The Impact of Capital Structure on Firm Performance-Evidence from Large Companies in Hong Kong Stock Exchange

Babalola Emmanuel Olusola, Hu Mengze, Muruako Emmanuel Chimezie, Agulefo Prosper Chinedum

Shijiazhuang Tiedao University, Shijiazhuang, China

Email: babalolaimmanuel@163.com

Abstract

The purpose of this study is to examine the impact of capital structure on a firm's performance in Hong Kong, which has been an unsolved problem in the field of financial management. Eventually, for both capital structure and performance, a panel data model has been adopted and the empirical model used Return on Assets (ROA) as a proxy for performance, while total debt (TDR) was proxied for capital structure. The research included 202 cross-sections and 1010 observations for the period of 2014 to 2018. However, we have offered a systematic discussion on how different aspects and types of capital structure impacts performance. Also, a case study had been done on Capital Structure and Performance of Hong Kong Firms gave the close linkage between the performance of the firms and the stability of the financial structure, and it is important to understand the vulnerability of the companies. Specifically, these would enable managers to identify determinants and importance of optimal capital structure Nevertheless, further research was carried out by substituting (LTDR) for (TDR). The result showed a small effect in the negative direction. Therefore, the results of the impact of Capital structure on performance proved to be inconclusive. However, taking into consideration that Hong Kong has a different economic system, and the economy has many characteristics that vary from other countries in aspects such as, consumer consumption, spending behavior, and saving habits which serve as influence to firms and individuals. On this basis, concepts such as cultural, political, and institutional differences should be taken into consideration when assessing the impact of capital structure on firm's performance.

Keywords

Equity Structure, Debt Structure, Capital Structure, Financial Performance

1. Introduction

The combination of debt and equity leveraged by firms' operations is indefinitely taken as its capital structure. Therefore, the debt which includes both short-term and long-term stems is from issuing of bonds and working capital, while equity justifies or accounts for stocks and retained earnings. Thus, assessing the impact of capital structure on firms' performance is what the study will accomplish. Capital structure can be said to include a firm's ratio of debt to equity as it depicts how the firm operation of a business is financed through its debt and equity instruments. After many years, researchers have been carrying out theoretical and empirical studies on capital structure, but it drew attention to the financial economist Modigliani and Miller's (1958) model "irrelevance theory of capital structure". Nevertheless, after Modigliani and Miller's model suggestions, many studies were focused on finding the optimal capital structure. Even though their theory is based on some unrealistic assumptions such as the assumption of perfect capital markets, this theory provides us a source to perform research on capital structure. Until now, four major theories of capital structure have emerged, for instance, the pecking order theory, trade-off theory, market timing theory, and agency costs theory. Studies carried out on capital structure after 1958, when Modigliani and Miller postulated that capital structure has no impact on the firm's worth or value, suppose that the capital market is in perfect conditions. Therefore, supposing the ratio of debt and equity from the company is changed, it would not affect the firm's worth. This theory has been criticized by many researchers because, in the real-world view, there is no one perfect capital market. Modigliani and Miller modified the theory in 1963, putting into consideration taxes and a claim that in the market imperfections the interest payments are tax-deductible, then the worth of firms will increase with the level of their debt. However, non-financial performance cannot be simply measured as financial performance, even though non-financial performance cannot be easily measured, the non-financial performance also reflects the market-based information. i.e., prices of shares affect non-financial information. Therefore, productivity, innovations, and market standing can be identified as non-financial measures. Firms' performance is impacted by many factors, liquidity, asset growth, the concentration of share growth, the Organization's size, and capital structure are some of the factors among them. Modigliani and Miller (1958) proscribed that company's capital structure has no impact on an organizations' value. Since organizations' values reflect the performance of the organization, theory indicates capital structure has no impact on firms' performance as well.

Research Motivations and the Scope

Despite that series of research has been carried out on the relationship between capital structure and firm performance, contradictory findings are observed. Therefore, this study assesses the impact of capital structure on firm perfor-

mance based on the Hong Kong Stock Exchange (HKES) listed companies. Also, identify determinants and importance of optimal capital structure.

There are a few thousands of listed companies in Hong Kong, and this study was conducted among a sample size of 202 largest listed companies with data analysis over (5) five years period. The data was gathered to measure the impact of capital structure on a firm's performance in this study, and the 5 years sample from 2014-2018 may be a short period to be a good representative of a complete business cycle. Furthermore, the industrial sector suffered damage during the Hong Kong's political crisis, which swept over its stocks market has seen its gains for the year wiped out amid escalating conflicts between police and protesters. This event might impact the analysis resulting in variations with expectations of the theory. Besides, only publicly listed companies were selected in this study. Nevertheless, numerous firms engage in international diversification but are not listed on the Hong Kong stock exchange market. Therefore, the results might be some worth bias towards the developed and well-established firms. This is not a good representative of the population of the companies.

2. Related Literatures

2.1. Empirical Review

In other to study capital structure, it should be made known that each type of capital has its benefits and bottle-necks, and a significant part of wise corporate stewardship and management involves attempting to find the perfect capital structure regarding risks or reward payoff for shareholders. Several, relevant works of literature on how capital structure impacts firm performance have been reviewed. For analysis, there are many variables or elements in a capital structure choice and structure purposes of debt such as the long-term and short-term debt maturity mixture which will impact a firm's performance. Thus, examining the impact of capital structure variables on firm performance will provide evidence for a corporation's performance as a result of the impact of capital structure. Zeitun and Tian (2007) investigated the effect which capital structure has had on corporate performance using a panel data sample representation of 167 Jordanian companies during 1989-2003. Their results showed that a firm's capital structure had a significantly negative impact on the firm's performance measures, in both the accounting and market's measures. They also found that the short-term debt to total assets (STDTA) level has a significantly positive effect on the market performance measure (Tobin's Q). The Gulf Crisis 1990-1991 was found to have a positive impact on Jordanian corporate performance while the outbreak of Intifadah in the West Bank and Gaza in September 2000 had a negative impact on corporate performance.

Studies in the past regarding the impact of capital structure on a firm's performance have been broadly applied to various sectors of the economy with varying research results. Empirical studies have identified different viewpoints of the researchers on capital structure and firm performance. Previous researchers

investigated and observed a significant positive relationship between capital structure and a firm's performance.

Several studies have found that capital structure has a positive impact on firm performance in financially or economically developed countries. However, in developing countries, evidence has shown that the relationship between leverage and performance is significantly negative. Furthermore, both positive and negative effects of capital structure on business performance were identified. Arindam Bandyopadhyay and Nandita Malini Barua (2016) empirically investigate the linkage of corporate sector performance with the capital structure and macroeconomic environment. Using a balanced panel data of 1594 Indian corporate firms over 14 years (1998 to 2011), they found empirical evidence to support the hypotheses relating to the relevance of asymmetric information, agency cost, trade off theory, signaling and liquidity aspects in determining firm's capital structure decisions in emerging market economy. It is found that macro economic cycle significantly influences corporate financing decisions and hence performance.

Business size can also play an essential role in determining the relationship between leverage and firm performance, regardless of the country's degree of development. Ibhagui and Olokoyo (2018) examined the empirical links between leverage and firm performance by means of a new threshold variable, firm size. They ask whether there exists an optimal firm size for which leverage is not negatively related to firm performance. Accordingly, with a panel data of 101 listed firms in Nigeria between 2003 and 2007, they explore whether the ultimate effect of leverage on firm performance is contingent on firm size; that is, whether the type of impact that leverage has on the performance of a firm is dependent on the size of the firm. Their results show that the negative effect of leverage on firm performance is most eminent and significant for small-sized firms and that the evidence of a negative effect diminishes as a firm grows, eventually vanishing when firm size exceeds its estimated threshold level. They find that this result continues to hold, irrespective of the debt ratios utilized. Their results show that the effect of leverage on Tobin's Q is positive for Nigeria's listed firms. However, in their new finding, it is evident that the strength of the positive relationship depends on the size of the firm and is mostly higher for small-sized firms. When the firm was significantly large, however, the impact tended to be favorable. Furthermore, Jaisinghani and Kanjilal (2017) discovered that, for firms that are smaller that the cut-off value of size, high level of investments in marketing is associated with improved firm performance. However, for the firms that are larger than the cut-off value of size, high level of investment in marketing is associated with reduced firm performance.

Similarly, Paolo Saona and Pablo San Martín (2018) provided an analysis of the impact of firm-level variables as well as country-level institutional factors on firm value in the Latin American region. Their findings indicate that ownership concentration, capital structure, and dividend policy are significant drivers of

the market value of the firm. The results from determinants at the country-level show that legal enforcement and regulatory systems positively impact the market value of the firm, whilst the findings show unexpected results concerning the development of the financial system.

Krishnan and Charles Moyer (1997), in their research look at the corporate performance and capital structure of large enterprises from four emerging market economies of Asia, they studied 81 corporations from Hong Kong, Malaysia, Singapore and Korea and find that both financial performance and capital structure are influenced by the country of origin. They find that Hong Kong corporations have significantly higher returns on equity and invested capital than corporations from the other countries, possibly reflecting the concentrated conglomerate business structure typical of Hong Kong. The performance differences among firms from other countries are not statistically significant (Krishnan & Charles Moyer, 1997). Firms from Korea have significantly higher leverage than firms from the other countries. Leverage itself does not seem to affect corporate performance. The evidence lends only limited support to the extant capital structure theories in these emerging market economies. Besides the research reveals that companies in South Korea have a much higher capital structure than foreign-owned companies. The analysis of the findings suggested that the capital structure does not influence a company's financial performance. The incompleteness of information is concerned with the superior amount of information internal environments have compared to external environments (Harris & Raviv, 1991). In the long run, corporate control is related to takeover activities, as equity in form of common shares involves xvoting rights contrary to borrowed capital (Harris & Raviv, 1991).

2.2. Research Gap

The unavailability of a definite formula for assessing the debt-equity ratio or obligations informs of liabilities and the conflicting conclusions in the influence of capital structure on a firm's performance instigate us to carry out the study about the connection between capital structure and firm's financial performance, focusing on Hong Kong only. We chose companies from HK (Hong Kong) as our sample because its large industrial economy ranks third in the world behind New York and London, and the ranked second among 42 countries in the Asia-Pacific region, and its overall score is well above the regional world averages. Therefore, we comprehend that contradictory conclusion have stemmed from this research problem even though a lower number of researches have been done within the Hong Kong context. Eventually, as a developing country, the findings of foreign studies may not necessarily apply to Hong Kong's perspective. Thus, given the contradictory nature of research as to the impact of capital structure on firm performance both internationally and in Hong Kong, we are carrying out this study to show the impact of capital structure on firm perfor-

mance based on Hong Kong companies.

2.3. Theoretical Framework

The majority of theorists', researchers, and scholars have performed their researches on capital structure and firms' performance. Therefore, the Major theories we observed can be identified as follows.

2.3.1. Modigliani and Miller Theory (M & M)

The Prize-winning economists Modigliani and Miller's theory pioneered the development of modern financial theory in the context of financial structure. The capital structure theory began with the study of Modigliani and Miller in 1958. As postulated by Modigliani and Miller, the decision to choose between equity and debt is not related to the worth or value of an enterprise. They supposed that an optimal capital structure maintains balances between risks and profits and thereby maximizing the company's share price.

To begin with, the study of Modigliani and Miller's theory in 1958, assumed without considering the effect of corporate income tax, which optimal capital structure for a business does not exist. Therefore, in a continuous study in 1963, after putting into account the impact of corporate tax (the product of tax rate and the value of debt), Modigliani and Miller revealed that the value of a company with debt is higher than the value of the one without debt. Thus, Modigliani and Miller's theory propose that increasing the use of debt will increase the worth or value of firms. Eventually, concerning the optimal capital structure theory and Modigliani and Miller's theory and we can deduce how the use of capital and its choice would impact the financial performance of businesses and business performance.

2.3.2. The Pecking Order Model

The pecking order model was popularized by Stewart C. Myers and Nicholas S. Majluf (1984), where they argued that the cost of financing increases with asymmetric information. The asymmetric information model presumes that at least one party to a transaction has useful information, whereas the other party does not. It is based on the notion that financing comes from three sources, internal funds, debt, and new equity. Thus, the form of debt a firm adopts can serve as a signal of its need for external finance. Stewart C. Myers and Nicholas S. Majluf (1984), considers that a firm that must issue common stock to raise cash to undertake a valuable investment opportunity. Management is assumed to know more about the firm's value than potential investors. Investors interpret the firm's actions rationally. Moreover, when firms borrow money, the cost of financial distress needs to be put into consideration. Furthermore, Stewart C. Myers and Nicholas S. Majluf noticed that costs of adjustments in capital structure hinder firms from achieving their optimal ratio since unexpected incidents can lead to deviations from the optimum.

Now let's take a look at the capital structure decision from a certain angle.

Stewart C. Myers and Nicholas S. Majluf (1984) pecking order theory. Myers and Majluf looked at a firm with existing assets and growth potential that necessitated additional financing. They believed in ideal financial markets, except that investors have no idea what the true value of current assets or new opportunities is. As a result, investors are unable to accurately value the securities issued to fund the new investment. Assume the company declares a common stock offering. If it shows a growth potential with a positive net present value, this is good news for investors. If managers assume their existing assets are overvalued by investors and plan to issue overvalued stock, this is bad news. (Issuing stock at low price shifts value away from current shareholders and toward new investors.) The conversion is reversed if the new shares are overvalued). Stewart C. Myers and Nicholas S. Majluf (1984) assumed that managers behave in the best interests of current shareholders, refusing to issue undervalued shares until the net present value of the growth opportunity more than offsets the transition from "old" to "new" stockholders. As a result, debt investors are less vulnerable to valuation errors. The announcement of a debt offering could have a lower negative effect on stock prices than an equity offering. The stock price effect on investment-grade problems, where default risk is very low, should be negligible. This prediction is supported by Eckbo (2007) and Shyam-Sunder Lakshmi (1991). Issuing debt reduces the corporate managers' knowledge benefit. Managers who think their companies' shares are undervalued would leap at the opportunity to issue debt rather than equity. Managers who optimize market value will avoid external equity funding if they have better knowledge than outside investors and the investors are fair, according to Myers and Majluf (1984). The pecking order theory explains why debt accounts for the majority of external financing. Also, it describes why more profitable firms borrow less: not because their target leverage level is low as they do not even have one in the pecking order, but because profitable firms have more internal financing accessible. Firms that are less profitable need external funding and, as a result, accumulate debt.

2.3.3. What Is the Pecking Order's Problem?

The pecking order hypothesis has the clear conclusion that highly profitable enterprises with large earnings are likely to employ less loan capital than less profitable firms. What, on the other hand, did the executives care about? If managers were trying to maximize profits, the tradeoff principle would work perfectly. Maximize the capital of shareholders. On the other hand, the pecking order requires that managers behave in the best interests of existing shareholders, maximizing the value of existing shares. Managers should be concerned whether a new stock issue is overvalued or undervalued, according to Myers and Majluf (1984). There is no clear consideration of management incentives, as in Ross's (1977) signaling equilibrium, in which the nature and conditions of the manager's compensation package guide the decision between debt and equity. The firm's funding decision then exposes the managers' know-

ledge of the firm's intrinsic value. Dybvig and Zender (1991) show that alternative models in which managers' compensation plans are fine-tuned to ensure optimal capital expenditure decisions will produce the pecking order's predictions.

The manager has no way of knowing whether he or she would consider the future stock price to be excessively high or excessively low today. As a result, the issuance of this deferred equity provides no information; it is as secure as the company's regular debt. The pecking order theory does demonstrate how disparities in knowledge can impact financing. It functions better in some situations and circumstances than in others, as in all capital structure theories.

2.4. Introduction to Company in Hong Kong

Following the Hong Kong classification of the company, it can be incorporated by registration with the company's registry under the company's ordinance. Although there are different kinds of companies, more than 99% of investors set up their business by forming a Private Limited Company (shown as a private company in the following diagram) rather than by the other forms. There may only be one or two thousand public companies, but there are more than 500,000 private limited companies in Hong Kong.

2.4.1. The Equity Structure

The main equity or exchange structure in Hong Kong is the stock exchange market of Hong Kong (SEHK), which is a wholly-owned subsidiary of Hong Kong Exchanges and Clearing Limited (HKEX). The HKEX operates a security market and a derivatives market in Hong Kong and the clearing houses for those markets and was listed in Hong Kong in 2000. The security market consists of the:

- Mainboard (https://www.hkex.com.hk/eng/index.htm). Matured or leading companies are listed on the mainboard.
- Growth enterprise market (GEM)
  (https://www.hkgem.com/root/e_default.asp). GEM is designed to contain small capital companies hoping to gain access to the capital markets and is positioned as a stepping stone to the mainboard for smaller issuers.

Hong Kong's equity market in past years has raised its first-hand funds from initial public offerings (IPOs), in some of those years growing more than London and New York combined.

There were a massive number of listings in the market before the financial crisis of state-owned Chinese banks to be precise. These birth a solid drive to the development of Hong Kong as a key financial Centre.

Another crucial improvement was in the year 2007, where there occurred introduction of the local market to international listed companies. Thus, exceeding the domestically accepted territories of Hong Kong, Bermuda, and the Cayman Islands (since the early 1990s) People's Republic of China. This act of globaliza-

tion had drastic slow progress as a result of the financial crisis but starting from 2009, there was rapid development with some prominence placed on luxurious goods companies and natural resources.

In 2009, it occurred that the public listing of the Italian fashion company (formed in Luxembourg), the aluminum company (established in Jersey) among several others got to be listed in Hong Kong. Companies such as Coach and Vale and several other companies have been secondarily listed utilizing guide and introduction without necessarily raising new cash.

1) *The Policy Environment*

One of the major reasons for the high profile of Hong Kong as a capital market has not in any trivial way included regulatory arbitrage. Although, the characteristic of Hong Kong's regulatory regime can be attributed to a degree of regulatory dogmatism, driven basically by a motive to protect sizeable retail investor involvement in the market. This has led to the territory being less competitive in terms of attracting certain types of initial public offering (IPO). There was recently a deliberation in Hong Kong as to whether the approach: For example, of companies, the major controlling shareholders aspire to have reasonable voting rights or other types of less usual controls or governance structures—Alibaba being the most prominent recent example should be changed. Nevertheless, the improvement of the market relative to listings of international companies has been propelled by the liquidity that is in the region and the importance of China to many of these companies. Therefore, for the fashion firms for example; there has been the factor of a raised profile in what is a vastly important region.

2) *Recent Performance*

Hong Kong in the year 2012, ranked fourth worldwide in terms of new listing incomes, with sixty-two (62) initial public offers (IPOs). There was a rise in volume in 2013 with 102 IPOs closed producing approximately HK$169 billion. This continued into 2014 with approximately HK$228 billion raised by 122 IPOs. Thus, putting Hong Kong in second place behind the New York Stock Exchange. The majority of the successful listings in the current environment have been of mid-market companies, although recently some major listings have taken place such as Dalian Wanda at the 2014-year end. Despite the slackening growth rate of China's economy, there has been considerable recent diffidence in the Shanghai market which is beginning to impact the performance of the Hong Kong stock market. As a plus to providing another means into the Shanghai stock market for international or foreign investors including the retail investors, this has opened up an official route for investment by mainland investors into the Hong Kong market. This is a relatively significant improvement.

2.4.2. Debt Structure

The debt capital structure of Hong Kong has undergone large and fast growth in recent years. The wide range of product offerings, coupled with open access for

issuers and investors, both foreign and domestic, and the growing relevance of offshore RMB bond issuances in Hong Kong, made Hong Kong's debt capital market structure one of the most liquid and active international markets in the location. With the simplification of monetary policy in the United States, Europe, and Japan, the market has witnessed an increasing number of companies that have entered the debt capital market, including the people's republic of China-based companies taking advantage of the lower funding costs relative to the onshore market. Moreover, there are a significant number of companies that have traditionally relied on loan financing and have become more willing to tap the debt capital market as an alternative source of funding. Historically, the market has been dominated by US dollar issues but in addition to US and Hong Kong dollar issues, increasingly bonds denominated in other currencies are being issued, including the Euro, Singapore dollar, and RMB. Concerning the Hong Kong stock exchange, for the year ended 31 December 2014, there were 281 newly listed debt securities on the Hong Kong stock exchange and the amount earned was almost HK$961 billion. There was a total of 640 debt securities as of the 2014-year end, listed on the Hong Kong stock exchange. The majority of the debt securities on the Hong Kong stock exchange are aimed at the professional investors market. The Hong Kong stock exchange in the year 2011, eased and restructured the application and approval process for listing of debt securities issued to professional investors. The eased listing process has brought the Hong Kong stock exchange more in line with the requirements of other stock exchanges in the region and provided an attractive listing venue for debt securities.

2.4.3. Importance of Capital Structure

Decisions relating to financing the assets of a firm are very crucial in every business and the finance manager is often caught in the moral dilemma of what the optimum proportion of debt and equity should be. As a general rule, there should be a proper combination of debt and equity capital in financing the firm's assets. The importance of making a proper capital structure is elucidated below:

- **Value Maximization:** Capital structure maximizes the market value of a firm, i.e., in a firm having a properly designed capital structure the aggregate value of the claims and ownership interests of the shareholders are maximized.
- **Cost Minimization:** Capital structure minimizes the firm's cost of capital or cost of financing. By determining a proper mix of fund sources, a firm can keep the overall cost of capital to the lowest.
- **Increase in Share Price:** Capital structure maximizes the company's market price of a share by increasing the earnings per share of the ordinary shareholders. It also increases the dividend receipt of the shareholders.
- **Investment Opportunity:** Capital structure increases the ability of the company to find new wealth-creating investment opportunities with the right

capital gearing, it also increases the confidence of suppliers of debt.
- **Growth of the Country:** Capital structure increases the country's rate of investment and growth by increasing the firm's opportunity to engage in future wealth-creating investments.

2.4.4. Patterns of Capital Structure

There are usually two sources of funds used by a firm: Debt and equity. A new company cannot collect sufficient funds as per its requirements as it has yet to establish its creditworthiness in the market; consequently, they have to depend only on equity shares, which is the simple type of capital structure. A complex capital structure pattern may be of the following forms:
- Equity Shares and Debentures (i.e., long-term debt including Bonds, etc.),
- Equity Shares and Preference Shares,
- Equity Shares, Preference Shares, and Debentures (i.e., long-term debt including Bonds, etc.). However, irrespective of the pattern of the capital structure, a firm must try to maximize the value of the firm.

2.4.5. The Worth or Value of Firm

A company's value is essentially the total of its creditors' and shareholders' claims. As a result, summing the market value of a company's debt, equity, and minority stake is one of the simplest ways to determine its worth. To get at the net worth, cash and cash equivalents would be removed.

FV = market value of common equity + market value of preferred equity + market value of debt + minority interest − cash and investments.
where FV = firm value.

Or can also be calculated as

The value of a firm represents the sum of market values of outstanding debt and equity.

Hence:

$$V = S + D$$

where V = value of the firm, S = market value of equity outstanding, and D = market value of debt outstanding.

Now, $S = E/K_d$, $D = I/K_d$

Where I = Annual interest charges and Kd = cost of debt. Following the assumptions of capital structure, we may say

$$K_V = \text{EBIT}/K_d$$

$$\text{Or} \quad K_d = \text{EBIT}/K_V$$

where KV = overall cost of capital. Hence Kd may be expressed as;

$$K_d = K_d\left(S/V\right) + K_d\left(D/V\right)$$

2.5. Financial and Non-Financial Companies Structure

The Asian financial catastrophe and the resultant economic slump have had a

significant impact on the company sector. Companies' profitability has been battered sharply while debt obligation has increased. Thus, to enhance and regain its competitiveness, the company sector has reformed its means of fundraising to reduce its reliance on bank overdrafts, increasing long-term debts to replace short-term debts to help expand the liquidity position and attain cost reduction. It is worthy of note that companies contribute to a very much large extent to the stability of the financial system, through its rigorous funding and investment associations with the banking institutions and financial sectors. Nevertheless, a weak company sector will besides expose an economy to financial tremors. This is portraying to be evident in under-developed economies where there is a significant level of financial difficulties in the company sector, and in turn have a larger impact on the country's currency and stock market crises than the typical macroeconomic variables.

The growth in Hong Kong's business environment since the year-end of 2003 is likely to benefit the company sector. Many quantitative techniques adopted by credit analysts in financial institutions are extensions of the Z-score model developed by Altman (1968, 2000). Applying the multiple discriminant statistical methodology to a set of financial and economic ratios, the Z-score model produces a measure that can characterize the potential bankruptcy risk of an individual company. Financial companies are referred to as companies, including H-shares companies, investment companies, and those engaged in banking, insurance, or finance, while non-financial companies are those excluded from financial ones listed on the Hong Kong Main Board and the stock market. The information below is derived from Hong Kong business formation statistics (2019). Foremostly, in the year 2000, there were a total of 504,823 registered companies in Hong Kong compared to 717 in the data. But the number of bank loans taken by these 717 companies accounted for 58.4% of the total loans made by all authorized institutions to the corporations. Compared to 2014 to 2018 recent statistics, the number of domestic companies registered under the Companies Ordinance adds up to 1,380,185 by the end of 2019. As analyzed by the statistics published by the Companies Registry, The total number of newly registered local companies was 151, 739 in 2018 where 47,486 were incorporated via an online process.

Short-Term Debts Account for a Relatively Smaller Share in the Debt Profile of Large Companies While the Reverse is true for Smaller Firms

The share of short-term debt for the sample companies declined to a low of 32% in 2015 after averaging about 35% in the study period. Contrary to the sector average, the majority of the loans taken by small-to-medium firms were short-term in nature, with the share in total loans ranging between 50% and 60% since 2018. Conversely, this insinuates that while small-sized companies are still counting on short-term debts, the very large companies have been reducing these exposures recently. Compared to other emerging economies, the Hong Kong corporate sector appears to rely more on short-term loans in its borrow-

ing.

The company sector of Hong Kong has diversified its debt financing sources since the Asian financial crisis, although the banking system remains its largest creditor. Analysis of the port shows that bank lending is the most important source of loans taken by the corporate sector during the study period. However, its share in the total debt for all corporations declined to 35% in 2018 after peaking at 59%, and 71% respectively in 1996. Besides, the most significant ratio decline is among small firms, dropping by over 20 percentage points from the peak in 1998 to the recent in 2000, possibly reflecting the post-crisis liquidity squeeze. In 2001, while most corporations increased the proportion of bank loans in their debt financing, the very large companies found alternative sources for funding their operations. Conclusively, given the close linkage between the performance of the firms and the stability of the financial structure, it is important to understand the vulnerability of the companies. This study analyses the impact of the capital structure of corporations on financial performance in Hong Kong using their statement of financial position information. The financial ratio analysis shows that the prolonged economic downswing after the Asian financial crisis has been weighing on the corporate sector's ability to meet debt obligations. Furthermore, in response to the difficult business environment, Hong Kong corporations are striving to maintain their competitiveness and regain their profit margin through tightening inventory control and more efficient use of fixed assets. Also, the corporate sector has made efforts to maintain its financial soundness by increasing its liquidity ratio, reducing its funding risk through diversification, and lengthening its loan profile to reduce exposure to short-term interest rate fluctuations. Also, there are significant variations in the financial ratios of different sized firms. In general, very large corporations in Hong Kong appear to be least affected by the Asian financial crisis and the subsequent economic recessions as most of their financial ratios have returned to their pre-crisis levels. Notwithstanding efforts to de-leverage and improve operational efficiency, the profitability of medium-sized companies was reduced because of the adverse economic environment. We could deduce that the Factors that tend to impact a company's capital structure and performance in different contexts may include factors such as Cultural and institutional differences. Moreover, Sekely and Collins (1988) supposed that there exist meaningful differences in the capital structure for a company in diverse countries. However, they never found adequate shreds of evidence to prove the impact of capital structure on firm performance in the year 1983. Eventually, there is a surge in the number of companies improving financially and economically becoming outstanding companies in their sectors in Hong Kong. He (2013) and Zhijuan Chen et al. (2005), after many years, studied the Chinese stock market during the development process and presumes that it has a preliminary weak but efficient market, which is very significant to reveal the influence of firms' capital structure and its relationship on performance. (Figure 1)
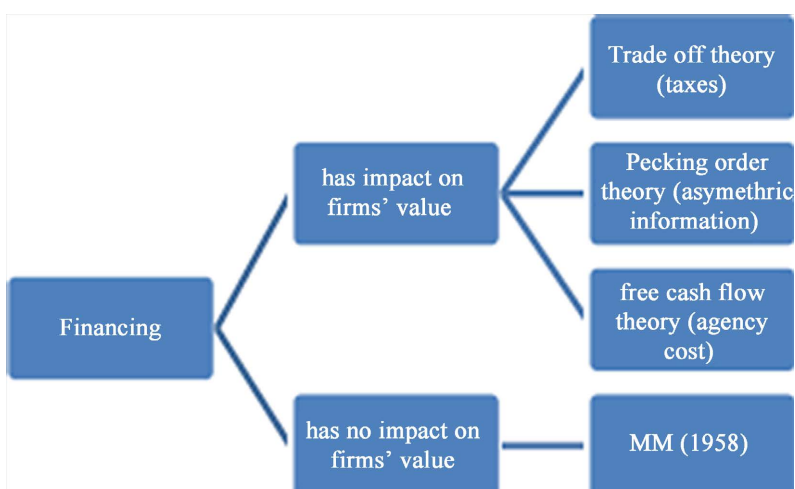
Source: Researchgate.net.

Figure 1. Capital structure theories.

2.6. Conceptual Framework

This research work assessed two different types of variables: the explained variable and explanatory variables. The explained variable is also known as the response variable which represents the dependent variable in our research, while the explanatory variable is also known as the regressor and represents our independent variable. The explanatory variables that are hypothesized, have certain impacts on the explained variables. The explanatory variable in this research includes the Total debt ratio and long-term debt ratio, whereas, the response variable will be represented by return on assets (ROA).

2.6.1. Definition of Capital Structure

The capital structure is the particular combination or mixture of debt and equity that are used by a firm to finance its total operations and growth. Debt could be used by many firms, governments or agencies, and individuals as a means of settlement for bulk purchases that they could not afford under normal circumstances. Debt gives the borrowing party leverage to take overdrafts under the condition that it is to be serviced at a later date, usually with interest. Debt comes in the form of bond issues or loans, conversely, equity might come in the form of common stock, preferred stock, or retained earnings. Moreover, long-term debt is also considered to be part of the capital structure. In respect to Chandra, "Capital structure is centered with how the firm makes decisions to divide its cash flows into two broad components, a fixed component to meet the obligations toward debt capital and a residual component to equity shareholders". In a statement by Gerestenberg, capital structure of a company refers to the composition or makeup of its capitalization and it includes all long-term capital resources viz., loans, reserves, shares, and bonds. Keown et al. referred to the capital structure as, balancing the array of funds sources appropriately, i.e., in the relative magnitude of proportions. Hence, capital structure insinuates the

composition of finance raised from various sources broadly classified as debt and equity. It may be defined as the proportion of debt and equity in the total capital that will remain invested in a business over a long time. Capital structure has to do with the quantitative aspect, and decision-making about the ratios of these types of securities refers to the capital structure of a firm.

2.6.2. Concept of Capital Structure

The ratio of various sources of funds used in a business is conceptualized as financial structure. Capital structure is a part of the proportion of the various long-term sources of financing, as it is concerned with making the array of the sources of the funds properly is in relative magnitude and proportion. The capital structure of a company consists of debt and equity leverages that comprise a firm's fining of its assets. It is also the financing source of a firm represented by preferred stock, long-term debt, and net worth. Therefore, it relates to the arrangement of capital and excludes short-term borrowings. In proprietary concerns, usually, the capital employed is wholly contributed by its owners. In this context, capital refers to the total amount of funds supplied by both owners and long-term creditors. The question arises: What should be the appropriate proportion between owned and debt capital? It centers on the financial policy of individual firms. In one company debt capital may be nil or zero while in another such capital may even be greater than the owned capital. The index between the two is usually expressed in terms of a ratio, which denotes the capital structure of a company.

2.6.3. Definition of Financial Performance

The measure of how well a firm can use assets from its primary mode of business to generate revenues is referred to as financial performance. The term is also used as a general measure of a firm's overall financial strength over a given period. The financial performance analyzes how effective and efficient a company generates revenues and manages its assets, liabilities, and the financial interests of those who have staked interest in the companies. Moreover, revenues refer to the total amount of income made from selling goods or services with the firm's operations.

2.7. Research Methodology

2.7.1. Data Description

To achieve the objectives and hypotheses of this research, our research data was collected from secondary sources basically from the financial reports of the selected listed companies for the sample period from 2014 to 2018. Nevertheless, this research mainly concentrates on the board of director's reports, statements of financial position or balance sheet, and income statements in the company's annual reports. The firms that were chosen as a sample of our research must meet up the following criteria's, such as:

- Listed and never delisted in Hong Kong Stock Exchange from 2014-2018;

- The firms must present a financial report regularly from 2014 through 2018.
- Always have positive equity and performance.

After eliminating the outliers, the final sample size is 202 companies with a total of 1010 observations.

2.7.2. Research Sample

The Sample for this study was focused on 202 large companies listed in HKES. The "Hong Kong Standard company Classification Version 2.0" (HSIC V2.0) is a statistical classification framework for classifying companies-economic units in Hong Kong into relevant industry classes based on the nature of their major economic activities. HSIC V2.0 has been used by the Census and Statistics Department (C & SD) in the compilation, analysis, and dissemination of company statistics since 2009. HSIC V2.0 is devised and maintained by C&SD by modeling on the "International Standard Industrial Classification of All Economic Activities (ISIC) Revision 4" promulgated by the United Nations Statistics Division and adapting to the local economic situation. HSIC V2.0 follows a 5-level hierarchical system. The top-level categories are called company Sections (represented by a 1-digit alphabet code). Under each company Section, there are different second-level categories called company divisions (represented by 2-digit numeric code), under which more detailed third level Industry Groups (3-digit numeric code), fourth level Industry Classes (4-digit numeric code), and fifth-level Industry Sub-classes (6-digit numeric code) are available for refined classification. The hierarchical structure of HSIC V2.0 is summarized below Table 1.

2.8. Definition of Variables

- Independent Variable: The explanatory variables that will be adopted in this study are total debt ratio (TDR), and long-term debt ratio (LTDR) used for further research.
- Dependent Variable: The explained variable that will be adopted is return on assets (ROA) used as a performance proxy.

Table 1. The Hierarchical Structure of HSIC V2.0.

Level	No. Categories of	HSIC Code [Range]	Format	Example
Top-level: Company Section	21	1-digit [A-U]	alphabet	G - Import/export, wholesale and retail trades
Second level: Co Division	88	2-digit [01 - 99]	numeral	47 - Retail trade
Third level: Company Group	221	3-digit [011 - 990]	numeral	472 - Retail sale of food, beverages, and tobacco in specialized stores
Fourth level: Company Class	483	3-digit [011 - 990]	numeral	4721 - Retail sale of food in specialized stores
Fourth level: Company Class	1001	6-digit numeral [011000 - 990000]		472105 - Retail sale of fruits and vegetables, fresh

Source: censtatd.gov.hk/hkstat/un/class/hsic/index.jsp.

- Control Variables: Performance can also be influenced solely by share concentration growth and firm asset growth. Thus, performance is not only impacted by capital structure. Therefore, control variables are used to create a broader perspective of performance determinants.
- Dummy Variable: To assess the impact of time trends on the explained and explanatory variable results, a dummy variable for the period is created. The time frame from 2014 until 2018 is being put into consideration.

2.9. Research Hypotheses

The following hypotheses were formulated for the research work;

$H0$: *There is no significant positive impact of capital structure on firm performance.*

$H1$: *There is a significant positive impact of capital structure on firm performance.*

Also, the previous studies highlight company growth as a crucial indicator of firm performance (Hung et al., 2002). The findings are inconclusive regarding the variation between capital structure and performance. Since companies with growth capacity can generate a greater concentration of share in the market and cooperation of two or more organizations, in producing a combined effect leading to an inflow of economic benefits or favorable returns (Abor, 2005). The impact of capital structure on firm financial performance has received significant consideration by researchers worldwide. Therefore, following (Carlos De Abreu Dos Reis, Miguel Sastre Castillo, & Salvador Roig Dobón, 2007), on the effect of the board's diversity on performance findings revealed it is impossible to assume there is a pure and simple relationship between diversity and performance without considering a series of variables that affect this relationship. Yin, Liu, Wang, & Wen (2018), find that ownership balance can weaken the controlling shareholder's ability to acquire private benefits of control and asserts that the concentration of large shareholders is deemed to enhance control and to positively impact the value of a firm. Pound John (1988), claims that shareholders with a significant share ratio in the company's capital show more interest in decision-making because they can partially internalize the rewards of their effort. Conversely, studies have identified costs associated with certain levels of share concentration that can negatively affect company performance. A high concentration of share growth decreases the autonomy of managers in risk appetite and decision making, which tends to lessens opportunities for new projects (Pound John, 1988), Nevertheless, Rossi Fabrizio & Celenza Domenico (2013), the results obtained by investigating on a sample of Italian listed companies during the period 2002-2011 suggest the lack of relationship between the efficiency of IC and the performance of the companies examined, but show a significant relationship among OC, the efficiency of IC, and firm performance. Their research revealed that the share concentration of a company's five biggest shareholders positively influences firm performance. Khamis Reem & Hamdan Allam and Elali Wajeeh (2015) claim that there is a negative ef-

fect on financial performance using ROA for the first shareholder, while there are no effects for the second, third, fourth, and fifth main shareholders. Khamis Reem, Hamdan Allam and Elali Wajeeh (2015) claim that "ownership concentration has a negative effect with statistical significance on company performance. Institutional ownership was found to have a positive effect on company performance. Managerial ownership was not found to have a significant effect on company performance, however it was found that managerial ownership has a positive effect on performance only in the case of declining ownership concentration". Maury Benjamin (2006) researched how family-controlled firms perform in relation to firms with nonfamily controlling shareholders in Western Europe. "Their results suggest that family control lowers the agency problem between owners and managers, but gives rise to conflicts between the family and minority shareholders when shareholder protection is low and control is high". They posit that the presence of a strong third shareholder positively affects company performance, while a second large shareholder can negatively affect company performance. Finally, Konijn Sander, Kraeussl Roman and Lucas Andre (2011) examined the effect of the dispersion of share concentration on the performance of the company, finding a negative relationship between it and financial performance. Konijn Sander, Kraeussl Roman and Lucas Andre (2011) find a negative correlation between Tobin's Q and blockholder dispersion. The findings are robust to a wide variety of model specifications and controls and differ from results for other geographic regions such as Europe and Asia. Thus, the literature review depicts intensifying empirical evidence on the effects of capital structure on firm performance in developed economies, but minor or insignificant attention has been given to developing economies or markets. Therefore, we propose the following relationships in 4.6.1.

2.10. Research Design and Methodology

This research paper adopted panel data regression analysis technique because the sample contains data across firms and time series. Panel data is a combination of cross-section data and time-series data, it tracks particular companies, people, countries, etc. over time. Nevertheless, cross-sectional data is a data set collected in one time of many companies, whereas the time series data is collected from time to time from a company. The adoption of panel data increases the sample size considerably and is more appropriate to study the dynamics of change. In other to estimate the impact of the capital structure on a firm's performance in this study, after the data has been collected, descriptive statistics and coefficients analysis are done. The resulting correlation coefficient gives an impression of the strength of the relationship between the dependent and the independent variables". The study adopts the use of Eview11 software to run the empirical model and likewise to examine the level of variations of the independent variables and the dependent variable specified in the regression model. Eview11 combines the technology of the best modern software with cutting-edge

features for data handling. It is a statistical tool in modeling, analyzing, and forecasting. Moreover, it can estimate and show the number of coefficients and their probability values all at once in the result table.

2.10.1. Regression Model and Technical Estimate

This model is used in assessing the impact of capital structure on firm performance. In summary, the data set has 202 companies but 1010 observations. Panel data set is sometimes referred to as "balanced panel data" because we observe every single company from the year 2014 to 2018. However, if we observed some of the cities in the year 2014 but not all of them, then we would call it an 'unbalanced panel data. With balanced or unbalanced panel data, we begin indexing observations by t as well as I to distinguish between our observations of the company i at various points in time. This study follows Schulz (2017) approach.

Regression Model (Table 2):

$$ROA_{it} = \beta_0 + \beta_1\ TDR + \beta_2\ C_{SHG} + \beta_3\ F_{AG} + \varepsilon_{it}$$

where: β_0 is constant, β_1, are coefficients of the capital structure, while β_2, β_3 are control variables, i represent the companies fixed effects, and t represents year fixed effects and ε_{it} depicts the error term.

2.10.2. Research Predictions

Based on the model speculated for my data analysis in 4.6.1, I have few expectations or predictions about my regression result and historical studies which include; Capital structure (total debts ratio) may have a positive impact on firm performance in Hong Kong while it should be statistically significant to explain the variations in performance. Moreover, the capital structure of firms is a significant indicator to measure the performance of a company. Nevertheless, given the circumstances of asymmetric information, a company with good performance will have a high ratio of debt-level to show the difference with companies with bad performance. Hence, firms having bad performance will not prefer a high debts-level, for it will bring them high risk. After a long time of

Table 2. Abbreviation of variables.

Dependent variable	Abbreviation	Expected sign	Definition
Performance	ROA		After-tax operating income divided by total assets
Independent variables:			
Capital structure	TDR	+/−	Total liabilities divided by total asset
Capital structure	LTDR	−	Long-term debt divided by total debt plus equity
Control Variables:			
Firm Asset Growth.	F_AG	+	Assets growth (%)
Share concentration growth	C_SH-G		Increase (YES), decrease (NO):
Dummy Variable:	TR	+/−	Dummy variable to account for differences across industries from 2014 to 2018.

development in Hong Kong, the relationship of capital structure (LTDR) and firm performance should be a positive impact instead of a negative one. This follows the pecking order theory that presumes that firms do not have a target level for debt while the cost of financing increases with asymmetric information. The debt ratio should have a steady increase in Hong Kong-listed companies from 2014 to 2018.

3. Result and Discussions

3.1. Descriptive Statistics Analysis

The descriptive statistics summary can be found in Table 3, where the statistics for the whole sample are shown in Table 3. The ROA value that represented the inflow of economic benefits to the companies has an average value of 77.24% over five years. This depicts that firms in the sector had a good performance during that period. The TDR variable has an average value of 73.82%, while LTDR has a 40% average value. This supports our claim in the case study that companies in the economic sector rely less on debt but more on equity. Hence, Long-Term Debt is a Less Important Funding Source Compared to Equity capital. Therefore, it depicts that firms in the Hong Kong economic sector rely less on long-term debt. Nevertheless, for the other variables, the C_SHG variable has an average value of 61.68% which is the concentration of share growth of the companies. Meanwhile, the firm asset growth of the companies (F_AG) variable has 78.38% growth during the study period.

3.2. Correlation Analysis

Pearson correlation coefficient is also known for "Pearson R statistical test". It measures the strength between the different variables and their relationships. The correlation matrix can be found in Table 4 below to express the relationships between;

Table 3. Descriptive statistics.

variable	ROA	TDR	LTDR	C_SHG	F_AG
Mean	0.772418	0.738217	0.407746	0.616832	0.783891
Median	0.274833	0.281534	0.124952	1.000000	0.346311
Maximum	13.53607	19.33004	18.09927	1.000000	13.32798
Minimum	0.000136	0.000180	3.90E−06	0.000000	−0.279313
Std. Dev.	1.513127	1.777712	0.919796	0.486400	1.423256
Skewness	4.611089	6.152015	9.893451	−0.480632	3.513767
Kurtosis	30.93923	49.26093	156.9574	1.231007	17.61726
Observations	1010	1010	1010	1010	1010

Source: E-views 11 software output.

Table 4. Pearson R statistical test.

	ROA	TDR	LTDR	C_SHG	F_AG
ROA	1.000000				
TDR	0.205967	1.000000			
LTDR	−0.066025	0.041395	1.000000		
C_SHG	0.002950	−0.023777	0.030165	1.000000	
F_AG	0.043694	0.083189	0.008215	0.020737	1.000000

Source: E-views 11 software output; Correlation is significant at the 0.01 level (2-tailed) Correlation is significant at the 0.05 level (2-tailed).

- *ROA and TDR*
- *ROA and LTDR.*
- *ROA and C_SHG*
- *ROA and F_AG*

From Table 4 we observe that ROA has a direct but low positive relationship of ($r = 0.20$) with the total debt ratio (TDR). This means that an increase in TDR will result in a 0.20 increase in ROA. However, the estimated coefficient on TDR is statistically significant at 0.05 level and ($P > 0.01$). In contrast, ROA is weakly negatively correlated with LTDR ($r = −0.066$). But the relationship was statistically significant at ($P > 0.05$), accepting the hypothesis that there is a positive relationship between LTDR and ROA. Hence, a unit increase in LTDR will reduce ROA by 0.066. The results also indicate that there is a direct and positive (weak) relationship between C_SHG and ROA ($r = 0.00295$). This supports the hypothesis that there is a positive relationship between C_SHG and ROA. . However, the estimated coefficient of C_SHG is statistically insignificant at 0.05 level and ($P > 0.01$). Finally, the result showed that there also exists a direct and positive (weak) relationship between F_AG and ROA ($r = 0.043694$). This supports the hypothesis that there is a positive relationship between C_SHG and ROA. Nevertheless, the estimated coefficient of F_AG is statistically insignificant at 0.05 and 0.01 levels.

Furthermore, the result reveals that TDR has a significant correlation with F_AG ($r = 0.08215$, $P < 0.05$).

3.2.1. Regression Analysis
In other to estimate the model using panel data regression techniques, the regression can be carried out by adopting three regression models such as:
- Pooled Least Squared (PLS).
- Fixed Effect or LSDV Model (FEM).
- Random Effect Model (REM).

3.2.2. How is the Right Choice of the Model Made between These Three Models?
Therefore, for this research paperwork to choose the appropriate model among the three models, it can be done using the Hausman test. The Hausman test can

be adopted in choosing the sufficient model between Fixed Effect and Random Effect Model.

Hypothesis in the Hausman test is:

H0 = Random Effect Model Appropriate (REM) H1 = Fixed Effect Model Appropriate (FEM).

Decision Criteria: Decision Criterion: Reject H0 if the probability value is less than 5%, Accept H0 if the probability value is greater than 5%. If the Random Effect Model (REM) is chosen, then heteroscedasticity and autocorrelation test is not necessary. The Random Effect Model has been using Generalized Least Square (GLS), so the Random Effect Model (REM) is free from both heteroscedasticity and autocorrelation problems. The test was conducted and the result is as shown below;

3.2.3. Hausman Test

Therefore, from the result stated in Table 5, the probability value is greater than 5%. Thus, we accept the null hypothesis and conclude that the random effect model is appropriate. Consequently, the panel data regression was analyzed by the random effects model in this study.

3.2.4. Regression Result

The result of the regression model is shown in Table 6. The coefficient reveal reveals the sign of the relationship between the dependent variable and the respective independent variables. The (P-value) statistical significance of the

Table 5. Correlated random effects-Housman test.

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
cross-section random	3.716132	7	0.8118

Table 6. Regression result.

Variable	Coefficient	P-value.	Durbin -Watson stat	2.143291
C	0.525737	0.0001	Adjusted R-Squared	0.030601
TDR	0.155916	0.0000	R- Squared	0.037326
C_SHG	0.034749	0.7104		
F_AG	0.026760	0.3983	observations	1010
YR15	0.090008	0.5126		
YR16	0.180213	0.1786		
YR17	0.167409	0.2105		
YR18	0.011548	0.9315		

Source: E-views 11 software output. Significance at the 1%, 5%, and 10% levels respectively.

relationship is reported as well. The explanatory power of the model is indicated by R^2 and adjusted R^2 is low. Based on the results of the Hausman random-effects model is recommended. In the case of TDR, a positive influence with performance (ROA) is found for the period 2014-2018 averages. TDR is the most statistically significant among other variables. Better performing and profitable companies in Hong Kong tend to use a reasonable amount of debt in their capital structure. Nevertheless, some other international studies, find a negative relationship. It is consistent with pecking order theory and its prediction that companies prefer to retain their earnings, to avoid the necessity to raise debt or external equity. On the other hand, this finding is however contradicted with the trade-off theory (which supposes that more profitable firms will borrow more, as they will have a higher motivation to shield their income from taxation).

A positive influence between company C_SHG, (concentration of share growth), and ROA is found. This result is consistent with the results of the majority of other international empirical studies. Meanwhile, it is statistically insignificant at the 5% and 1% levels. The positive sign supports the predictions of the pecking order theory and contradicts the predictions of the tradeoff and agency theories. C_SHG can thus be regarded as a stand-in for ROA. However, this makes firms in Hong Kong rank their funding source by first preferring internal funds (equity) and outweighs their preference for debt.

The beta coefficient of F_AG shows that firm asset growth is positively related to the ROA supporting pecking order theory. It suggests that equity-controlled firms have a tendency not to invest sub-optimally to expropriate wealth from the bondholders. Conversely, this result is contrary to agency cost theory that suggests a negative relationship between the above two variables. The agency cost is probable to have higher costs for enterprises in growing industries that have more flexibility in their choice of future investment.

Finally, the impact of time trends over ROA is found to be positive. However, only 2016 appeared to be fairly significant at the 10% level in explaining the variation between the year and ROA.

3.3. Further Research

Further research which involves reporting alternative specifications that test the same hypothesis was carried out. Hence, removing TDR and replacing it with LTDR by using the baseline model 2 below:

$$ROAit = \beta_0 + \beta_1 LTDR + \beta_2 C\_SHG + \beta_3 F\_AG + \varepsilon_{it}.$$

3.3.1. Further Regression

The result in Table 7, depicts that LTDR has a negative relation with performance (ROA) for the period 2014-2018 averages. My analysis assumes the effect of LTDR on ROA should be a positive impact instead of a negative one because Hong Kong corporations are striving to maintain their competitiveness and regain their profit margin through tightening inventory control and more

Table 7. Regression result.

Variable	Coefficient	P-value.	Durbin-Watson stat	2.115030
C	0.685823	0.0000	Adjusted R-Squared	0.000125
LTDR	−0.073144	0.1619	R- Squared	0.007062
C_SHG	0.019719	0.8351		
F_AG	0.039240	0.2208	observations	1010
YR15	0.076429	0.5824		
YR16	0.139556	0.3022		
YR17	0.178910	0.1856		
YR18	−0.027415	0.8398		

Source: E-views 11 software Significance at the 1%, 5%, and 10% level respectively.

efficient use of fixed assets. Besides, the corporate sector has made efforts to maintain its financial soundness by increasing its liquidity ratio, reducing its funding risk through diversification, and lengthening its loan profile to reduce exposure to short-term interest rate fluctuations. Eventually, because of the difficult business environment, LTDR has a negative relation with ROA and its probability value was also insignificant at 5% and 1% levels. Therefore, if this is not true then my results might be wrong in a way such that LTDR estimates might be too low or standard errors might be too high etc. Conversely, some other foreign studies found a positive relationship. Thus, this finding is however consistent with the trade-off theory which presumes that more profitable firms will borrow more, as they will have a higher motivation to shield their income from taxation. On the other hand, it is contradicting to the pecking order theory and its prediction that companies prefer to retain their earnings, to avoid the necessity to raise debt or external funding.

A positive influence between company C_SHG, (concentration of share growth), and ROA is found. Meanwhile, it is statistically insignificant at the 5% and 1% levels. The positive sign supports the predictions of the pecking order theory and contradicts the predictions of the tradeoff and agency theories. However, we could infer that the assumptions made in the analysis are true. The coefficient of F_AG shows that firm asset growth is positively related to ROA supporting pecking order theory. It suggests that equity-controlled firms have a tendency not to invest sub-optimally to wealth from the bondholders. Conversely, this result is contrary to agency cost theory that suggests a negative relationship between the above two variables. Hence, it could be that the assumptions made in the analysis are true. The coefficients reveal the sign of the relationship between the dependent variable and the respective independent variables. The (P-value) statistical significance of the relationship is reported as well. The explanatory power of the model is indicated by R^2 and adjusted R^2 is low. A positive influence between company C_SHG, (concentration of share growth), and ROA is

found. Meanwhile, it is statistically insignificant at the 5% and 1% levels. The positive sign supports the predictions of the pecking order theory and contradicts the predictions of the tradeoff and agency theories. However, we could infer that the assumptions made in the analysis are true. The coefficient of F_AG shows that firm asset growth is positively related to ROA supporting pecking order theory. It suggests that equity-controlled firms have a tendency not to invest sub-optimally to wealth from the bondholders. Conversely, this result is contrary to agency cost theory that suggests a negative relationship between the above two variables. Hence, it could be that the assumptions made in the analysis are true. The coefficients reveal the sign of the relationship between the dependent variable and the respective independent variables. The (P-value) statistical significance of the relationship is reported as well. The explanatory power of the model is indicated by R^2 and adjusted R^2 is low.

3.3.2. Hausman Test

A second Hausman test was carried out to decide if the random effect model is appropriate after altering the variables by replacing TDR with LTDR. The result shows that the probability value is 1.000 which is greater than the 5% level. Therefore, the assumption made in the analysis could be true that the random effect model is appropriate. (Table 8)

3.3.3. Heteroskedasticity Test

My analysis assumes that the variance of the error term is constant and unrelated to the predictors (homoscedasticity). If my error term is heteroskedastic, then my results might have incorrect standard errors. The white test is a test of whether or not the error term is homoscedastic. If it turns out that the error term is heteroskedastic, then I will use heteroskedasticity-robust standard errors instead of my original analysis. Therefore, the heteroskedasticity result shows that residuals are homoscedastic which is what we want. (Table 9)

Table 8. Correlated random effects-Hausman test.

Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
cross-section random	0.000000	7	1.0000

Source: E-views 11 software output.

Table 9. Cross-section heteroskedasticity LR test.

Specification: ROA C LTDR C_SHG F_AG			
Null hypothesis: Residuals are Homoskedastic			
	Value	df	Probability
Likelihood ratio	2417.061	202	0.0000

Source: E-views 11 software output.

4. Summary

Inclusively, companies are primary elements and factors enhancing the growth of nations and economies (Muller et al., 2016). However, firms have to survive with strategic capital structure decisions, where bank overdrafts serve as the main source of external finance to them (Petersen & Rajan, 1994). This, afterward, makes companies dependent on financial institutions that are giving overdrafts based on the availability of funds and the liquidity of the debtor. Therefore, this master's thesis examines the impact of capital structure on a firm's performance in Hong Kong. Eventually, for both capital structure and performance, different proxies have been adopted to investigate, elucidate and test different theoretical models. The research included 202 cross-sections and 1010 observations for the period of 2014 to 2018.

Companies were classified according to the Hong Kong definition. The medium-term frame of five years and the medium sample contributed to the statistically reliable judgment as well as the prospect to control for the concentration of share growth and asset growth during the financial period. The major theoretical frameworks adopted were the pecking order model and the trade-off model. Concisely, the pecking order theory by Myers and Majluf (1984), argued that the cost of financing increases with asymmetric information, and the asymmetric information theory presumes that at least one party to a transaction has useful information, whereas the other party does not. It is based on the notion that financing comes from three sources, internal funds, debt, and new equity. Therefore, they presume that firms rank their sources of financing by initially preferring internal financing, and then debt, and last of all raise equity as a "last resort". Moreover, companies do not have a target level for debt (Hiller et al., 2014). While the trade-off theory asserts that a firm chooses the amount of debt finance and the amount of equity finance to explore by considering and leveling their costs and benefits. The balance between the dead-weight costs of insolvency and the tax-saving benefits of debt was well considered by Kraus and Lichtenberger.

A panel data model has been adopted and was performed in a random effect regression model. The regression model adopted Return on Assets (ROA) as a proxy for performance. While total debt (TDR), as proxied for capital structure, and additionally concentration of share growth (C_SHG) with firm asset growth (F_AG) were control variables measures for both capital structure and performance. The assessment revealed that (TDR), the proxies for capital structure contained in this study have a statistically small positive relation with the ROA. Furthermore, the panel data analysis included the control variables size (C_SHG and F_AG). C_SHG results depicted a small positive relationship and were not found to be statistically significant. Also, F_AG showed low positive relationships that are also statistically insignificant. Eventually, we performed a further research check on our regression model. Where we substituted TDR for LTDR, the finding revealed a negative insignificant relation between LTDR and ROA,

while the control variables remain positive and statistically insignificant. Therefore, the results of the effect of C_SHG and F_AG on performance proved to be inconclusive. Additionally, the results revealed that the time dummy variables had a minor insignificant effect on the relationship between the proxies of capital structures and firm performance.

5. Conclusion

The impact of capital structure on firm performance remains an unsolved issue in the field of finance. However, we have offered a systematic discussion on how different aspects and types of capital structure influence performance. Hence, enable us to assess the impact of capital structure on performance to enable managers to control the determinants and maximize them. Deductively, the result supports and maintains the pecking order theory, as the relation between capital structure (TDR) and performance (ROA) is significantly positive, which better explains the variation in performance. Nevertheless, inconclusive results were found for the change in the impact of capital structure (LTDR) on firm performance evidently from large companies in the Hong Kong stock exchange. The relation between LTDR and ROA came out to be negatively insignificant. However, we acknowledge the fact that Hong Kong has a different economic system, and the Chinese economy has many characteristics that vary from other countries in aspects such as, consumer consumption and spending behavior, and saving habits. Hence, all of these could be concluded by the different cultural perceptions, and these are the influence to firms and individuals. Therefore, we could assert that the factors that tend to impact a company's capital structure and performance in different contexts may include factors such as cultural, political, and institutional differences. More also, the concentrations of share growth (C_SHG) and Firm-asset growth (F_AG) are not necessarily statistically significant control variable measures for performance. Finally, we emphasize that the results of this study should be interpreted with caution. The financial ratios of the corporate sector, presented in the form of the mean or median, are summarized into a single number to represent a group of highly heterogeneous companies in the economy. There is a risk of over-generalization. Sometimes, it may even be misleading when these summary statistics are combined for an overall assessment of the corporate sector if these ratios are sector-biased or dominated by some special companies.

6. Recommendations

This paper could be improved in the future by analyzing firms with sufficient data sets, and which have reported data for at least eight years consecutively in their annual reporting. Next, the statutory system should be perfected to protect the shareholders' interests, especially for the minority shareholders. potential researchers could pay attention to the statutory system's effect on the firm performance. Nonetheless, there could be variations in the capital structure (debt

ratios) across different industries. Therefore, this research topic would be recommended as a subject matter for further investigations. Besides, the results have not been assessed on an industry level to detect possible industry effects, and also other control variables could reveal to be better predictors for performance measures other than the ones selected for this research. Furthermore, e, Hong Kong government could allow private funds to enter the capital market for it will be both helpful to develop the capital market and provide a new channel for firms to finance; also, they should inspire the function of bonds to improve the bond market which will provide more sources of finance to companies, and in turns gradually decreases the administrative intervention to the bond market and give bond market more space to perfect itself. Therefore, the influence and roles of financing channels could be examined.

Finally, we emphasize that the results of this study should be interpreted with caution. The financial ratios of the corporate sector, presented in the form of the mean or median, are summarized into a single number to represent a group of highly heterogeneous companies in the economy. There is a risk of over-generalization. Sometimes, it may even be misleading when these summary statistics are combined for an overall assessment of the corporate sector if these ratios are sector-biased or dominated by some special companies. For this reason, these ratios should be examined with other sources of information, including market intelligence and business, when used to monitor the health of the corporate sector in Hong Kong. Therefore, further research's concerning these areas should be focused on in the future.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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