

CHAPTER 2

2. LITERATURE REVIEWS

2.1 ALTMAN'S Z SCORE

Pomerleano, in his paper, examined the financial performance of corporations in Asia countries benchmarking against financials of corporations in other countries. He focused on the macroeconomic factors that lead to the financial crisis. He used Altman's Z score to determine the vulnerability of the financial performance of Asia countries. This paper borrowed the ideal of Pomerleano, but with the details scrutinising of the corporate finance using the modified Z score model⁴ (Z" score). Leong and Chan (2001) have studied the impacts of financial crisis on different sectors in Malaysia, complemented the Pomerleano (1998)'s study. For construction sector, only the firms in Main Board of KLSE were studied by Leong and Chan (2001).

Altman's Z score used in this paper is the modified model⁵ called Z" score (Altman, 2000), that applied to the private and non-manufacturing firms. The Z" score model is more suitable for evaluating the performance of construction sector, as Altman (2000) commented that it's suitable for "*industry where the type of financing of assets differs greatly among firms and important adjustments, like lease capitalisation, are not made.*" The Z" score model uses only four variables instead of five variables that are use in the Z score model. The excluded financial ratio in the Z" score model is the net sales to total assets ratio.

2.2 TOBIN'S Q

Tobin's Q was introduced in 1969 by James Tobin as a predictor for a company's future growth opportunities (Caton, Goh and Donaldson, 2001; Stephen and Joseph, 2000; Lee and Tompkins, 1999). Tobin's Q is the ratio

⁴ Adjustments to the Altman's Z Score model are required for privately held firms, non-manufacturing firms, and small firms.

⁵ A new model called the ZETA® model has been developed and due to the proprietary effort, Altman cannot fully disclose the parameters of the market.

of market value of a company's financial claims to the replacement value of its assets. Pomerleano, used Tobin's Q as *"indicative countries' growth and profitability prospects, shedding light on whether there was an environment conducive to capital expenditures created by market valuations"*, in his papers. It was used for the similar purpose in this paper.

Stephen and Joseph (2000) hypothesised that *"Low Q, high free cash flow firms should exhibit superior performance post-listing as they are forced to be more efficient with their use of cash flow"*. They also argued that firms having Q value greater than unity are firms with positive net present growth opportunities. Empirical tests showed that low Q firms are more likely to be overhang from credit-constraints. Some studies used Tobin's Q as an indicator to determine whether a company has been able to create value for shareholders with the assets under the management control, and measure its investment value from the investors' prospect. Claessens, Djankov and Klapper used Tobin Q as one of the factors to examine the likelihood of financial distress companies in entering bankruptcy.

2.3 ECONOMIC VALUE ADDED (EVA)

Fredrik (1998) argued that traditional accounting systems are insufficient and not meeting the efficiency of capital markets and owner. He suggested four major frameworks within Value Based Management (VBM) that reflect better value and profitability of a company. There are Economic Value Added (EVA), Cash Value Added (CVA), Cash Flow Return on Investment (CFROI), and Shareholder Value Analysis (SVA). EVA measures company's true profit or the added value that was achieved by a company. Furthermore, EVA is more related to the Net Present Value (NPV). Pomerleano, and Leong and Chan (2001) also used EVA in the evaluation of their paper.

2.4 OTHER FINANCIAL RATIOS

Others most commonly used financial ratios for determining the health of a corporation are profitability, gearing and liquidity. Hypothesis suggested that highly geared companies are more likely to be liquidity-constrained during recession (Benito and Vlieghe 2000, p. 90). They concluded in their study that

higher gearing firms would not necessarily to be more profitable than lower gearing firms as predicted. Palepu, Healy and Bernard (2000, p. 14-15) mentioned evidence indicates that level of profitability, volatility of profitability and firm's financial leverage are key constitution for firms' financial health. Furthermore, they pointed out that if a firm facing swift fall in losses; then, current liquidity would not be able to save the firm.

Pomerleano's findings suggested that liquidity problem caused difficulties to corporations in raising new funds, as they required to service a great portion of short-term repayments. Cash flow to debts ratio is the best single predictor for firm's failure (Beaver 1967) and it was used in this paper.

Previous studies have brought out various possible causes of financial distress. Teresa (1993) suggested that financial distress is due to the refusal of present or potential creditors in contributing to new financing or re-financing the current engagement. Edgardo and David pointed out that construction sector was bearing the brunt of the impact of 1997 financial crisis in East Asia Countries.

2.5 OVERVIEW OF CONSTRUCTION SECTOR

Prior to the crisis, construction sector in Malaysia was underwent an expanded average growth rate of 12.9% from 1990 to 1996. Malaysia government was aggressively pushing the privatisation projects as the privatisation reduced burden of government in country development and promoted better infrastructure (i.e. roads, highways, power transmission, telecommunication, rail transport and ports) for the country future growth. From 1994 to 1996, speculative demand had push up the growth of residential and commercial projects due to the increased in disposable income. Consequently, many larger projects were been included in the national budget to seek further growth in this sector.

Construction sector was severely hit during the 1997 economic crisis. This caused a massive slow down in the construction sector. However, the impact of the crisis on the construction sector was not an immediate effect. The

construction sector, still shown a moderate performance towards the end-1997. It, then, slowdown sharply in 1998 when the impact was fully realised. The sector output was contracted by 23% in 1998 (BNM 1999 p. 44). Similarly, the construction-related materials industries had declined sharply in the same year (BNM 1999, p. 580).

In construction sector, most of the projects have long construction period. Small-scale projects have one or two years of construction period and the construction period for large-scale projects may take five to ten years. Mostly, financing and budgeting of projects was done prior to the implementation of the projects. The pre-financing and budgeting will keep the in hand projects continue running for quite a period of time before companies face financial difficulties. Similarly, the budgeting from the government for new projects is done in yearly basis. Most of the pre-arranged budgeting with allocated funds was not cancelled during the crisis. Hence, reduction in future growth opportunities of construction firms was not immediate effect. This is deems to be the reason why the sector was experiencing the delay impact.

Some of the major projects have been postponed due to the crisis, such as Linear City, Bakun Hydroelectric Dam, Northern Airport in Kedah and the Hill Highway. Some projects have been cancelled. Most of the deferments do not involve government funding; there are privatised projects. Projects that were remained active during the crisis were hospitals, schools, water treatments, and road and highways projects.

Commercial buildings for office and retail were badly hit by the combination of the crisis and its oversupply, in 1998. Rental for office and retail outlets was reduced substantially with many of the commercial area recording huge number of vacant occupant. Many projects of this type were pending as developers were facing financial difficulties. The approval of new construction of office and commercial space was put on hold by local authorities to prevent future addition to property stock (Economic report 02/03). Heavier impact was experienced on less strategic commercial lot area or new developed commercial lot area with poorer infrastructure.

For residential, high-end housing was over supplied. In contrast, demand of low- and medium-cost housing was not hit that badly. Residential sector, particularly the lower range houses, with the support of funds from Malaysia government, had picked up significantly, after the crisis (Economic report 99/00, pp.73-75). Furthermore, relaxation of eligibility conditions for government housing loans, more withdrawal options provided by Employees' Provident Fund (EPF), and relatively low interest rates have effectively boosted the performance of residential sector (Economic report 00/01). Many attractive offers were given by developers to attract more buyers for low- and medium-cost housing such as low down payment or booking fee and free legal fee.

Similarly, the growth of industrial such as petrochemical projects and commercial factory projects were affected. Further development of the petrochemical projects was on hold. However, on going petrochemical projects were continued to perform toward the end-2000 before it showed the sign of impact. Other industrial projects such as commercial factories were slowdown significantly. Most of the manufacturing corporations did not seek for factory expansion, as their growth was not promising during the crisis.

Percentage growth of construction sector for 97, 98, and 99 are 10.6%, -23%, and -5.6%, respectively. The construction sector started to pick up during the 3rd and 4th quarter 1999 reporting growth of 0.9% and 2.7%, respectively (ARIC Indicators). Subsequently, the sector had shown gradual increase from 2000 to 2002 (3.8% growth in 2002) due to Malaysia government fiscal stimulus programme⁶ to rescue its economy. Total contribution of construction sector to Malaysia's GDP is relatively small (i.e. 4.4% in 1995, 4.8% in 1997, and 3.6% in 1999) compared to the developed countries of 7% to 8%. The total contribution of the sector was reduced during crisis.

⁶ Implementation of various projects such as continue development of Cyberjaya; power plant project in Yan, Kedah; expansion of port facilities (Tanjung Pelepas, West Port Klang and Bintulu Port); and highway projects (KL Traffic Disposal System, New North Klang Straits Bypass, and the ERL system).

The main streams of the construction sector, after crisis, are the on going projects i.e. Putrajaya and Cyberjaya; infrastructure (i.e. highways, ERL system, LRT system and maintenance of roads); and commercial (i.e. Hospitals, government servant quarters and schools) (Hendon 2001). However, the construction pace of the on going projects has been sluggish. In response to that, Bank Negara Malaysia (BNM) was boosting the construction sector by lower lending rate and adopted a relaxed interest rate regime by gradually reducing its intervention rate in the interbank money market in 1999 (New Straits Times, Aug 31, 1999). Besides the on going projects, more hospitals, schools and road maintenance projects were put on tender by government to boost the sector. It's deem that the construction sector was experiencing delay in realise it growth. Therefore, the effect of the initial growth was not obviously realised.

According to related literature, construction, real estate and securities have the most significant credit risk to commercial banks during 1997-98. Loans and advances by the banking system to construction sector were increased steadily from 93 to 95. It, then, soar substantially from 21% at the end of Aug 95 to 26.9% at the end of Aug 96 due to the Seventh Malaysia Plan (1996-2000) (Economic Report 96/97 & 97/98). The increasing loans in this sector have ended up with large number of NPLs during the crisis. Its net NPLs ratio was increased from 1997 to 1998 and declined in 1999. As at end-June 1999, NPLs of construction and real estate sectors were 22.1% and 21.5%, respectively (BNM 1999, p. 408). Leong and Chan (2001) found that the construction sector has the highest capital gearing of 32%, it increased during the crisis period and continued with a marginal increment after crisis. They concluded that the main cause of the crisis was the imprudent credit facilities given out by commercial banks that had created bubble, particularly, in construction sector.

Starting 1998, competitions on tender bidding process were increasingly competitive. Obviously, the number of participants per tender for the government projects was increased. The intensive competitions have caused the profitability of the government projects contracted substantially. Many

companies were willing to bid for projects with profit margin slightly above the projects' break even point; especially companies that were desperate for projects to keep their business running. The number of private tenders was even lesser. The costing of the projects was the main concern for the private tenders. More negotiation stages were involved in private projects bidding process. Therefore, the sector was deemed to have greater risk in view of the lower profitability, during the crisis. Government, in helping the bumiputra contractors, has increased the amount of contract limit for the lower class bumiputra contractors in the latest 2003 budget.

Regarding to the lower profitability, some construction companies have employed new technology to increase the efficiency of project implementation as cost cutting tool. Take, for instance, the Aluminium frame-casting wall used in Palm Spring Damansara Condominium project, capable of increase the construction speed and act as the supporting structure of building. Talam Corporation Berhad which faced serious financial difficulties was used the similar approach to increase efficiency and reduce cost.

In Malaysia, some construction companies are partly or wholly owned subsidiaries of the conglomerates and government agencies (Searle 1999). Therefore, the healthiness of a corporation in Malaysia also depends on the political connection that the corporation owned. Searle (1999 pp. 241-249) pointed out that some corporations have political connection and this will somehow affect the future or the intangible assets of the corporations. Also, see Horowitz and Heo (2001 pp. 91-108). For instance, Ho Hup has to be depends on its own in bidding outside projects; instead of, getting the project through its parent company UEM due to the drying of government favour projects. The impact of the crisis has caused Ho Hup to lag far behind the construction giant i.e. IJM and Gamuda (The Edge May 27, 2002). However, corporations with this type of goodwill will certainly have more valuable future growth opportunities compared to the solely private own entities.

2.6 STRUCTURE OF CONSTRUCTION SECTOR

In general, construction sector in Malaysia is divided into four categories that are infrastructure, commercial, industrial and residential. Infrastructure construction includes telecommunications, power transmissions and distribution, water management, railways, roads and highways. Commercial construction includes hospitals, libraries, schools, shopping complexes, and intelligent office buildings. Industrial construction consists of petrochemicals, high tech manufacturing and industrial estates. Residential construction includes public low-cost housings, medium-cost housing, estate, industrial and high-end housing (Hendon 2001).

Malaysian construction firms can be categorised into three main categories i.e. bumiputra companies, non-bumiputra companies and Malaysian-foreign JV companies. Bumiputra companies are having some privilege over the non-bumiputra companies. This type of companies has better goodwill with local government, which is the advantage in project bidding process. Malaysian-foreign JV companies are usually formed in project basis due to the lack of technological and highly technical knowledge of local companies. This type of companies was involved mainly in power station, telecommunication, and petrochemical projects which required expertise in technology and technical; where local companies are unable to handle by themselves.

2.7 FUNDING OF CONSTRUCTION SECTOR

Funding of construction sector can be categorised into three categories i.e. government funding, private funding and semi-government funding. Funding for most of the infrastructure and commercial projects is from Malaysia Federal Budget, which involved government funding. Projects that are under privatisation will not involve government funding directly. Funding of this type of projects is by the corporation management firm and revenue of the corporation that varies according to the contract entered into with government. It's categorised as semi-government funding. For instance, contract entered into by government and private corporations for concession of toll collection periods from construction of highways are the most apparent privatisation

projects. Funding for the Putrajaya was from capitalisation of Putrajaya Holdings at its initial stage. At the later stage, its funding was from the sales of properties and commercial land, and income from the offices leased to the government and its agencies. Different modes of privatisation projects that have been executed in Malaysia are sale of equity, sale of asset, build-operate-transfer, build-own-transfer, management contract, lease of asset and build-transfer (Hendon 2001).

Finally, private funding projects are those projects under the development of corporations' own property. Medium- to high-cost residential (i.e. bungalows, terrace-link houses and condominiums) and commercial (i.e. Office shop lots, retail outlets and hotels) are the largest private sector funding involved among all categories. Funding of this type is from the commercial banks lending that corporations obtained based on the value of the proposed projects and the corporations' financial background.

Projects with the government funding have lesser risks compared to the private funding projects. Residential projects such as housing, particularly that funded by the individual corporation has the highest risks. Most of the pending and deferments projects are of privatisation and private funding projects. In view of the funding, construction activities related to public sector projects are deemed to have a better performance compared to the solely private sector construction activities.

In residential sector, significant progress has been made to three special funds to augment the supply of affordable housing under the Seventh Malaysia Plan. Those are the RM600 Million Housing Fund for Hardcore Poor, the Fund to Accelerate the Construction of Low Cost Houses (FACLCH), and the Low Cost Housing Revolving Development Fund (LCHRDF). The RM600 Million Housing Fund for Hardcore Poor scheme is for low cost units in urban areas. It was derived from Malaysia government (i.e. RM300 million), financial institutions and corporations from the private sector. RM500 million was provided for FACLCH in 1994. LCHRDF as topped up to RM2 billion in 1996

from its initial amount of RM500 million in 1994 (Economic report 96/97, pp.94-99).

2.8 CORPORATE GOVERNANCE

In the context of corporate governance, Malaysia seems to need greater efforts in improving it. Malaysia banking sector did not have a prudent financial system as viewed by most of the foreign analysts and investors. Lax of borrowing to the construction sector has caused construction sector to be tightened by its financial obligations and it was poorly performed during the crisis. Study shows that credit growth of the construction sector was high prior to the crisis. Loan facilities given out to this sector were done in imprudent manner. Only, in December 1999, BNM introduced stricter regulations in giving out loans in this sector (Gang and Soon 2001). A more careful examination was done before loans were given out to this sector by commercial banks. Credit facilities will only be granted once the construction was started. Banks were encouraged to review the existing financing or withdrawn the credit facilities, if required, for the existing projects that were not viable.

Corporate governance issues such as non-transparency system that accumulated financial problems in banking and corporate sectors will depress the crisis further, though, it's not the crux of the crisis (IFCI; Masuyama, Vandenbrink and Chia 1999, pp. 16-17). Corporations that did not appraise their financial situation correctly and soft regulations imposed by the regulator caused investors to lose their confidence during crisis. Most investors diverted their funds from the construction sector as they realised that the sector was not financially strong as what they thought to be before the crisis. Other way of putting it, most investors have estimated wrongly the true value of corporations in this sector prior to the crisis. Related literature suggested that falsification of account, conflict of interest, and less professionalism is deemed to be more apparent on one-man or family-run companies.

Special legislation was enforced on Sept 1, 1998 by local government with an aim to solve the massive debts issues arising from the crisis. Assets management companies i.e. Danaharta, Danamodal and CDRC were given distinctive authorities in debts restructuring process; such as power of compulsory acquisition, power to alter shareholdings and boards, and power to repudiate contracts, transfer assets and liquidate companies (The Star 2 May 2003). Many construction companies have forced to restructure under the legislation. For examples, Abrar was under debts restructuring of Danaharta and Acta was under the debts restructuring of CDRC. That was not the preventive legislation for the crisis; it's, in fact, the crisis rescuing legislation.

In Malaysia, regulation of bankruptcy law is not comparatively strong to other countries. Therefore, bankruptcy is not the apparent resolution for corporation's financial distress. In fact, corporate restructuring has more likelihood for corporate financial distress as aforesaid. Related literature suggested that stricter bankruptcy law would threaten the management and boards to be more careful in engagement of risky projects. Therefore, stricter bankruptcy law will increase the accountability of corporations. To be precise, Malaysia's bankruptcy law is adequate indeed, what is lack is the enforcement and execution of the law. Malaysia government, in some sense, did not allowed bankruptcy of certain firms. Particularly, firms with greater stakes in the role of country economy and have significant social implications. Huge injection of EPF fund into Renong after it stuck in the financial distress, was a well-known example of this sort.

Even though, corporate governance would not prevented the construction sector to be hit by the financial crisis; it would, however, mitigated the impacts of the crisis on it. The sector would have been less vulnerable compared to what it was experienced. Besides, with better corporate governance, corporations are more transparent and have greater accountability in their business operations.