



“Components of working capital and profitability in Saudi Arabian companies”

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COMPONENTS OF WORKING CAPITAL AND PROFITABILITY IN SAUDI ARABIAN COMPANIES

Abstract

The study examines the influence of the cash conversion cycle (one of the components of working capital) on the firm profitability measured in terms of return on equity (ROE), return on assets (ROA), Tobin's q, and gross operating profit (GROP) in the manufacturing sector of Saudi Arabia. The study selects a sample of 100 companies from nine industrial sectors listed on the Tadawul Stock Exchange starting from 2008 to 2019. A pooled regression is estimated to report the empirical results. The results report a positive and significant association between the components of working capital in terms of cash conversion cycle and the firm profitability in terms of ROA, ROE, and Tobin's q, except for the GROP, where there is a negative and significant relationship. The study reports that the growth in firm performance is associated with supplier's financing terms and inventory ordering cost. The results also show that larger firms are more profitable than smaller firms. Hence, the current study confirms the formulated hypothesis of having a significant association between the components of working capital and firm profitability.

Keywords

return on assets, return on equity, Tobin's q, gross operating profit, Tadawul, cash conversion cycle

JEL Classification

L25, L61, L66, M11, M40, M41

INTRODUCTION

The functions of finance, such as profit maximization and wealth maximization, are based on three decisions, namely financing decisions, investment decisions, and dividend decisions. The liquidity and working capital management is an important component of financing decisions, where current assets and current liabilities have a significant role to play. Working capital management can also be termed short-term financial management (Ross et al., 2002; Samiloglu & Demirgunes, 2008). Cash is an important element of liquidity and is considered to a large extent a way to measure the performance of a company. The working capital efficiency affects the liquidity and profitability of a firm directly (Raheman & Nasr, 2007; Samiloglu & Demirgunes, 2008). The management of a firm's working capital might be inaccurate; nevertheless, the firm profitability level is positive due to the motive of profit maximization.

Further, liquidity is considered an important factor determining working capital requirements and exhibits the firms' ability to generate cash. The traditional liquidity measures, such as the current ratio and acid-test ratio, do not provide sufficient information about operating cash flow, which is significant in analyzing liquidity (Richards & Laughlin, 1980). Therefore, Schilling (1996) and Boer (1999) suggested the method of continued liquidity (cash inflows and outflows) through accounts receivable, inventory, and accounts payable, and described as a significant element in determining the working capital

efficiency. The continued liquidity process is termed a cash conversion cycle. This method measures the time taken between purchases of raw materials and the collection of cash from sales. The shorter the period between payment and collection, the lesser the inventory.

The cash conversion cycle is a common measure of working capital management. The longer the cash conversion cycle, the higher the profitability due to enhanced sales, but this might lead to higher investment in working capital in terms of inventory holding costs (Deloof, 2003). Hence, the results reported by different studies demonstrate that the increase in operating performance is possible from a lower cash conversion cycle (Uyar, 2009; Caballero et al., 2012; Lee, 2015; Chang, 2018). Further, the firms with longer cash conversion cycles finance their operating working capital through short-term debt, and firms holding higher short-term debt shall fail during the economic crisis (Duchin et al., 2010; Almeida et al., 2012; Wang, 2019).

1. LITERATURE REVIEW

Korent and Orsag (2018) studied the relationship between working capital management and profitability in Croatia's software companies. Significant effects of working capital management on profitability were found and the existence of a quadratic and non-linear association between the ROA and the working capital was evidenced. Similarly, the determinants of working capital without considering control variables shall have a significant positive relationship with profitability, while the result is vice-versa when the control variables are used (Maenuddin et al., 2020). Yameen et al. (2019) investigated the association of liquidity and profitability of pharmaceutical companies listed on BSE measured by ROA. It was found that the ratios of short-term financial position are positively associated with the profitability measure, while the control ratios are negatively associated. Ilakkiaa and Chakraborty (2017) examined the impact of cash holdings on the cash conversion cycle in the Indian manufacturing industry. Huge balances of cash holdings in the manufacturing firms were found, which are termed poor cash usage.

Jahan (2011) investigated the relationship between cash conversion cycle and profitability and company size. A negative association was found between profitability measured in terms of ROE and company size measured in terms of sales. Samiloglu and Akgun (2016) examined the association between components of working capital, such as accounts receivable, accounts payable, and cash conversion cycle and firm performance. The findings indicated a negative relationship between accounts receivable and firm profitability. Similar studies

by Samiloglu and Demirgunes (2008), Attari and Raza (2012), Ogundipe et al. (2012), and Majeed et al. (2013) were conducted on different kinds of firms and reported a negative relationship between profitability and cash conversion cycle, and a similar kind of relationship was reported with accounts receivable, while a positive relationship was reported with the control variables. Bhutto et al. (2011) studied the association between the cash conversion cycle, a working capital component, and firm performance. A negative association was reported between the cash conversion cycle and firm performance. It was linked to aggressive working capital policies. In another study, the cash conversion cycle is positively associated with firm performance, liquidity, and capital invested, and the small firms actively manage the cash conversion cycle (Ebben & Johnson, 2011). Similarly, Sharma and Kumar (2012) investigated the impact of working capital on the profitability of Indian firms. A positive association was found between the working capital and firm profitability. It was further reported that the cash conversion cycle, an important component of working capital, is positively related to the firm profitability. Moreover, Yazdanfar and Öhman (2014) investigated the impact of the cash conversion cycle, an important component of working capital on the profitability of Swedish SMEs, and found a significant relationship between them. It was suggested to increase firm profitability by increasing the performance of working capital. Similarly, Tsagem et al. (2017) studied the relationship between cash conversion cycle and firm performance of Nigerian SMEs and found a negative association between cash conversion cycle and firm performance, and linked it to low growth opportunities of SMEs.

Similarly, decomposing investment in working capital in the cash conversion cycle leads to growth in shareholders' value. The reduction of the cash conversion cycle increases profitability and stock prices (Zeidan & Shapir, 2017). Furthermore, the longer the cash conversion cycle, the less capital in terms of short-term assets is employed, ultimately leading to a firm's higher profitability since the cash conversion cycle is part of the working capital requirements of a firm (Ali et al., 2018). In contrast, Ifeoma and Okpalaukeje (2018) reported that the usage of cash and its equivalents should be less in terms of short-term obligations to increase the firm profitability, i.e., the period of the receivables should be less. Moreover, the lesser period involved in the cash conversion cycle shall enhance the firm performance by increasing its profits and make a free flow of cash (Gambo & Shuaib, 2016; Al-Abass, 2017).

Further, the volatile structure (strong to weak) of the cash conversion cycle creates difficulties in maintaining the optimum working capital cycle, leading to unbalanced working capital (Konuk & Zeren, 2014). Similarly, Svitlik and Poutnik (2016) studied the association between liquidity, a part of working capital, and a firm profitability and reported a weak association between them. Moreover, the cash conversion cycle might be insignificant to the firm profitability, as evidenced by the emerging markets (Ozturk & Vergilli, 2018). Dalci et al. (2019) investigated the moderation of company size between profitability and cash conversion cycle and found that the increase in profitability was related to the longer cash conversion cycles in terms of bigger firms, while the cash conversion cycle should be less for the medium and small firms. Alsulayhim (2019) studied the influence of working capital management on the profitability of non-financial Saudi Arabian companies listed on Tadawul. Multiple regression model and pooled regression were used to estimate the results. A positive association was found between working capital management and firm profitability.

The current study reviewed previous research examining the relationship between the cash conversion cycle and the firm profitability. There is a difference of opinion in the reported results, where some researchers found a positive relationship, while most of the researchers found a negative and

weak relationship between the firm profitability and cash conversion cycle. In light of the above discussion, the cash conversion cycle becomes an important factor and a measure of working capital management. Further, no study was found explaining the relationship between the working capital components in terms of cash conversion cycle and firm profitability except for a study by Alsulayhim (2019) examining the relationship between working capital management and profitability. Therefore, it becomes significant to examine the relationship between the cash conversion cycle and profitability in the manufacturing sectors of Saudi Arabia. Different associations between the cash conversion cycle (a measurement of working capital) and the firm profitability have been established. The following are the hypotheses established by the present study.

H_0 : *There is no significant relationship between the cash conversion cycle and the firm profitability (explained in terms of ROA, ROE, Tobin's q, and GROP).*

H_1 : *There is a significant relationship between the cash conversion cycle and the firm profitability (explained in terms of ROA, ROE, Tobin's q, and GROP).*

2. METHODS

The study examines the impact of the cash conversion cycle on the financial performance of Saudi Arabian non-financial companies listed on Tadawul (The Stock Exchange of Saudi Arabia). The sample consists of 100 companies from 9 industrial and manufacturing sectors, such as capital goods, consumer durables, energy, food and beverages, health care, materials, retailing, utilities, and transport, starting from 2008 to 2019. Table 1A (Appendix A) reports the details of studied companies regarding their specialization, global industry classification standard (GICS) codes, and market capitalization. The study uses secondary data to examine the impact of the cash conversion cycle on the financial performance of Saudi Arabian companies. The data for dependent and independent variables were extracted from the company financial reports available on Tadawul.

2.1. Dependent and independent variables

The study has considered four financial performance proxies as dependent variables, such as return on assets (ROA), return on equity (ROE), Tobin's q (Q Ratio), and gross operating profit (GROP). The components of the cash conversion cycle, such as days sales outstanding (DSO), days sales in inventory (DSI), and days payables outstanding (DPO), are independent variables. Further, company size is considered a control variable.

Table 1. Dependent and independent variables

No.	Proxy	Variable	Formula
1	Return on assets (ROA)	Dependent	Net Income/Total Assets
2	Return on equity (ROE)	Dependent	Net Income/Total Equity
3	Tobin's q (Q ratio)	Dependent	Total Market Value/Total Asset Value
4	Gross operating profit (GROP)	Dependent	Gross Profit – Operating Expenses/Sales
5	Days sales outstanding (DSO)	Independent	Accounts Receivables x 365/Sales
6	Days sales in inventory (DSI)	Independent	Inventory x 365/Cost of Goods Sold
7	Days payables outstanding (DPO)	Independent	Accounts Payables x 365/Sales
8	Size	Control	Log (Sales)

2.2. Empirical model

The study examines the effect of the cash conversion cycle on Saudi Arabian companies' financial performance with the help of correlation analysis and by employing a pooled regression model. The dependent and independent variables used in the regression model are given in Table 1. Further, to test the model's robustness, the study conducts diagnostic tests, such as the normality test, heteroscedasticity test, multicollinearity test, etc. The estimated pooled regression model is as follows:

$$ROA_{i,t} = \beta_0 + \beta_1 DSO_{i,t} + \beta_2 DSI_{i,t} + \beta_3 DPO_{i,t} + \beta_4 SIZE_{i,t} + \varepsilon_{i,t}, \quad (1)$$

$$ROE_{i,t} = \beta_0 + \beta_1 DSO_{i,t} + \beta_2 DSI_{i,t} + \beta_3 DPO_{i,t} + \beta_4 SIZE_{i,t} + \varepsilon_{i,t}, \quad (2)$$

$$Q_{i,t} = \beta_0 + \beta_1 DSO_{i,t} + \beta_2 DSI_{i,t} + \beta_3 DPO_{i,t} + \beta_4 SIZE_{i,t} + \varepsilon_{i,t}, \quad (3)$$

$$GROP_{i,t} = \beta_0 + \beta_1 DSO_{i,t} + \beta_2 DSI_{i,t} + \beta_3 DPO_{i,t} + \beta_4 SIZE_{i,t} + \varepsilon_{i,t}, \quad (4)$$

where β_0 is the constant, β_1 , β_2 , β_3 are the coefficients of independent variables DSO , DSI , and DPO , β_4 is the coefficient of firm size, and ε is the error term for a company i and time t . To test the fitness of the above-given models, the study shall employ adjusted R^2 and F-statistic.

3. RESULTS

The result section reports the descriptive statistics, correlation analysis, and pooled regression results with different models. Table 2 reports the descriptive statistics, such as the mean, SD, minimum, and maximum of all the study variables.

Table 2. Descriptive statistics

Variable	N	Mean	Standard deviation	Min	Max
ROA	100	0.06453	0.099	-0.678116	1.11709
ROE	100	0.0845	0.2201	-3.51132	1.65685
Tobin's q	100	0.57077	0.249	0.09	1.41857
GROP	100	0.0202	0.974	-8.94368	1.00000
DSO	100	0.9512	0.9816	0.012	9.04606
DSI	100	1.3180	1.2499	1.231	9.42399
DPO	100	0.8136	0.8800	1.363	8.73045
SIZE	100	5.7078	1.4981	-2.9425	8.27852

The results show that the mean range of dependent variables, such as ROA, ROE, Tobin's q, and GROP is between -8.94 and 1.66, and the range of SD is between 0.09 and 0.97. The negative ROA, ROE, and GROP show that some sample Saudi Arabian firms are experiencing losses in some periods. Similarly, the mean range of independent variables, such as DSO, DSI, and DPO, is between 0.012 and 1.23, which shows that the accounts receivables are in average one day with a minimum of less than one day and a maximum of nine days; the average inventory holding period is 1.32 days with a minimum of 1.23 days and a maximum of 9.42 days, and the accounts payable are in average less than one day, with a minimum of 1.36 days and a maximum of 8.73 days. This shows that Saudi

Table 3. Correlation analysis

Variable	ROA	ROE	Tobin's q	GROP	DSO	DSI	DPO	SIZE
ROA	1.000	0.775	0.134	0.057	-0.09	-0.07	-0.16	0.02
ROE	0.775	1.000	0.179	0.023	-0.049	-0.069	-0.138	0.149
Tobin's q	0.134	0.179	1.000	0.286	-0.29	0.159	-0.20	0.20
GROP	0.057	0.023	0.286	1.000	-0.560	0.135	-0.025	0.044
DSO	-0.09	-0.049	-0.29	-0.560	1.000	-0.07	0.19	-0.07
DSI	-0.07	-0.069	0.159	0.135	-0.07	1.000	0.03	-0.06
DPO	-0.16	-0.138	-0.20	-0.025	0.19	0.03	1.000	-0.09
SIZE	0.02	0.149	0.20	0.044	-0.07	-0.06	-0.09	1.000

Arabian firms have a shorter cash conversion cycle. The range of SD is between 0.88 and 1.25, with a little dispersion in the DPO data.

Table 3 reports the correlation analysis of dependent and independent variables. The result shows a negative correlation between both the study variables, except DSI positively correlated with Tobin's q and GROP.

Table 4 reports the pooled regression results of models 1 and 2. The result of model 1, where ROE is the dependent variable, shows that the relationship with the elements of the cash conversion cycle is negative and significant at the 1% level, except for DSO, which is insignificant. Further, the results of model 2 show a

negative relationship between ROA and the elements of cash conversion cycle significant at the 1% level. The result shows an inverse relation to profitability.

This shows that companies in the industrial sector of Saudi Arabia have lesser periods in accounts receivable, accounts payable, and inventory, leading to firm profitability. The relationship of firm size with ROE is positive and significant, while ROA is negative and insignificant, which shows that firm size positively affects firm profitability. The results show that the explanatory variables explain 6 and 5% of the profitability variation ($R^2 = 0.06$ and 0.05 respectively). The diagnostic results of both the models, such as the *F*-statistic and variance inflation factor (VIF), confirm the model's validity and fitness.

Table 4. Result of regression analysis

Model 1: ROE				
Variable	α	β	t-statistic	p-value
CONSTANT	0.043	-	2.29	0.022
DSO		-0.012	-1.71*	0.087
DSI		-0.012	-4.36***	0.000
DPO		-0.019	-2.46***	0.013
SIZE		0.015	5.94***	0.000
R^2 0.06				
<i>F</i> -statistic 19.65(0.000)				
VIF 1.05				
$ROA_{i,t} = \beta_0 + \beta_1 DSO_{i,t} + \beta_2 DSI_{i,t} + \beta_3 DPO_{i,t} + \beta_4 SIZE_{i,t} + \varepsilon_{i,t}$				
Model 2: ROA				
CONSTANT	0.097	-	6.63	0.000
DSO		-0.0087	-3.72***	0.000
DSI		-0.0081	-5.05***	0.000
DPO		-0.0108	-4.21***	0.000
SIZE		-0.000631	-0.29	0.77
R^2 0.05				
<i>F</i> -statistic 15.84(0.000)				
VIF 1.05				
$ROA_{i,t} = \beta_0 + \beta_1 DSO_{i,t} + \beta_2 DSI_{i,t} + \beta_3 DPO_{i,t} + \beta_4 SIZE_{i,t} + \varepsilon_{i,t}$				

Note: * means significant at the 10% level, ** means significant at the 5% level, and *** means significant at the 1% level.

Table 5. Result of regression analysis

(C) Model 3: Tobin's q				
Variable	α	β	t-statistic	p-value
CONSTANT	0.744		16.88	0.000
DSO		-0.069	-10.64	0.000
DSI		0.0251	6.95	0.000
DPO		-0.046	-6.30	0.000
SIZE		-0.0167	-2.41	0.015
R^2 0.17				
F -statistic 62.71(0.000)				
VIF 1.05				
$Q_{i,t} = \beta_0 + \beta_1 DSO_{i,t} + \beta_2 DSI_{i,t} + \beta_3 DPO_{i,t} + \beta_4 SIZE_{i,t} + \varepsilon_{i,t}$				
(D) Model 4: GRO P				
Variable	α	β	t-statistic	p-value
CONSTANT	0.296		4.63	0.000
DSO		-0.412	-14.64	0.000
DSI		0.047	4.51	0.000
DPO		0.046	2.52	0.011
SIZE		0.014	1.61	0.108
R^2 0.18				
F -statistic 69.84 (0.000)				
VIF 1.05				
$GRO P_{i,t} = \beta_0 + \beta_1 DSO_{i,t} + \beta_2 DSI_{i,t} + \beta_3 DPO_{i,t} + \beta_4 SIZE_{i,t} + \varepsilon_{i,t}$				

Note: * means significant at the 10% level, ** means significant at the 5% level, and *** means significant at the 1% level.

Further, Table 5 reports the pooled regression results of models 3 and 4. The result of model 3, where Tobin's q is the dependent variable, shows that the relationship with the cash conversion cycle elements is negative and significant at the 1% level. In contrast, the results of model 4 show a positive relationship between GRO P and the elements of the cash conversion cycle significant at the 1% level, except for DSO, which is negative and significant at the 1% level. The result shows an inverse relation to profitability.

This model shows that the firms having larger periods in accounts receivable, accounts payable, and inventory leads to increased firm profitability. The relationship of firm size with Tobin's q is negative and significant, while with GRO P it is positive and insignificant, which shows that firm size negatively affects firm profitability. The results show that the explanatory variables explain 17 and 18% of the profitability variation ($R^2 = 0.17$ and 0.18 , respectively). The diagnostic results of both the models, such as the F -statistic and variance inflation factor (VIF), confirm the model's validity and fitness.

4. DISCUSSION

The results of the current study confirm an inverse relation of factors of cash conversion cycle with profitability. This shows that companies in the industrial sector of Saudi Arabia have lesser periods in accounts receivable, accounts payable, and inventory, leading to the firm profitability. Further, the result of model 3 is similar to that of models 1 and 2, but the result of model 4 shows some deviation where there is a positive relationship between factors of cash conversion cycle and profitability. This model shows that the firms having larger accounts receivable, accounts payable, and inventory lead to increased firm profitability. This shows that suppliers' longer payment period contributes to profit by reducing the cost of borrowing, and higher holding inventory periods contribute to profit by reducing inventory-ordering costs. Therefore, large inventory and liberal trade credit policies lead to higher sales, hence increasing the operating profit. The result of firm size shows that larger firms tend to be more profitable compared to smaller ones. Hence, H_0 is rejected and H_1 is accepted as the re-

sults confirm a significant relationship between the cash conversion cycle and firm profitability (explained in terms of ROA, ROE, Tobin's q, and GROP). The results of the current study are consistent with the previous studies of Deloof (2003), Samiloglu and Demirgunes (2008), Bhutto et al. (2011), Jahan (2011), Samiloglu and Akgun (2016), and Tsagen et al. (2017).

CONCLUSION

The study examined the impact of working capital components in terms of cash conversion cycle on the firm profitability (measured in terms of ROA, ROE, Tobin's q, and GROP) of Saudi Arabian manufacturing companies listed on Tadawul. The study used the financial data of 100 companies over a period of 12 years from 2008 to 2019. A pooled regression model was estimated to report the results. The results of models 1, 2 and 3 report a negative association between the cash conversion cycle and the firm profitability in terms of return on equity (ROE), return on assets (ROA), and Tobin's q, proposing a shorter cash conversion cycle with larger profits. Further, the results of model 4 report a positive association with the firm profitability in terms of gross operating profit (GROP), proposing a longer cash conversion cycle with larger profits. The deviation in the result of GROP might be due to the longer payment period granted by suppliers and holding higher inventory that leads to higher sales, hence increasing operating profit. The study results confirm a significant relationship between working capital components (in terms of cash conversion cycle) and the firm profitability. Therefore, the results of the current study show that the manufacturing companies in Saudi Arabia have lesser periods in working capital components leading to the firm profitability. The reported results are useful to academicians in conducting comparative studies of firms' cash conversion cycle in longitudinal and cross-sectional research methods and the managers in the materials, inventory, and sales sections in managing optimum cash conversion cycle. Finally, the study considered the variables of cash conversion cycle and one control variable, and future research should consider other elements of working capital, such as current ratio, current assets to total assets, current liability to total assets, and control variables, such as economic growth, inflation, etc.

AUTHOR CONTRIBUTIONS

Conceptualization: Abdul Rahman Shaik.

Data curation: Abdul Rahman Shaik.

Formal analysis: Abdul Rahman Shaik.

Investigation: Abdul Rahman Shaik.

Methodology: Abdul Rahman Shaik.

Project administration: Abdul Rahman Shaik.

Software: Abdul Rahman Shaik.

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Writing – original draft: Abdul Rahman Shaik.

Writing – review & editing: Abdul Rahman Shaik.

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APPENDIX A

Table A1. Companies in the Kingdom of Saudi Arabia according to their specialization, GICS code and market capitalization

Source: The Tadawul Stock Exchange.

No.	Name of the company	Specialization	GICS code	Market capitalization (in Million Saudi Riyal)
1	Saudi Ceramic Company	Capital Goods	2040	3,126
2	Astra Industrial Group	Capital Goods	1212	2,212
3	Bawan Company	Capital Goods	1302	1,800
4	Saudi Clay Pipes Company	Capital Goods	2360	1,782
5	AlBabtain Company	Capital Goods	2320	1,381.25
6	Saudi Cable Company	Capital Goods	2110	1,180.97
7	Electricity Industries Company	Capital Goods	1303	1,098
8	Saudi Industrial Export Company	Capital Goods	4140	754.27
9	Saudi Arabian Amiantit Company	Capital Goods	2160	713.60
10	Middle East Cables Company	Capital Goods	2370	700.80
11	Al Omran Industries & Trading Co	Capital Goods	4141	694.80
12	Thob Al Aseel Company	Consumer Durables	4012	2,592
13	Abdullatif Inds. Invest. Company	Consumer Durables	2340	1,280.50
14	Fitahi Holding Group	Consumer Durables	4180	1,107.70
15	Lazurde Company	Consumer Durables	4011	890.10
16	Saudi Industrial Development Co	Consumer Durables	2130	610.40
17	Herfy Food Services Company	Consumer Services	6002	4,340.03
18	Dur Hospitality Company	Consumer Services	4010	2,860
19	Al Hokair Tourism Group	Consumer Services	1820	1,152.80
20	Raydan Food Company	Consumer Services	6012	832.50
21	Tourism Enterprise Company	Consumer Services	4170	601.90
22	The Saudi Arabian Oil company	Energy	2222	6,910,000
23	National Shipping Company	Energy	4030	15,277.50
24	Rabigh Petrochemical Company	Energy	2380	12,772.08
25	Aldrees Petroleum Company	Energy	4200	4,050
26	Almarai Company	Food and Beverages	2280	51,000
27	Savola Group	Food and Beverages	2050	20,104.37
28	Saudia Dairy and Foodstuff Co.	Food and Beverages	2270	5,102.50
29	Halwani Bros Company	Food and Beverages	6001	3,782.97
30	National Agri. Development Co.	Food and Beverages	6010	3,186.41
31	Saudi Fisheries Company	Food and Beverages	6050	2,240
32	Aljouf Agri. Development Co.	Food and Beverages	6070	2,196
33	Wafrah Industry & Development Co.	Food and Beverages	2100	1,304.17
34	Jazan Energy and Development Co.	Food and Beverages	6090	1,095
35	Tabuk Agri. Development Co.	Food and Beverages	6040	988.96
36	Ash-Sharqiyah Development Co.	Food and Beverages	6060	868.50
37	Al Gassim Investment Holding Co.	Food and Beverages	6020	798
38	Dr. Sulaiman Al Habib Med. Group	Health Care	4013	41,650
39	Mouwasat Medical Services Co.	Health Care	4002	13,740
40	Dallah Health Care Company	Health Care	4004	4,851
41	Saudi Chemical Company	Health Care	2230	2,921.69
42	National Medical Care Company	Health Care	4005	2,336.69
43	AYYAN Investment Company	Health Care	2140	1,424.46
44	Saudi Basic Industries Corporation	Materials	2010	319,800
45	Saudi Arabian Mining Company	Materials	1211	63,252.33
46	SABIC Agri Nutrients Company	Materials	2020	46,366.30
47	Yanbu National Petro Company	Materials	2290	40,106.25
48	Saudi Kayan Petro Company	Materials	2350	22,260
49	National Petrochemical Company	Materials	2002	18,576
50	Advanced Petrochemical Company	Materials	2330	14,676.67

Table A1 (cont.). Companies in the Kingdom of Saudi Arabia according to their specialization, GICS code and market capitalization

No.	Name of the company	Specialization	GICS code	Market capitalization (in Million Saudi Riyal)
51	Sahara International Petro Company	Materials	2310	13,933.27
52	Saudi Industrial Investment Group	Materials	2250	12,735
53	Southern Province Cement Company	Materials	3050	11,928
54	Saudi Cement Company	Materials	3030	9,700.20
55	Qassim Cement Company	Materials	3040	7,740
56	Yanbu Cement Company	Materials	3060	7,245
57	Yamama Cement Company	Materials	3020	6,135.75
58	Arabian Cement Company	Materials	3010	4,220
59	City Cement Company	Materials	3003	3,724
60	Eastern Province Cement Company	Materials	3080	3,637.80
61	Alujain Holding Corporation	Materials	2170	3,556.88
62	Najran Cement Company	Materials	3002	3,396.60
63	Northern Region Cement Company	Materials	3004	3,203.20
64	Al Yamamah Steel Inds Company	Materials	1304	1,747.52
65	Hail Cement Company	Materials	3001	1,644.72
66	Ummulqura Cement Company	Materials	3005	1,644.50
67	Tabuk Cement Company	Materials	3090	1,630.80
68	Methanol Chemicals Company	Materials	2001	1,594.33
69	Aljouf Cement Company	Materials	3091	1,590.16
70	Saudi Steel Pipe Company	Materials	1320	1,405.05
71	The National Company for Glass	Materials	2150	1,350.55
72	Zamil Industrial Investment Co.	Materials	2240	1,327.20
73	Takween Adv. Industries Company	Materials	1201	1,318.60
74	Zahrat Al Waha Trading Company	Materials	3007	1,311
75	United Wire Factories Company	Materials	1301	1,265.36
76	Saudi Paper Manufacturing Co.	Materials	2300	1,148.16
77	Basic Chemical Industries Company	Materials	1210	1,078
78	National Metal Manufacturing Co.	Materials	2220	1,069.66
79	Middle East Paper Company	Materials	1202	1,024
80	Al Kathiri Holding Company	Materials	3008	958.24
81	National Gypsum Company	Materials	2090	942.08
82	Arabian Pipes Company	Materials	2200	878.40
83	Nama Chemicals Company	Materials	2210	876.12
84	Filling & Packing Manufacturing Co.	Materials	2180	745.20
85	Jarir Marketing Company	Retailing	4190	20,520
86	United Electronics Company	Retailing	4003	5,670
87	Fawaz Abdulaziz Alhokair Company	Retailing	4240	4,095
88	Saudi Company for Hardware	Retailing	4008	2,160
89	Saudi Automotive Services Co.	Retailing	4050	1,938
90	Al Hassan Ghazi Ibrahim Shaker Co.	Retailing	1214	1,014.30
91	Saudi Telecom Company	Telecommunication	7010	237,600
92	Ethad Etisalat Company	Telecommunication	7020	22,099
93	Mobile Telecommunication Co.	Telecommunication	7030	12,042.98
94	Saudi Ground Services Company	Transport	4031	5,574.20
95	Saudi Industrial Services Company	Transport	2190	3,088.56
96	Saudi Public Transport Company	Transport	4040	2,975
97	United International Transport Co.	Transport	4260	2,722.25
98	BATIC Invest. & Logistics Co.	Transport	4110	1,125
99	Saudi Electricity Company	Utilities	5110	87,831.72
100	National Gas and Inds. Company	Utilities	2080	2,325