

Benchmarking Financial Performance: A Case Study Of Saudi Construction Companies

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Abstract – Due to the nature of construction industry, construction companies are facing poor financial performance. This is not only disruptive to the industry, but can also result into a nation's economy threat. Financial benchmarking is a means of determining financial performance of companies. This paper aims to establish financial benchmark for the listed Saudi construction companies on Saudi Stock Exchange Market. Overall benchmarking score was developed for the companies based on the financial performance indexes, which comprises of profitability, growth, financial stability and cash flow. Therefore, the companies were ranked according to their benchmark scores. This enable the study to determine the financial weakness and strengths of the companies. This study will help the companies with poor financial performance to check their financial drawbacks and develop some improvement methods to achieve a better financial performance.

Keywords—Construction Industry, Financial Performances, Benchmarking, Financial Data, Saudi.

I. INTRODUCTION

The Kingdom of Saudi Arabia is among Gulf Cooperative Council (GCC) with largest proven oil reserves in the world. These reserves made the kingdom one of the largest producer and exporter of petroleum in the world. The kingdom earned 73% of its total exports from oil and gas, these generated 63% of government's revenues and 41% of the kingdom's gross domestic product [1]. The wealth generated from oil and natural gas created some world's fastest growing economy in the kingdom.

Thereby, the kingdom is undergoing transformation because of several on-going and completed construction projects financed by the saved petroleum revenues [2]. These construction projects attract contractors and construction companies from other countries to venture into Saudi construction industry. Thereby, making the number of the Saudi's construction companies increasing at an encouraging rate.

Construction industry indicates a nation's economy condition [3]. But, thousands of the companies in this

industry are facing poor financial performance. Uncompleted private and public construction projects are the end-products of poor financial performance of construction companies [4]. This often leads to economic and social damages [2].

The economic and social damages resulting from failing financial performance of construction companies are beyond quantifiable costs to the companies' stakeholders [4]. Therefore, it is important to recognize failing financial performance at earliest stage, in order to reduce the damages. To curb the economic and social damages resulting from poor financial performance of construction companies, a periodic evaluation of their financial data is essential. In addition, the evaluated financial data of companies in the same industry can be compared to each other, to determine their financial performance [5].

Benchmarking is a means of comparing companies' performance in the same industry [6]. Reference [7] highlighted that benchmarking is a means of improving company's efficiency and effectiveness of its products and services, by comparing them to others in the same industry. Financial benchmarking enables construction companies' executives to determine their financial performance by comparing with others in construction industry. This allows the companies to determine their financial weaknesses and strengths [8]. According to [6], best practices were identified by comparing the financial performance and enable the concerned companies improvise on their financial weakness. So, it is important to benchmark the financial performance of the companies in the same industry.

Benchmarking depend on measurements. The processes of benchmarking adopted in the current study were: Decide what to measure; Collection of data; Calculate key performance indicators (KPIs); Report the results; and Analyze the results. Decision on what to measure was determined through rigorous review of early study on financial performance; Collection of data was done through questionnaire survey and downloading of financial statement of construction companies from Saudi Stock Exchange Market (SSEM); Establishment of the KPIs was done based on the outcome of the survey; Reporting and analyzes of the results was done accordingly. In this study, financial data analyzes and financial key

performance indicators were used to develop the financial benchmarking score of the companies.

Financial data are the main sources of information for establishing financial analysis of industry. Financial data of companies comprises of balance sheets, income statements, and detailed reports. Balance

sheets gives details of companies' assets, liabilities, and equity at a specific time. It is usually prepared at the end of each month and at the end of the fiscal year [5].

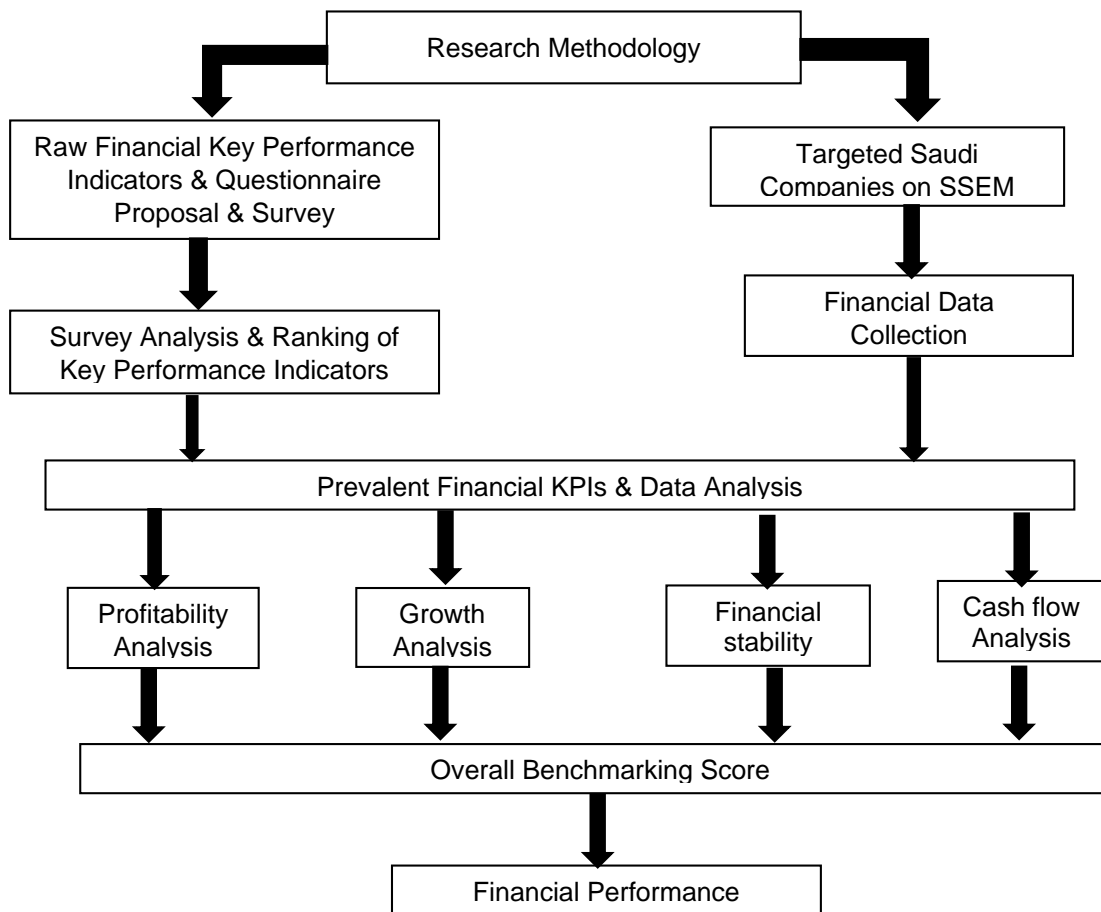


Fig. 1. Research Methodology Flowchart

To carry out financial benchmarking and performance assessment successfully, financial KPIs that review the companies must be put into consideration. These financial KPIs need standard measurement methods and relative weights to score the performance [9]. This paper aims to benchmark financial performance for the listed Saudi construction companies on SSEM. To achieve the study's objective, the research procedures were broken down into two phases, as shown in Figure 1.

II. RAW FINANCIAL KEY PERFORMANCE INDICATORS, QUESTIONNAIRE PROPOSAL AND SURVEYS

A set of 8 raw characteristics indicators were initially obtained from rigorous literature review of previous studies that assessed the financial performance of organizations. These financial KPIs formed the basis of the study's questionnaire survey. The questionnaire was divided into two major parts. These are general information and degree of importance of financial performance indicators in construction organizations. The first part of the

questionnaire, general information, contained questions about the construction organization; for example, name of the company, number of employees, number of executed project in the last ten years, and information about the individual completing the questionnaire. The second part comprised questions about the raw financial KPIs. In this part of the questionnaire, each organization were asked to rate the indicators based on their professional judgment on a given five-points Likert-type scale (where 1 = very low importance, 2 = low importance, 3 = medium importance, 4 = high importance, and 5 = very high importance).

A. Surveys

It is rarely impossible to conduct a full population surveys, but the survey in this research was conducted on the basis of statistical sampling as suggested by Wang et al., [10]. The principle of statistical sampling which guarantee a representative sample was employed for economy and speed. In this study, the questionnaire survey targeted the "Grade 1" Saudi construction companies, to acquire reliable and

adequate information. The sample size that represent the survey population was calculated using “(1)”.

$$n = \frac{n'}{[1 + (n'/N)]} \text{ where } n' = \frac{p \times q}{V^2} \quad (1)$$

Where: n = the required sample size; n' = the first estimate of sample size; N = the population size; P = the proportion of the characteristic being measured in the target population, $q = 1 - p$; and V = standard error of sampling population.

For the purpose of determining maximum sample size, Hany et al. [11], suggested that the values of p and q should be 0.5 and the standard error should be set to 10%, which represents the maximum standard error allowed.

Substituting the pre-defined parameters, the first estimated sample size $n' = 25$ and required sample size $n = 18.2$ was obtained. Thereby, making the minimum required response rate to be 27.2%. This infers that a minimum of 19 construction companies should participated in this study in order to get a minimum required information.

A total of 67 questionnaires were delivered to the companies, together with a cover letter amplifying the purpose of the study and assuring them of anonymity. A total of 24 questionnaires was completed and returned, resulting in a 35.8% response rate, which is greater than the minimum required response rate of 27.2%.

B. Survey Analysis and Ranking of Assessment Indicators

The participated organizations provided numerical scoring, which expressing their opinions on the degree of importance of each raw financial KPIs. Data collected were analyzed using relative importance index (RII), as stated in “(2)”.

$$RII = \frac{\sum_{i=1}^5 W_i X_i}{A \times n} \quad (2)$$

Where W_i = weight given to the i th response: $i = 1, 2, 3, 4, 5$; X_i = frequency of the i th response; A = highest weight (in this study, its 5); and n = number of respondents.

Table 1 shows the mean value, standard deviation, ranking and RII of the financial KPIs. Standard deviation of each KPIs was relatively small enough to conclude that the respondents agreed on their importance.

This study used the most ranked four financial KPIs for the analysis and evaluation of the listed Saudi construction companies on SSEM.

TABLE 1: FINANCIAL KPIs AND THEIR RANKING USING RELATIVE IMPORTANCE INDEX

Financial KPIs	Mean	Standard Deviation	RII (%)	Ranking
Profitability	4.58	0.72	91.7	1
Growth	4.25	0.79	85.0	2
Financial stability	4.08	0.72	81.7	3
Cash flow	4.00	0.88	80.0	4
Competitive price	3.42	0.58	68.3	5
Capital	3.21	0.93	64.2	6
Investment in development of new market	3.08	1.06	61.7	7
Interest cover	2.54	1.06	50.8	8

III. FINANCIAL DATA COLLECTION

Financial data of the sixteen Saudi companies listed on the construction section of SSEM were downloaded [12]. In the context of this study, companies' code, as listed on SSEM, was used to represent the companies. Some financial reports were published in Arabic language; these were translated to English language accordingly. Data regarding to the most ranked financial KPIs were extracted from the downloaded financial data and saved in Microsoft Excel Spreadsheet for computation process.

IV. FINANCIAL DATA ANALYSIS

A. Profitability Evaluation

The primary goal of business organizations is profits. Insufficient profits make business liable to failure and would not enable the business to survive in the long run [13]. Thus, the need to measure past and current profits, and projecting future profits is essential. Several formulas and indices measures the profitability index of organizations. The profitability index (PI) of the companies was computed using “(3)”.

$$PI = \frac{\text{Profit before Zakat}}{\text{Total Revenues}} \quad (3)$$

In this study, “zakat” is an Arabic word used instead of taxes, and is mainly used in the kingdom. Table 2 and Figure 2 shows the profitability index and sketches of the companies. The companies were ranked according to their profitability index, company with organization code 2360 received the first ranking with an index of 0.276. While company with code 1310 got the lowest ranking, this shows a poor profitability index of the company.

TABLE 2: PROFITABILITY INDEX COMPUTATION OF THE COMPANIES.

Company Code	Net Income Before Zakat (SR)	Sales (SR)	Other Revenues (SR)	Total Revenue (SR)	Profitability Index	Rank
2360	84,424,000	303,415,000	2,456,000	305,871,000	0.276	1
2090	20,981,000	80,538,000	2,387,000	82,925,000	0.253	2
2040	318,166,000	1,600,550,000	-748,000	1,599,802,000	0.199	3
4230	152,770,000	971,411,000	0	971,411,000	0.157	4
1301	121,322,000	1,001,320,000	1,466,000	1,002,786,000	0.121	5
2130	41,382,000	319,754,000	112,395,000	432,149,000	0.096	6
1320	79,448,000	839,336,000	223,000	839,559,000	0.095	7
2320	114,385,000	1,388,977,000	49,506,000	1,438,483,000	0.080	8
1302	179,297,000	2,448,460,000	0	2,448,460,000	0.073	9
2240	257,964,000	5,413,984,000	13,381,000	5,427,365,000	0.048	10
2160	148,195,000	3,130,672,000	0	3,130,672,000	0.047	11
2200	20,673,000	383,243,000	63,178,000	446,421,000	0.046	12
1330	65,995,000	1,530,322,000	2,433,000	1,532,755,000	0.043	13
2370	37,401,000	930,731,000	0	930,731,000	0.040	14
2110	-199,778,000	2,447,859,000	124,877,000	2,572,736,000	-0.078	15
1310	-125,800,000	1,431,300,000	12,100,000	1,443,400,000	-0.087	16

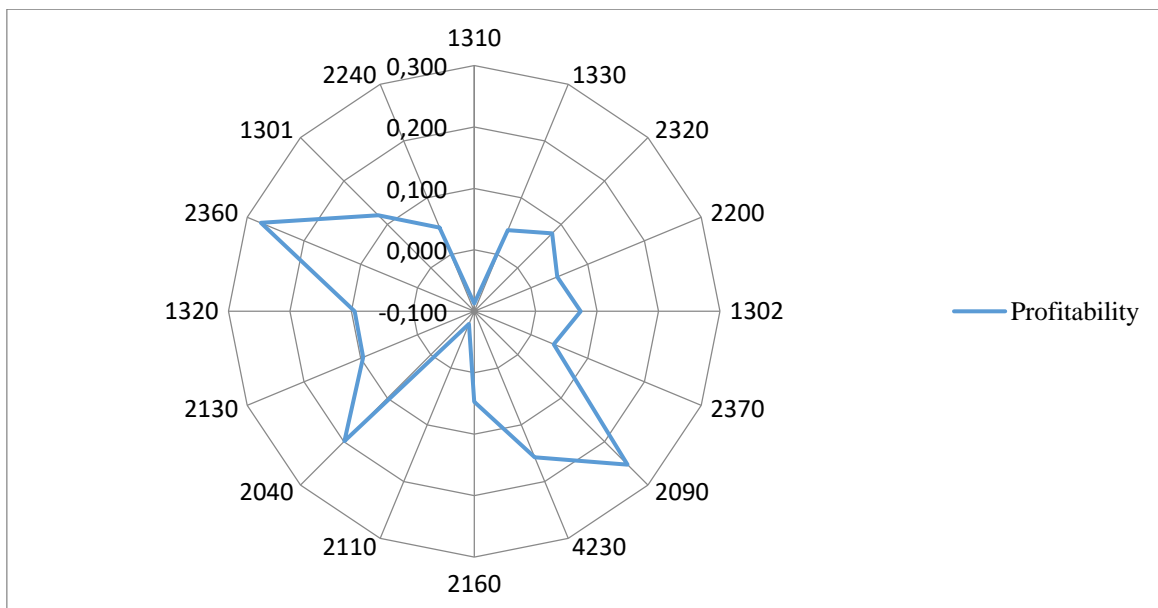


Fig. 2. Profitability Index Sketch of the Companies.

B Growth Evaluation

Reference [9] divulged that growth is one of important signal of evaluating financial performance of companies. Different methods can be used to estimate organizations' growth. One of the suitable method is comparing companies' present revenue to the previous earned revenue. The growth rate index was computed using "(4)".

$$\text{Growth Rate Index} = \frac{\text{Present Year's Revenue} - \text{Previous Year's Revenue}}{\text{Previous Year's Revenue}} \quad (4)$$

Table 3 and Figure 3 shows the companies' growth rate ranking and the sketch respectively. Company with the code 1302 got the first rank with an index of 0.168, while company with code 2200 got the lowest ranking with an index of -0.348.

TABLE 3: GROWTH INDEX COMPUTATION OF THE COMPANIES.

Company Code	Present Revenue (SR)			Previous Revenue			Growth Index	Rank
	Sales (SR)	Other Revenues (SR)	Total Revenue (SR)	Sales (SR)	Other Revenues (SR)	Total Revenue (SR)		
1302	2,448,460,000	0	2,448,460,000	2,085,620,000	10,354,000	2,095,974,000	0.168	1
1320	839,336,000	223,000	839,559,000	726,358,000	289,000	726,647,000	0.155	2
4230	971,411,000	0	971,411,000	864,845,000	0	864,845,000	0.123	3
2040	1,600,550,000	-748,000	1,599,802,000	1,447,363,000	14,634,000	1,461,997,000	0.094	4
2130	319,754,000	112,395,000	432,149,000	314,433,000	97,789,000	412,222,000	0.048	5
2240	5,413,984,000	13,381,000	5,427,365,000	5,354,874,000	8,386,000	5,363,260,000	0.012	6
1301	1,001,320,000	1,466,000	1,002,786,000	1,005,223,000	622,000	1,005,845,000	-0.003	7
1310	1,431,300,000	12,100,000	1,443,400,000	1,443,700,000	11,700,000	1,455,400,000	-0.008	8
1330	1,530,322,000	2,433,000	1,532,755,000	1,523,815,000	33,466,000	1,557,281,000	-0.016	9
2360	303,415,000	2,456,000	305,871,000	311,581,000	1,471,000	313,052,000	-0.023	10
2320	1,388,977,000	49,506,000	1,438,483,000	1,352,552,000	129,879,000	1,482,431,000	-0.030	11
2090	80,538,000	2,387,000	82,925,000	82,268,000	5,218,000	87,486,000	-0.052	12
2370	930,731,000	0	930,731,000	990,581,000	0	990,581,000	-0.060	13
2110	2,447,859,000	124,877,000	2,572,736,000	2,687,850,000	70,472,000	2,758,322,000	-0.067	14
2160	3,130,672,000	0	3,130,672,000	3,454,795,000	0	3,454,795,000	-0.094	15
2200	383,243,000	63,178,000	446,421,000	679,913,000	4,408,000	684,321,000	-0.348	16

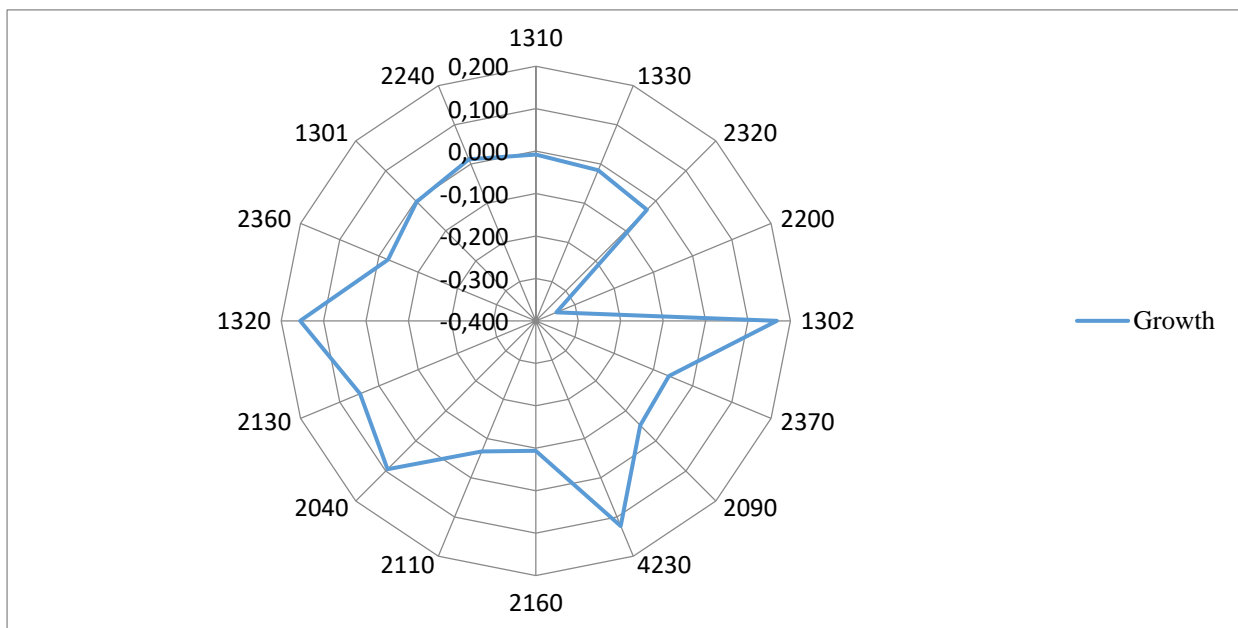


Fig. 3. Growth score Index Sketch of the Companies.

C Financial Stability Evaluation

Debt ratio indicates companies' financial stability. Companies with an increasing debt ratio means that, it has a weakened financial condition. Debt ratio indicates the percentage of companies' assets that are provided by debt, as shown in "(5)".

$$Debt\ Ratio = \frac{Total\ Debt}{Total\ Asset} \quad (5)$$

Table 4 presents the financial stability index of the companies while Figure 4 sketches the financial stability score of the companies. As computed, company with code 1310 got the lowest ranking and company with code 2090 received the first ranking.

TABLE 4: FINANCIAL STABILITY INDEX COMPUTATION OF THE COMPANIES.

Company Code	Current Liabilities (SR)	Non-Current Liabilities (SR)	Total Debt (SR)	Total Assets (SR)	Financial Stability Index	Rank
2090	26,538,000	9,331,000	35,869,000	519,995,000	0.931	1
2130	55,384,000	39,211,000	94,595,000	498,635,000	0.810	2
4230	396,056,000	119,083,000	515,139,000	1,431,628,000	0.640	3
1330	1,208,500,000	1,126,556	1,209,626,556	3,146,644,000	0.616	4
1320	138,797,000	410,842,000	549,639,000	1,343,946,000	0.591	5
2200	391,042,000	121,029,000	512,071,000	1,233,678,000	0.585	6
2040	802,859,000	421,480,000	1,224,339,000	2,805,788,000	0.564	7
2360	171,896,000	50,648,000	222,544,000	453,742,000	0.510	8
1302	980,466,000	128,011,000	1,108,477,000	1,877,670,000	0.410	9
2160	2,508,257,000	212,310,000	2,720,567,000	4,411,355,000	0.383	10
2370	434,481,000	460,799,000	895,280,000	1,400,461,000	0.361	11
2320	1,258,735,000	112,014,000	1,370,749,000	1,979,703,000	0.308	12
2240	518,538,000	4,508,640,000	5,027,178,000	6,907,859,000	0.272	13
2110	2,168,760,000	365,141,000	2,533,901,000	3,212,051,000	0.211	14
1301	409,570,000	3,253,000	412,823,000	517,169,000	0.202	15
1310	2,977,500,000	228,600,000	3,206,100,000	2,099,900,000	-0.527	16

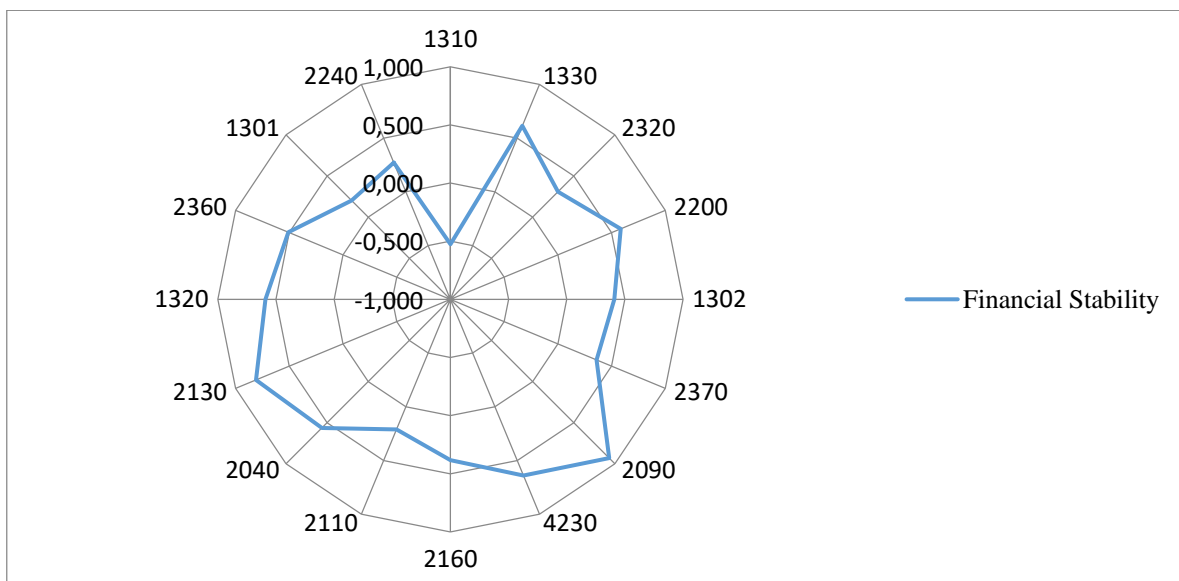


Fig. 4. Financial Stability Index Sketch of the Companies.

D Cash Flow Evaluation

Cash flow index is the fourth indicator used in this study to evaluate the financial performance of the companies. Cash flow index shows how well companies' current liabilities is being financed by the cash flow made from the companies' operations.

$$\text{Cash Flow} = \frac{\text{Operational Cash Flow}}{\text{Current Liabilities}}. \quad (6)$$

Table 5 shows the cash flow index of the companies and Figure 5 illustrates the index of the companies. As calculated, company with code 1310 received the lowest ranking with an index of 0.485,

while company with code 2240 got the highest ranking with an index of 3.353

TABLE 5: CASH FLOW INDEX COMPUTATION OF THE COMPANIES.

Company Code	Sales (SR)	Other Revenues (SR)	Total Revenue (SR)	Investments (SR)	Cash Flow Generated from Operations (SR)	Cash flow Index	Rank
2240	5,413,984,000	13,381,000	5,427,365,000	3,688,520,000	1,738,845,000	3.353	1
2130	319,754,000	112,395,000	432,149,000	287,540,000	144,609,000	2.611	2
1302	2,448,460,000	0	2,448,460,000	0	2,448,460,000	2.497	3
1301	1,001,320,000	1,466,000	1,002,786,000	0	1,002,786,000	2.448	4
1320	839,336,000	223,000	839,559,000	506,097,000	333,462,000	2.403	5
2370	930,731,000	0	930,731,000	10,613,000	920,118,000	2.118	6
2040	1,600,550,000	-748,000	1,599,802,000	77,835,000	1,521,967,000	1.896	7
2360	303,415,000	2,456,000	305,871,000	0	305,871,000	1.779	8
1330	1,530,322,000	2,433,000	1,532,755,000	4,209,000	1,528,546,000	1.265	9
4230	971,411,000	0	971,411,000	485,731,000	485,680,000	1.226	10
2160	3,130,672,000	0	3,130,672,000	94,477,000	3,036,195,000	1.210	11
2200	383,243,000	63,178,000	446,421,000	0	446,421,000	1.142	12
2320	1,388,977,000	49,506,000	1,438,483,000	141,492,000	1,296,991,000	1.030	13
2110	2,447,859,000	124,877,000	2,572,736,000	440,224,000	2,132,512,000	0.983	14
2090	80,538,000	2,387,000	82,925,000	58,443,000	24,482,000	0.923	15
1310	1,431,300,000	12,100,000	1,443,400,000	200000	1,443,200,000	0.485	16

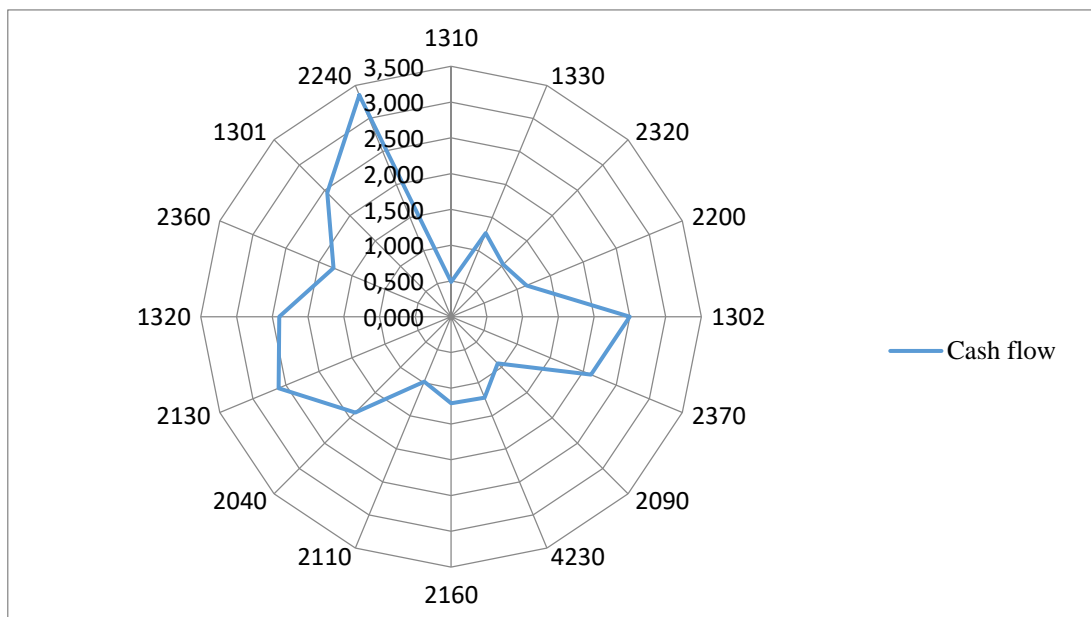


Fig. 5. Cash Flow Index Sketch of the Companies.

V OVERALL FINANCIAL PERFORMANCE EVALUATION

Benchmarking score for the financial criteria reflects the overall financial performance of the organizations. The overall benchmarking score of the companies was computed by adding the products of the relative weight of each financial KPIs and its corresponding financial data analysis. Table 6 and

Figure 6 shows the benchmarking score computation and sketch of the companies respectively. Comparing the overall benchmarking scores, company with code 1310 got the lowest ranking with a score of -0.182. This shows a failing financial condition of the company. Company with codes 2130, 1320, and 2090 received the first three ranking with a score of 0.660, 0.564 and 0.555 respectively.

TABLE 6: OVERALL FINANCIAL PERFORMANCE AND BENCHMARKING SCORE

Companies' Code	Profitability Index	Growth Index	Financial Stability Index	Cash flow Index	Benchmarking score	Rank
2130	0.096	0.048	0.810	2.611	0.660	1
1320	0.095	0.155	0.591	2.403	0.564	2
2090	0.253	-0.052	0.931	0.923	0.555	3
2040	0.199	0.094	0.564	1.896	0.524	4
2240	0.048	0.012	0.272	3.353	0.514	5
2360	0.276	-0.023	0.510	1.779	0.502	6
1302	0.073	0.168	0.410	2.497	0.498	7
4230	0.157	0.123	0.640	1.226	0.465	8
1301	0.121	-0.003	0.202	2.448	0.406	9
1330	0.043	-0.016	0.616	1.265	0.400	10
2370	0.040	-0.060	0.361	2.118	0.393	11
2200	0.046	-0.348	0.585	1.142	0.331	12
2160	0.047	-0.094	0.383	1.210	0.295	13
2320	0.080	-0.030	0.308	1.030	0.264	14
2110	-0.078	-0.067	0.211	0.983	0.159	15
1310	-0.087	-0.008	-0.527	0.485	-0.182	16

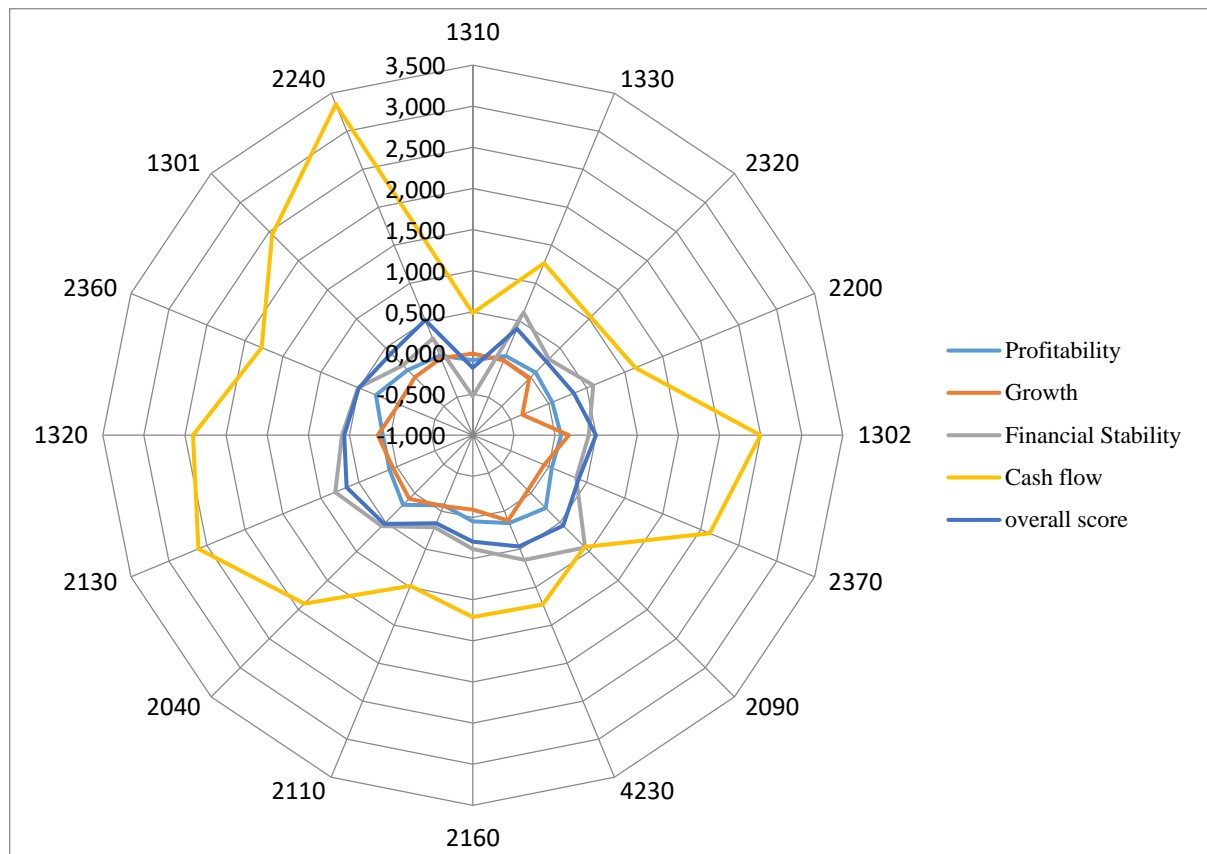


Fig. 6. Overall Benchmarking Score

Figure 7 to 10 present the analyzes of the financial weakness of the company (code 1310) with the lowest overall benchmarking score. Figure 7 sketches the profitability index for the company in the last four years. The results indicate that the company is experiencing financial losses during last years. The

largest losses were in 2012 with an index of -0.912. This is an indication of failing financial condition of the company. Figure 8 elucidates that, the company achieved the best and the lowest growth in 2011 and 2012 respectively. Figure 9 shows the financial stability score of the company for last four years. The

highest score was in 2010 and thereafter, the score started decreasing to -0.527 in 2013. Figure 10 shows the cash flow score for the company in the last four years. The result shows that the highest cash flow

score was achieved in 2010 with 1.377 and decreased to 0.485 in 2013. This indicate that the company was unable to finance its liabilities with the operational cash flow.



Fig. 7. Profitability Index of Company with Code 1310 for Last Four Years



Fig. 8. Growth Index of Company with Code 1310 for the Last Four Years

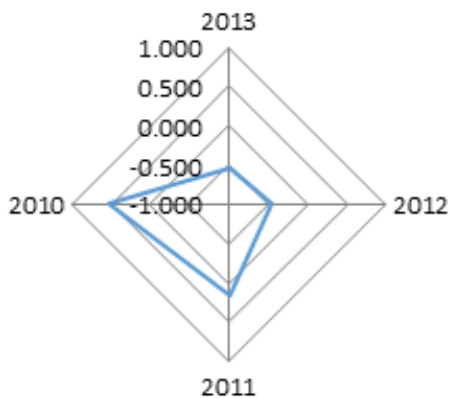


Fig. 9. Financial Stability Index of Company with Code 1310 for the Last Four Years

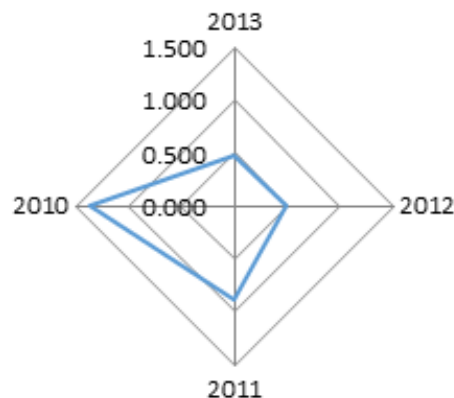


Fig. 10. Cash Flow Index of Company with Code 1310 for the Last Four Years

VICONCLUSION

Financial benchmarking enable managers to evaluate the current performance of their companies and develop tactics and improvement plans. Financial performance evaluation was conducted in this study for the Saudi listed construction companies on SSEM. The results show that companies with codes 2130, 1320, and 2090 achieved the highest ranks in overall benchmarking score. This is an indication that the companies have a stable financial condition, good profitability index and they have good debt management. However, company with code 1310 got the lowest overall benchmarking score. This indicates that the company has a failing financial performance. It also shows that the company is experiencing different financial problems that led to deficit in its shareholders' equity. This study helps in identifying the financial weakness and strength points of the listed construction companies on SSEM. Furthermore,

construction companies can use the standard measurement formulas of the most ranked four financial KPIs and their relative weights to determine numerical values of their KPIs and their performance. It's anticipated that Saudi construction companies will adopt this, as an appraisal and evaluation techniques to check their financial performance and device some financial improvement techniques when necessary.

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