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Financial Ratio Analysis: An Assessment of Malaysian Contracting Firms

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Abstract: This paper examines the role of financial management in the success or failure of construction firms. According to previous studies on the impact of financial factors in the failure of construction projects, poor financial management and lack of capital are the main determinants of construction failure. Failures in the construction industry are experienced not only by developing countries but also worldwide, and the failure scenario is present in the construction industry in Malaysia. The failure rate of construction companies in Malaysia is high. According to the Construction Industry Development Board Malaysia (CIDB), from January 2006 to August 2008, 11,321 construction companies were classified as dormant and non-active. There are very few successful contractors in Malaysia, and most construction projects cannot be completed within the original schedule. The sources of failure are directly related to financial factors. In this case study, 17 financial ratios were used to measure companies' financial performance. Six medium and large Bumiputera contractors were selected as case studies. This study found that most Bumiputera construction companies had insufficient cash capital to finance their construction work, experienced a low profit margin from construction projects and were highly dependent on debt capital to finance their construction costs. There was a lack of monitoring systems for cash flow and project costs. Without effective financial practices, construction companies are setting themselves up for failure.

Keywords: Construction industry, Financial management, Financial failure

INTRODUCTION

The construction industry plays an important role in enhancing the economic performance of a country, and it plays a central role in national welfare by using various resources to construct economic and social facilities (Bashir, 2000). The construction industry contributes, on average, between 5% and 9% of the gross domestic product (GDP) in developing countries (Kirmani, 1988 in Abu Bakar, 2002). The importance of the construction sector is related not to its size but to its role in economic development. This sector produces all of the facilities needed by other producers and end consumers (Abdullah, 2004). The construction industry in Malaysia, as in other countries, can serve as a barometer of the nation's economic conditions. However, every year, thousands of contractors face bankruptcy and business failure. These firms leave behind unfinished private and public construction projects. Even worse, they leave behind billions of dollars in losses for project owners and taxpayers (Strischek and McIntyre, 2008).

Previous studies on the impact of financial factors on the failure of construction firms have identified poor financial management and lack of capital as the main determinants of construction failure (Kangari, 1988; Navon, 1996).

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Peterson (2005) cites evidence from the Surety Information Office (SIO), an office that collects data on surety bonds in United State, that the main factors in failure are directly related to the financial management of a company. Yin (2006) found that most contractors do not have sufficient capital to finance their undertakings. Unlike most manufacturers, contractors generally do not have fixed assets, such as land or buildings; instead, they have construction equipment. Unfortunately, banks do not accept these moving assets as collateral for loans. Without bank financing, contractors find it more difficult to undertake their projects. Financial problems faced by contractors are also due to projects' low profit margins. Through the open tender system, contractors must consistently produce good work at the cheapest price. Previous studies have used financial ratio analysis to measure the performance of construction companies. In the present study, 17 financial ratios for construction companies proposed by Peterson (2005) were used to evaluate relative performance.

PROBLEM STATEMENT

High Number of Business Failures in the Construction Industry Worldwide

The examples below indicate the high number of business failures in the construction industry worldwide. In 1997, 10,867 construction companies in the United States failed, bringing the total number of construction company failures for the eight-year period beginning in 1990 to more than 80,000 (Peterson, 2005). The likelihood of failure is faced not only by small and new firms but also by large contracting firms. For example, in 2002, two of Japan's largest construction companies, the Sato Kogy Company and Nissan Construction, filed for bankruptcy (Belson, 2002). In the same year, Germany's second-largest construction company, Philipp Holzmann, which had been in business for more than 150 years, also filed for bankruptcy (Behrens, 2002). The same scenario occurs in Malaysia. The failure rate of construction firms in Malaysia is high. According to the Construction Industry Development Board Malaysia (CIDB), from January 2006 to August 2008, 11,321 construction firms were classified as dormant and non-active.

High Non-Performing Loans (NPL) in the Construction Industry

Many loans to construction firms become non-performing, commonly referred to as un-collectable (Lin, 2008). Table 2 shows the amount of loans and non-performing loans (NPLs) by contractors for 2004 and 2005.

Table 1. Statistics for Dormant and Non-Active Construction Firms in Malaysia (January 2006–August 2008) by Category/Size

State	Category / Size							Total
	G1	G2	G3	G4	G5	G6	G7	
Johor	614	197	230	31	36	8	16	**1,132**
Kedah	415	78	99	18	32	13	19	**674**
Kelantan	600	75	134	26	54	15	37	**941**
Labuan	25	3	5	1	1	0	1	**36**
Melaka	193	49	61	7	11	6	10	**337**
Negeri Sembilan	541	85	88	10	7	5	7	**743**
Pahang	301	66	91	26	14	3	10	**511**
Perak	455	138	149	23	36	11	16	**828**
Perlis	172	25	19	6	6	2	5	**235**
Pulau Pinang	280	98	113	12	19	4	23	**549**
Sabah	662	155	185	33	45	15	43	**1,138**
Sarawak	204	60	62	24	16	5	30	**401**
Selangor	895	259	404	68	90	35	94	**1,845**
Terengganu	155	37	103	27	32	7	22	**383**
Wilayah Persekutuan	417	204	462	78	159	53	195	**1,568**
Total	**5,929**	**1,529**	**2,205**	**390**	**558**	**182**	**528**	**11,321**

Source: CIDB (August 2008)

Table 2. Amount of NPLs to Bank by Construction Industry for 2004 and 2005

Commercial Bank	2004			2005		
	Loan (RM'000)	NPLs (RM'000)	%	Loan (RM'000)	NPLs (RM'000)	%
Domestic						
Affin Bank Bhd	1,388,195	638,351	45.98	1,539,131	578,487	37.58
Alliance Bank Bhd	832,016	n/a	n/a	923,763	126,880	13.73
AmBank (M) Bhd	845,141	n/a	n/a	1,551,835	834,620	53.78
BCB Bank	3,837,234	337,018	8.78	4,531,916	478,991	10.57
Eon Bank Bhd	2,064,816	222,860	10.79	1,782,588	250,672	14.06
Hong Leong Bank Bhd	630,179	n/a	n/a	901,480	264,969	29.39
Maybank Bhd	5,437,549	n/a	n/a	5,950,597	822,449	13.82
Public Bank Bhd	1,867,005	90,226	4.83	2,039,666	52,165	2.57
RHB Bank Bhd	2,969,380	676,074	22.77	2,435,838	633,919	26.02

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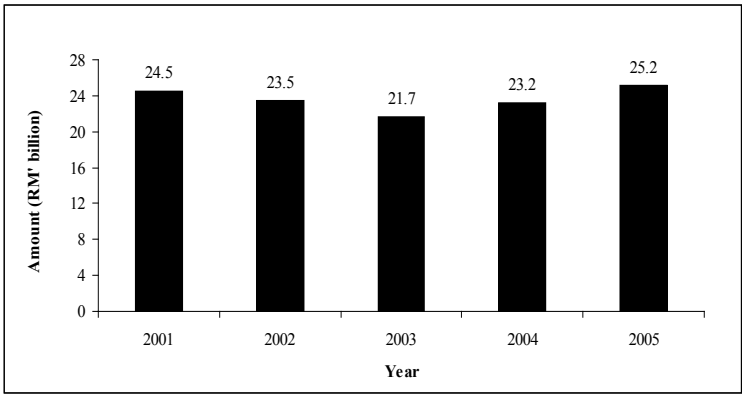
Table 2 (*continued*)

Commercial Bank	2004			2005		
	Loan (RM'000)	NPLs (RM'000)	%	Loan (RM'000)	NPLs (RM'000)	%
Southern Bank Bhd	1,072,768	76,535	7.13	1,112,725	95,500	8.58
Bank Islam (M) Bhd	904,120	332,455	36.77	1,055,851	335,276	31.75
Bank Muamalat (M) Bhd	510,755	52,383	10.26	533,616	35,242	6.60
Foreign						
HSBC Bank (M) Bhd	457,594	57,149	12.49	428,685	31,718	7.4
OCBC Bank (M) Bhd	909,047	143,305	15.76	896,770	114,670	12.78
Standard Chartered Bank (M) Bhd	86,128	22,416	26.02	122,164	13,881	11.36
United Overseas Bank (M) Bhd	886,927	54,513	6.15	779,883	11,889	1.52
TOTAL	**24,698,854**	**2,703,285**		**26,586,508**	**4,681,328**	

Source: Project Financing for Small and Medium Contracting Firms (Lin, 2008)

Highly Dependent on Debt Capital

The construction industry is highly dependent on banks to survive (Lin, 2007). Figure 1 shows the total amount of financing to the construction industry from 2001 to 2005. In 2005, the total amount of loans to the construction industry was RM 25.26 billion, compared with RM 23.29 billion and RM 21.71 billion in 2004 and 2003, respectively. The total loans to the construction sector decreased for the three years from 2001 to 2003, but this trend reversed toward the end of 2005.



Source: Project Financing for Small and Medium Contracting Firms (Lin, 2008)

Figure 1. Total Amount of Financing to Construction Industry (2001–2005) by 14 Commercial Banks

RESEARCH OBJECTIVE

The objective of this paper is to review the importance of financial management practices for construction firms in an attempt to consider the significance of financial management in the construction industry.

DESIGN / METHODOLOGY / APPROACH

Data were collected through case studies. Six large and medium-sized Bumiputera construction companies were selected as case studies. Three years of annual financial reports for the selected construction companies were examined. For a more meaningful relative performance evaluation, the companies' average ratios for three years were used as a comparison with the industry average. Seventeen financial ratios were selected as measurement performance tools. The ratios are based on data from 1996–2000 financial statements for more than 62,000 companies, as reported by Dun and Bradstreet Inc. and proposed by Peterson (2005).

FINANCIAL RATIO ANALYSIS

The table below shows the results of three years of average ratios for the six selected construction companies.

Table 3. A Summary of 17 Financial Ratios

SUMMARY OF FINANCIAL RATIO ANALYSIS									
No	**Ratios**	**Company A**	**Company B**	**Company C**	**Company D**	**Company E**	**Company F**	**Median**	**Range**
1	**CR**	1.12:1	1.05:1	0.97:1	1.35:1	1.07:1	1.34:1	1.5:1	3.1–1.2
2	**QR**	0.66:1	0.52:1	0.60:1	0.69:1	1.10:1	0.91:1	1.2:1	2.1–0.6
3	**CL/NW**	6.47:1	9.06:1	7.59:1	14.62:1	2.43:1	3.84:1	1.12:1	0.32–2.4
4	**DER**	6.68:1	9.41:1	8.19:1	37.53:1	2.53:1	3.84:1	1.3	0.5–2.7
5	**FA/NW**	0.66:1 or 66%	0.71:1 or 71%	1.65:1 or 165%	9.28:1 928%	0.35:1 35%	0.16:1 16 %	0.24:1 24%	0.08–0.64
6	**CA/TA**	0.899:1	0.93:1	0.77:1	0.71:1	0.90:1	0.96:1	–	0.70–0.80
7	**CP**	47 days	83 days	89 days	127 days	22 days	39 days	48 days	22–75 days
8	**AAAP**	63 days	94 days	89 days	146 days	38 days	94 days	45 days	–
9	**ARR**	42 %	49%	71.7%	96.3%	16.7%	35.5 %	29%	19%–55%
10	**WCT**	43.7:1	3.4:1	33:1	(0.02):1	26.9:1	22.9:1	12.1	23–6.1
11	**APRR**	14.1%	21.4%	24.8%	24.3%	8.74%	22.8%	7.9%	2.9%–13.0%
12	**GPM**	4.7%	10.6%	6.96%	11.98%	9.06%	7.52 %	17%	–
13	**GOR**	3.2%	8.97%	5.29%	17.85%	8.27%	9.26 %	Less than 10%	–
14	**ATPM**	0.78%	(0.14)%	1.17%	(5.56)%	0.24%	(0.48)%	2.2%	8.7%–0.6%
15	**ROA**	1.8%	(0.97)%	2.07%	(7.4)%	1.69 %	(1.28)%	6.5%	21.7%–2.0%
16	**ROE**	16.1%	(10.5)%	20.25%	(72.6)	4.5%	(2.45)%	16.7%	53%–5.4%
17	**DFAN**	85.6%	74.1%	87.2%	88.7%	85%	83.8%	–	60%–40%

ASSESSMENTS

Table 4 shows an assessment of the findings from the case study.

Table 4. Assessments of Ratios

No	Ratios	Assessments
1	CR	Worse than industry average. A company with a CR below 1.5:1 is considered undercapitalised (lack of capital) and may experience financial problems in the future.
2	QR	Worse than industry average but still within range, except for company B, which was slightly less than the minimum range of 0.6:1. A company with a QR below 1.00 to 1 is considered not liquid (lack of cash) and must increase its cash either through debt financing or converting its assets to cash.
3	CL/NW	Worse than industry average. Short-term creditors have more capital at risk, which is not in a good position. The higher ratio indicates intensive use of suppliers and sub-contractors.
4	DER	Worse than industry average. The high ratio indicates that the company is highly dependent on debt capital to perform its business. The company may not be able to service their debt, especially during economic downturns.
5	FA/NW	The fixed asset to net worth ratio is a measurement of the amount of owner equity in fixed assets, such as construction equipment, building and vehicles. A high number indicates a company with a large investment in fixed assets and a need to maintain a steady stream of work to pay for these fixed assets. Most companies have a large investment in fixed assets, and their FA/NW is much higher than the industry average (worse than industry average), except for company F, which maintains its FA/NW ratio below the industry average.
6	CA/TA	CA/TA is greater than the minimum suggested rate of 70% given to a commercial construction industry. An average of more than 70% of the company's assets is tied up in current assets and considered very liquid.
7	CP	CP is a measurement of the average time that it takes a company to collect its accounts receivable. A collection period of more than the industry average indicates that the company has poor collection policies.
8	AAAP	AAAP represents the average time that it takes the company to pay its bills and how extensively the company uses trade financing. If the AAAP is greater than its collection period, this indicates that the company is highly dependent on suppliers and sub-contractors to finance its construction work. The suggested rate for accounts payable is 45 days. A higher number indicates that the company is slow to pay its bills.

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Table 4 (*continued*)

No	Ratios	Assessments
9	AAR	AAR is a measurement of how efficiently the company uses its assets. Companies with an AAR above the upper end of the typical range, such as companies C and D, have performed too much work for their assets. However, companies with an AAR below the lower end of the range, such as company C, are underutilising their assets (not efficiently using their assets).
10	WCT	WCT is a measurement of how efficiently a company uses its working capital. A company with a WCT higher than the industry average, such as companies A, C, E and F, are considered undercapitalised (not efficient) and must increase the availability of their current assets. The negative WCT of company D indicates the negative working capital of the company (lack of working capital).
11	APRR	APRR is a measurement of how much the company uses its suppliers and sub-contractors as a source of funds. Companies with an APRR greater than the industry average of 7.9% are significantly funded by suppliers and sub-contractors (lack of capital).
12	GPM	Worse than industry average. A lower GPM suggests that the company has a higher cost of construction. The company must control its construction costs and increase its profits.
13	GOR	Within the suggested rate of less than 10% for a commercial construction company. All companies spent less than 10% of their revenue on general overhead.
14	ATPM	Less than the suggested industry average for a construction company of 2.2% indicates that the construction company runs its business at a loss or at a minimum profit margin. The company must work on its profitability, by either cutting costs or increasing profit and overhead markup.
15	ROA	Less than the industry average of 6.5% and below the minimum range is a strong indication that the company runs its business with a minimum profit margin or poor financial management. Improvement in the after-tax profit margin will help to increase this percentage.
16	ROE	ROE is the return the company's shareholders receive on their invested capital. Practically, ROE is directly related to the company's profitability. A negative ROE, such as those in companies B, D and F, indicates a negative (loss) profitability from operations. Improvement in the after-tax profit margin will help to increase this percentage.
17	DFAN	Greater than the target range of 60% to 40% indicates that the company has many new machines, which usually involves large loan payments.

CONCLUSION

The overall findings from the case study show that most of the Bumiputera construction companies have insufficient cash capital to finance their construction work, low profit margins from construction projects and are highly dependent on debt capital to finance their construction costs. The lack of monitoring systems for companies' cash flow and project costs were the main causes of failure.

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