

FINANCIAL MODELLING WITH JUMP PROCESSES

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ABSTRACT

This paper models the relation between a firm's market value and accounting data concerning operating and financial activities. Book value equals market value for financial activities, but they can differ for operating activities. Market value is assumed to equal the net present value of expected future dividends, and is shown, under *clean surplus accounting*, to also equal book value plus the net present value of expected future *abnormal earnings* (which equals accounting earnings minus an interest charge on opening book value). A linear model specifies the dynamics of an information set that includes book value and abnormal earnings for operating activities. Model parameters represent *persistence* of abnormal earnings, *growth*, and *accounting conservatism*. The model is sufficiently simple to permit derivation of closed form expressions relating market value to accounting data and other information.

INTRODUCTION

1.1 Background of the Study

Financial Management is a discipline dealing with the financial decisions corporations make, and the tools and analysis used to make the decisions. The discipline as a whole may be divided between long-term and short-term decisions and techniques. Both share the same goal of enhancing a firm's value by ensuring that return on capital exceeds cost of capital, without taking excessive financial risks (Pandey, 2010). According to (Gitman, 2011) financial management refers to the concepts of time, money and risk and how they are interrelated. At the individual level, financial management involves tailoring expenses according to the financial resources of the individual while from the organizational perspective the process of financial management is associated with financial planning and financial control. Modern approach of financial management basically provides a conceptual and analytical framework for financial decision making. It emphasizes on effective use of funds. According to this approach financial management can be broken

down into three different decisions: Investment decisions, Financing decisions and Dividend decisions (Brealey & Myers, 2007). Investment decisions involve investment in non-current assets known as capital budgeting as well as investment in current assets known as working capital management. Financing decisions relate to the raising of finance from various resources which will depend upon decision on type of source, period of financing, cost of financing and the returns thereby. Dividend decisions involve decisions on the distribution of profits. This requires decisions to be made on how much to distribute to the shareholders and how much should be retained (Brealey & Myers, 2007). Sound financial management practices help to improve the profitability of an organization and ensure that it has a healthy statement of financial position.

1.1 Financial management

Practices According to (Moore and Reichert, 1989), financial management practices are defined as the practices performed by the accounting officer, the chief financial officer and other managers in the areas of budgeting,

supply chain management, asset management and control. The most common financial management practices used are Accounting Information Systems (AIS), Financial Reporting and Analysis (FRA), Working Capital Management (WCM), Fixed Asset Management (FAM) and Capital Structure Management (CSM). All these practices are crucial for an efficient financial management in organizations. Accounting Information System indicate an integrated framework within an entity (such as a business firm) that employs physical resources (i.e., materials, supplies, personnel, equipment, funds) to transform economic data into financial information for; conducting the firm's operations and activities, and providing information concerning the entity to a variety of interested users. Indeed, the combination or interaction between human, technology and techniques would permit an organization to administer its knowledge effectively (Bhatt, 2001; Thomas and Kleiner, 1995). Working capital is a part of a firm's current assets. Depending on the source, working capital can be defined in different ways. Working capital is defined as a company's total investment in current assets or assets that a company expects to be converted into cash within a year or less (Keown; Martin; Petty; and Scott, 2005). The investment in working capital involves carrying costs and shortage costs, so the firms have to find the tradeoff between them. Capital structure is defined as the relative amount of debt and equity used to finance a firm. It's the relative amount of permanent short term debt, long term debt, preferred stock and common equity used to finance a firm. In contrast, financial structure refers to the amount of total current liabilities, long term debt, preferred stock and common equity used to finance the firm. Thus, capital structure is part of financial

structure, representing the permanent sources of a firm's financing (Boateng, 2004)

Accounting information systems assist in the analysis of accounting information provided by the financial statements. Romney (2009) purport that the biggest advantage of computer-based accounting information systems is that they automate and streamline reporting. As pertains to Financial Reporting Analysis (FRA), recording and organizing the accounting information systems will not meet objectives unless reports from systems are analyzed and used for making managerial decisions (Gitman, 2011). Working Capital Management (WCM) refers to decisions relating to working capital and short term financing (Garrison, 1999). These involve managing the relationship between a firm's short-term assets and short-term liabilities. Fixed (non-current) assets management (FAM) is an accounting process that seeks to track non-current assets for the purposes of financial accounting, preventive maintenance and theft deterrence (Garrison, 1999). Capital Structure Management (CSM) according to (Romney, 2009) means overseeing the capital structure of an organization. A company's capital structure refers to the combination of its various sources of funding. Most companies are funded by a mix of debt and equity

Financial Performance

According to McMahan (1995) financial performance can be defined as a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. Further this term is used as a general measure of a firm's overall financial health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. Financial performance of

companies can be measured by use of accounting information or stock market values in a financial management practices context. When applying stock market values as a measure of performance, one is interested in analyzing the change in market value. Firm performance is measured over time by using the average stock market change per year. This value is usually obtained by calculating the yearly change in stock price. When accounting information is used, accounting ratios are employed. Among the common accounting ratios used to measure profitability are: return on assets (ROA) and return on capital employed (ROCE). Return on assets is an indicator of how profitable a company is relative to its total assets. It gives an idea as to how efficient management is at using its assets to generate earnings. It is calculated by dividing a company's annual earnings by its total assets and it is shown as a percentage. Because of the limitations cited in using stock market prices, this study will employ Return on Assets (ROA) to measure the operating efficiency of the shipping companies in Kenya (Brealey & Myers, 2007)

Effect of Financial Management practices on Performance When the relationship between financial management practices and financial performance is analyzed, it should be noted that there are other factors which account for potential influences on the relationship. Although these other variables are not directly related to the relationship between financial management practices and performance, it is important to take them into account in order to isolate their effect on performance. These variables include firm size, degree of risk, capital intensity, and leverage and industry factors such as growth, firm advertising, market share, research and development. This study will hold these variables as control variables

(Moore & Reichert, 1989). The ultimate goal of financial management is to maximize the financial wealth of the business owner(s) (McMahon, 1995). This general goal can be viewed in terms of more specific objectives: profitability and liquidity. Profitability management is concerned with maintaining or increasing a business's earnings through attention to cost control, pricing policy, sales volume, inventory management and capital expenditures. Liquidity management ensures that the business's obligations (wages, bills, loan repayments, tax payments etc) are paid. McMahon (1995) also viewed growth as another objective of financial management in relation to liquidity, growth and profitability. Financial management also aims to maximize the share price in the securities market and enhancing long-term value of the firm.

Shipping Industry in Kenya The global economic changes over the last few years have presented the shipping industry with a paradigm shift in many facets of its conventional operations. Those liners that fail to embrace these new paradigms will be engulfed by their ineffective and inefficient traditional methods. Peder and Farrag (2010) in their global focus on Business, Sustainability and Responsibility, (BSR), predict that in the next five to seven years, market, stakeholder, customer, and regulatory pressures related to sustainability will drive significant changes in the way international shipping lines operate and do business. These will demand a bigger focus on routing to the emerging economies, rise in the costs of energy, cutting carbon emissions and adapting to climate change, maritime piracy and related costs, as well as the stakeholders increasing demand for environmental sustainability and corporate social responsibility. Financial management practices directly contribute to the organizational performance of any

company. Bhattacharya, (2006) states that for a business firm to be able to sustain its business operations and meet its goals and objectives it must manage its financial practices effectively and prudently. The shipping industry in Kenya is not an exception to this regard. The shipping industry is one of the major driving forces behind the Kenyan economy, providing direct and indirect employment. Its liberalization has also enticed further presence of foreign owned liners, many stretching and redirecting their routes to more lucrative destinations. The bearish trend of the Nairobi Securities Exchange has meant that the economy is now riding on the back of private investments, and so the industry is critical to the economy since most of the liners and related organizations are privately owned. The Kenyan shipping industry comprises of shipping liners which function as the main global carriers such as Maersk Liner, CGM CMA, among others (see full list in appendix 2). Other players include the agencies that act as a contact between shipper and liner, and clearing and forwarding agents, who assist in clearing cargo and aiding in further logistical delivery. The industry is regulated by the Kenya Maritime Authority (KMA) and the Kenya Ports Authority (KPA), whilst other major stakeholders include the Kenya Ships Agents Association, the Kenya Revenue Authority (KRA), the Kenya Shippers Council (KSC), and the Kenya International Freight and Warehousing Association (KIFWA). It is estimated that fifty ships of various types are in the major shipping lanes off the Kenyan coast at any given time. These can be characterized as follows: Oil tankers, bulk carriers, general cargo, container ships, passenger ships, tank barges, fishing trawlers, offshore supply, amongst others (UNCTAD, 2011). The Merchant Shipping Act of 2009 is an act of parliament that makes provision for the registration and licensing of

Kenyan ships, to regulate proprietary interests in ships, the training and the terms of engagement of masters and seafarers and matters ancillary thereto (Kenya Shipping Act, 2009). Section 317 of the Act denotes that the KMA issues licenses in respect to registration of Shipping Lines and Shipping Agents. These are subsequently registered with the KPA.

Residual Equity Theory

In the residual equity theory, changes in asset valuation, income and in retained earnings and changes in interest of other equity holders are all reflected in the residual equity of the common stockholders. The specific equities include the claims of creditors and the equities of preferred stockholders. The balance sheet equation becomes as follows: 'Assets minus specific equities are equal to Residual equity'. The equity of common stockholders in the balance sheet should be presented separately from the equities of preferred stockholders and other specific equity holders. According to Hendrickson (1982) the residual equity point of view is a concept somewhere between the proprietary theory and the entity theory. The objective of the residual equity approach is to provide better financial reporting as a consequence of good financial management practices. In a going concern situation, the current value of common stock is dependent primarily upon the expectation of future dividends. Future financial status is dependent upon expectations of total receipts less specific contractual obligations, payments to specific equity holders and requirements for reinvestment. Since financial statements are not generally prepared on the basis of possible liquidation, the information provided regarding the residual equity should be useful in predicting possible future financial status to common stockholders. In the balance sheet

format this is stated as follows: 'Assets minus liabilities are equal to residual equity'. The assets are assumed to be owned by the proprietor and the liabilities are the proprietor's obligations. Revenues are increases in proprietorship and expenses are decreases. Thus the net income accrues directly to the owners, that is, it represents an 11 increase in the wealth of the proprietors. The proprietorship is considered to be the net value of the business to the owners. It is a wealth concept (Hendrickson, 1982).

The Contingency Theory According to Pike (1986) resource-allocation efficiency is not merely a matter of adopting sophisticated, theoretically superior investment techniques and procedures but consideration must also be given to the fit between the corporate context and the design and operation of the capital budgeting system. Pike (1986) focuses on three aspects of the corporate context which are assumed to be associated with the design and operation of a firm's capital budgeting system. The first aspect is a firm's organizational characteristics. Decentralization and a more administratively oriented control strategy involving a higher degree of standardization are characteristics of large companies. Smaller, less complex organizations tend to adopt interpersonal, less sophisticated control systems. Haka, Gordon & Pinches (1985) have an opposite opinion and argue that firms will experience more benefits from using sophisticated capital budgeting techniques. They base their argument on Schall&Sundem (1980) study which shows that the use of sophisticated capital budgeting techniques declines with an increase in environmental uncertainty

RESEARCH METHODOLOGY

This study adopted a survey research design. A census survey of all the shipping companies in Kenya was undertaken. Such cross-sectional survey research is descriptive in nature and as defined by Glass & Hopkins (1984), descriptive research design involves gathering data that describes events and then organizes, tabulates, depicts, and describes the data collection and often uses visual aids such as graphs and charts to help the reader in understanding data distribution. The study sought to establish the relationship between financial management practices and performance of shipping companies in Kenya between the periods 2009 – 2012

The study used both primary and secondary data. Primary data was collected using a semi-structured questionnaire. The questionnaire was sub-divided into two sections. Section A for demographic information and section B for financial management practices adopted by the shipping companies. The questionnaire used both open and closed ended questions to obtain the information required. A five-point Likert scale was used in the design of the financial management practice questions. A "drop-and-pick later" method was used to administer the questionnaire to each of the shipping companies. The secondary data was obtained from the published financial statements of the shipping companies.

The data collected was edited for accuracy, consistency and completeness and arranged to enable coding and tabulation before final analysis. The data was then be analyzed to generate descriptive statistics such as percentages, means and standard deviations. The data was presented using tables, charts and cross tabulations. The following regression model is used to compute the relationship

between financial management practices and financial performance of shipping companies

Conclusion

It can therefore be concluded that the shipping companies were found to have put in place robust financial management practices in the form of financial report analysis, non – current assets management, capital structure management and working capital management practices. Further, it was found that financial management practices positively impacted on a shipping company's financial performance and could be presumed to be an integral 34 management tool for shipping companies. They therefore should be enhanced to help improve shipping company's financial performance. It can also be concluded that not all the financial management practices that are employed would give raise to the financial performance in all the industries regardless the nature of the business activity.

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