(.000)	
Profit margin	.000	.000	0.98	.000
			(26.38)	
Market ROE	.000	.000	0.87	.000
			(16.1)	
ROA	.000	.000	0.86	.000
			(15.57)	
ROE	.000	.000	0.61	.000
			(7.84)	
Market-book	.000	.000	.000	0.95
				(.000)
Tobin sq-1 (January)	.000	.000	.000	0.99
				(31.13)
Tobin sq-1 (February)	.000	.000	.000	0.99
				(31.1)
Cronbach Reliability Measure	0.86	0.91	0.93	0.98
Extracted Variance Measure	0.75	0.77	0.75	0.95

a Standardized loadings with t-values in parentheses. A t-value of $\pm$ 1.97 is significant at $\alpha = .05$, while a value of .00 indicates a factor loading fixed for model identification purposes.

turnover ratio) or loaded on a complex factor (equity turnover ratio and operating proxy ratio). Empirical evidence suggests that this hypothesis is not supported. The internal consistency of this factor and the percentage of extracted variance were not available using the CFA procedures. As stated in hypothesis four, the profitability factor should include ratios that reflect the profitability of the firm using figures extracted mainly from financial statements. Results suggest that all the ratios have formed this factor. The CFA results have shown a strong reliability of 0.93 and an extracted variance of 0.75, which provided strong support to this hypothesis. Hypothesis five was retained in this study. As we originally predicted, market performance factor was found to consist of three main ratios (market-to-book value, TOBIN SQ1 and TOBIN SQ2) with strong reliability of (0.98), and large proportion of extracted variance (0.95).

The previous section shows that all five categories of ratios represent main quality indicators of firms health and performance level of Kuwaiti firms. With the exception of the activity factor, the remaining four groups emerged as expected.

The Structural Model: Examining Linkages

As depicted in figure (1) and in Table (4), the analysis was conducted using only clean

factors with items loading on a single factor and produced adequate reliability and extracted variance. The rejection of hypothesis 4 compelled us to drop four hypotheses from further testing namely (H 7, H 13, H 14, and H 15). Based on this model, each of the remaining hypotheses will be discussed.

Table 4
Correlation among Factors using Confirmatory Factor Analysis Model

Constructs	Liquidity	Leverage	Accounting Performance	Market Performance
Leverage	-.49[a] (-3.98)[b]	-	-	-
Accounting Performance	.37 (3.32)	-.22 (-2.25)	-	-
Market Performance	.06 (.63)	-.08 (-.84)	.004 (0.039)	-

a = correlation coefficient, b = t-value

In hypothesis six, we proposed a linear and positive correlation between liquidity and leverage. In general, firms characterized by higher leverage need higher liquidity so as to meet the periodic obligation of debt service. Results obtained from Confirmatory Factor Analysis showed a significant negative correlation between the two factors (-0.49), which is statistically significant ($t = -3.99$, $p < 0.001$). The inverse relationship shows that an increase in Kuwaiti firms' liquidity is usually accompanied by a decrease in their debt level. It seems that Kuwaiti firms depend either on their equity or use their long-term debt to finance their liquid assets. This finding lends some support to the contention that a poor solvency is expected to be present with firms that extensively use their liquidity (Ozkan, 2001). As explained earlier, hypothesis seven was not tested since activity factor was deleted due to its weak factor structure, hence, testing the relationship between firm s liquidity and activity could not be performed. For hypothesis eight, results obtained from the structural model supports our prediction. We found a positive correlation between liquidity and profitability ($R = 0.37$, $P < 0.01$), which means that higher level of liquidity is associated with higher profitability beyond chance.

For the remaining hypotheses (H 9- H 12), results obtained from our analysis don't lend any support to the expected relationships outlined earlier. More specifically, we expected to find a positive association between leverage and profitability (accounting performance) as mentioned in hypothesis 9, partly because we believe that only profitable firms have the capacity to obtain external financing. However, our findings have shown that such relationship is not statistically significant; a result that lead us to reject H 9. For hypothesis 10, we expected to find an association between liquidity and market performance, however, our findings lend no evidence supporting this relationship ($R = 0.06$, $P > 0.05$). This finding shows that firms level of liquidity is independent from the value of its stock in the market. According to H 11, we expected to find a relationship between firm s use of leverage and stock price performance in the market (i.e., market performance). Our results show an insignificant correlation between market-based performance and leverage ($R = -0.14$, $P > 0.05$). Based on Hypothesis 12, a positive association should emerge between accounting performance and stock price performance (i.e., market performance). Our results provided no evidence supporting this link ($R = 0.004$, $P > 0.05$).

In summary, the empirical results show that market performance measures are not correlated with any group of ratios which suggests and confirms a previous conjecture of a speculative stock market in which a stock price is independent of actual performance and healthiness of the firm.

Conclusion and Managerial Implications

Results of this study shed light on two main issues: (1) the ability to form quality indicators using financial ratios reported regularly by Kuwaiti firms. Three groups of ratios were identified as reliable quality indicators. These are liquidity, leverage, and profitability (accounting performance). Activity measures, as quality indicator, failed to emerge as a reliable factor; (2) the association between these quality indicators and the price formation process in Kuwaiti stock market. It was found that profitability is modestly correlated with liquidity level and a corrosive effect of leverage on profitability was detected. Paradoxically, although the constructed factors have some effect on firm s profitability, investors failed to detect this effect when trading in the market. This finding suggests that Kuwaiti market participants tend to overlook firms profitability in their investment decisions when trading in stocks. Our study, in fact, found market-based performance measures to be independent of accounting indicators of firm quality. These results indicate that the availability of detailed periodical financial data to market participants will not necessarily make Kuwaiti stock market more efficient. The economic authorities are striving to improve the local economy and the investment environment but it seems that market participants are playing an opposing role. This is evident by the noisy investment behavior of these investors who do not pay close attention to the financial performance of firms that they invest in. Therefore, we conjecture that the market-based performance measures are relatively biased in Kuwaiti market, at least for the selected sample. This should explain part of the puzzling investment behavior in Kuwait stock market. Many investors appeal to loser stocks or even buy stocks of firms with sustaining losses. Those investors might be lead by signals originating from sources other than firm management (e.g., rumors) more than depending on analyzing firm s fundamentals. This behavior is partly responsible for amplifying the value of financially failing firms and hence creating a source of market instability.

Along the same line, it is also found in this study that firm risk, represented by leverage, bears only small effect on

firm s performance. This effect came to be negative, which is against what is commonly believed in the finance literature. The relationship also was statistically insignificant when considering the correlation coefficient between risk and the investors valuation of the firm. This sheds some light on the nature of the risk tolerance of those investors whose investment decisions neglect risk.

The present study also provides some interesting contribution to the marketing literature in that it provides a comparison between consumer decision-making process and investment decision making. While stocks have many quantitative quality dimensions that can be used to judge the present status of the firm s performance (which partly determines future performance), investors seem to omit these dimensions when making a decision, a tendency that is similar to evaluating the quality of credence products. In light of the lack of association between quality indicators and stock performance, it is more likely that investors seem to form subjective beliefs about the future performance of the stock using information other than what is announced by the company. One of the most relevant managerial implications of this study is questioning the appropriateness of relying on price performance measures to compensate top management in effort to increase their managerial effectiveness. Furthermore, window dressing techniques employed to improve financial results are ineffective and unnecessary in light of these findings.

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الملخص

الأداء المالي وقيمة الشركة: دراسة للشركات الصناعية الكويتية

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تقوم هذه الدراسة بتحليل العلاقة بين الأداء المحاسبي والأداء المالي لمجموعة الشركات الصناعية الكويتية والمقيدة في سوق الكويت للأوراق المالية. ويهدف التحليل المتبع إلى اكتشاف فيما إذا كان المستثمر في سوق الأوراق المالية يقوم باستخدام البيانات المحاسبية والقوائم المالية المنشورة في التقارير المالية السنوية عند اتخاذ قراره الاستثماري. ومن أهم النتائج التطبيقية لهذه الدراسة هو عدم وجود علاقة بين أسعار أسهم الشركات الصناعية وبين بياناتها المحاسبية التي تعبر عن أدائها السنوي. وهذه النتيجة تبين أن المستثمرين في سوق الأوراق المالية الكويتية لا يربطون بين أداء الشركة وسعر سهمها السوقي، على الأقل بالنسبة لفترة الدراسة. ولهذه النتيجة مؤشرات مهمة على صعيد كفاءة سوق الكويت للأوراق المالية ومدى سيادة ما يعرف بالمستثمر «المتذبذب» بالإضافة إلى العلاقة بين العائد والمخاطرة بالنسبة للمستثمر الكويتي.

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