Investigating Three Aspects of Corporate Finance Within the Context of GCC Markets

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by

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Abstract

This thesis investigates three aspects of corporate finance, namely the determinants of firm's long term investment represented by the net capital expenditures, the determinants of firm's short term investment represented by working capital requirements and the capital budgeting practices - all within the context of Gulf Cooperation Council (GCC) markets. Despite the importance of these interrelated topics to decision makers and despite the great emphasis given to teach them in universities, few researchers investigated the determinants of both long and short term investments and out of those, most focused on developed markets. Moreover, almost all the existing studies investigated these determinants at the firm level with little evidence about macroeconomic factors. Besides, none have provided a comprehensive investigation of capital budgeting practices from a single market whether developed or emerging.

Hence, this thesis completed three independent investigations. The first and second investigation presented in chapters three and four respectively, explores three categories of factors that are found in the existing literature, or predicted by this thesis to be associated with firm's long and short term investments. These first two investigations utilize a pooled OLS regression for a panel data set covering the period from 2000 to 2014. Furthermore, the third investigation presented in chapter five explores a wide set of capital budgeting practices from a single frontier market within the GCC. Precisely, the investigation covers the development, the selection and the post completion stage of capital budgeting. It also, explores factors that are found in the existing literature or predicted by this thesis to influence the use of such practices. This investigation utilizes a survey questionnaire containing 23 questions to gather the required data.

Finally, this thesis makes various contributions to the corporate finance literature. Specifically, chapter three and four extend the existing literature on the determinants of firm's long and short term investments by examining it in the context of new emerging markets namely the GCC markets. Beside, revealing the positive effect of macroeconomic factors on firm's investments. Chapter five extends the existing literature on capital budgeting practices by investigating three stages of these practices from the Omani market. Additionally, it provides new evidence related to the significant relation between capital budgeting practices and new firms characteristics.

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List of Abbreviations

Accounting Rate of Return----------(ARR)

Capital Assets Pricing Model----------(CAPM)

Chief Executive Officer----------(CEO)

Discounted Cash Flow----------(DCF)

Financial Leverage ----------(FLEVER)

Firm Rate of Return----------(FROR)

Fixed-Effects Model ----------(FEM)

Gross Domestic Product----------(GDP)

Gulf Cooperation Council----------(GCC)

Internal Rate of Return----------(IRR)

Lagrange Multiplier----------(LM)

Muscat Securities Market----------(MSM)

Net Equity Issuing Activity ----------(NEIA)

Net Present Value----------(NPV)

Non-Discounted Cash Flow----------(NDCF)

Omani Rial----------(OMR)

Ordinary Least Squares----------(OLS)

Payback Period ----------(PP)

Random-Effects Model ----------(REM)

Research and Development----------(R&D)

Return on Equity----------(ROE)

Small and Medium Enterprise----------(SME)

United Arab Emirates----------(UAE)

United Kingdom ----------(UK)

United States of America ----------(US)

Weighted Average Cost of Capital----------(WACC)

Chapter 1: Introduction

Over the last 60 years, corporate finance has been developed as a science through several theories. Each new theory suggested different scenarios to understand and solve problems related to financial and investment decision making. Modigliani and Miller's (1958) irrelevance theory of capital structure formed the basis of corporate finance literature. "Modigliani and Miller pointed the direction that such theories must take by showing under what conditions capital structure is irrelevant. Since then, many economists have followed the path they mapped" (Harris and Raviv, 1991, p. 279). Subsequent theories have built on their capital structure irrelevance principle, including the trade-off, pecking order, agency cost and market timing theories.

These theories have motivated researchers to investigate several areas of corporate finance, including capital budgeting practices and the determinants of cost of capital, capital structure and dividend and its policies, all of which are critical issues for firm's financial and investment decision makers. However, two further important elements of corporate finance have been neglected by researchers: the determinants of firm's capital expenditures and the determinants of firm's working capital requirements. This is despite the fact that they respectively represent the firm's long-term and short-term investment, and despite the great emphasis given to teaching them in universities. Of the few researchers who have investigated the determinants of these elements, the majority have focused on developed markets.

Therefore, this thesis aims to explore the determinants of firm's long-term and short-term investment, as well as the procedures used to assess and implement investments in emerging markets. This motivation arises from the need to explore these aspects of corporate finance in order to meet the desire for information from investors and governments as well as financial professionals.

Investors normally seek confidence in markets before investing, and such confidence is based upon the availability of information. However, with all potentials what emerging and frontier markets can offer to investors, yet it is found to be under-researched and undervalued as stated by (Stallvik, 2013.P:177): "The recent economic development and implementation of investor-friendly policies in many of the frontier markets has helped to begin integrating them into the global economy and has led to increased depth and liquidity in their stock markets. However, frontier markets

continue to be under-researched and are structurally underweighted by institutional investors, making these markets undervalued".[1] Therefore, the desire to invest may deteriorate because of lack of information about investments in these markets.

Moreover, a wide range of important emerging and frontier markets growth models are dependent on mainly one source of income. A typical example is the Gulf Cooperation Council (GCC) markets, which are accused of being sustained by the income from their hydrocarbon commodities. This claim implies to investors that there is a direct effect between such a volatile source of income and markets activities such as investments. Therefore, the desire to invest may deteriorate further because of lack of evidence supporting this type of claim, because existent studies of the determinants of firms' long-term and short-term investments have assessed factors at the firm level only, and findings about macroeconomic factors are almost non-existent.

Over the last 40 years, in the hope of reducing their reliance on hydrocarbon commodities revenues, the governments of the GCC countries have implemented numerous strategies to diversify their national economies. However, these efforts have not yet been documented, therefore creating a need to investigate whether their key macroeconomic factors, namely government expenditures, government revenues, crude oil prices, and terms of trade, are affecting firms' long-terms and short-term investments.

Therefore, the main objective of this thesis is to investigate the determinants of firms' long-term and short-term investments in the GCC markets. It also explores the various procedures used by firms to assess and implement investments. This main objective can be broken down into three separate objectives:

- **Objective 1:** to investigate three categories of factors found by previous studies or predicted by this thesis to be associated with firm's long-term investment. These factors are firm's external financing measures, firm's

[1] The frontier markets were so-called by Farida Khambata in 1992. He used the term to differentiate a subset of emerging markets that is viewed as the next generation of emerging markets. There is no unified agreement on its definition, but it is mostly described as those states with large populations and favourable demographics with age distributions that differentiate younger economies from those with a developed and growing middle class. The gross domestic product (GDP) per capita of many frontier countries is lower than traditional emerging markets, but growing fast. Other frontier markets are in oil-rich Middle East countries that have high GDPs per capita and smaller populations, but exhibit fewer aspects of the developing and emerging middle-class trends seen in most "frontier markets" (Al-Jafari et al. 2011).

internal financing measures, and macroeconomic factors. The significance of this objective is in revealing the similar and different determinants of firm's long-term investments between developed and emerging markets. It also reveals the influence of critical macroeconomic factors on GCC firm's long-term investments.

- **Objective 2:** to investigate three categories of factors found by previous studies or predicted by this thesis to be associated with firm's short-term investment. These factors are firm's external financing measures, firm's internal financing measures, and macroeconomic factors. The significance of this objective is in revealing the similar and different determinants of firm's short-term investments in developed and emerging markets. It also reveals the influence of critical macroeconomic factors on GCC firm's short-term investments.
- **Objective 3:** to investigate a wide set of capital budgeting practices from a single emerging market and the factors found by previous studies or predicted by this thesis to influence such practices. The significance of this objective is in providing a comprehensive investigation that covers three stages of capital budgeting practices: the development, selection, and post-completion stages. It also reveal whether existing findings on capital budgeting practices in developed markets hold in the Omani market, which serve as a model of the other GCC markets.

The fulfilment of these objectives enabled this thesis to make the following contributions to the literature:

1) Chapter 3 extends the existing literature on the determinants of firm's long-term investment by examining new emerging markets, specifically the GCC markets. These markets serve as a sample of emerging markets that depend on a single source of income. They therefore allow us to extend the existing literature by documenting the positive effect of macroeconomic factors, specifically government expenditures, crude oil prices, and terms of trade on a firm's net capital expenditures. For example, the results for government expenditures are in contrast to what have been documented in the literature as it is found to inversely influence the Bangladeshi firms long term investment.

Such a difference can be explained by the different nature of fiscal policies between the markets. The Bangladeshis fiscal policy depends on several sources of income out of which corporate tax is most important. Hence, an increase in their government expenditures can be a results of high corporate tax imposed on firms which can reduce the ability of corporations to invest. This is not the case with the GCC fiscal policy as it mainly depends on hydrocarbon revenues with a modest contribution from corporate taxes.

2) Chapter 4 extends the existing literature on the determinants of firm's short-term investment by examining new emerging markets, specifically the GCC markets. These markets serve as a sample of emerging markets that depend on a single source of income. They therefore allow us to extend the existing literature by documenting the effect of macroeconomic factors, specifically government oil revenues and terms of trade on working capital requirements. This chapter further extends the existing literature by improving the measurement of firm's working capital requirements, because many existing studies have combined it with other working capital terms such as working capital management and net working capital. Therefore, this chapter provides more robust evidence with regard to the determinants of working capital requirements alone. The chapter also provides new insights by documenting the influence of new variables at the firm level, namely net equity issuing activities, firm's rate of return, free cash flow, and retained earnings. Besides, it revealed that the GCC services firm's short term investment are more influenced by the change in government oil revenues and terms of trades than industrial firms. Such finding indicates that GCC economies still have a modest services sector which depends on the domestic market and suffer from lack of foreign markets exposure.

3) Chapter 5 extends the existing literature relating to capital budgeting practices by investigating a new frontier market that has not been studied previously, namely the Omani market, which serves as a model of the other GCC markets. This is because most of the existing findings on capital budgeting practices are from developed markets and little is known about these practices in frontier and emerging markets. This chapter further extends the existing literature by widening the investigation to cover three stages of capital budgeting practices,

because existing studies in both developed and emerging markets have focused mainly on a particular stage, the selection stage, whereas evidence about the other stages are not yet spread in emerging and frontier markets. In particular, the chapter provides new evidence relating to the development stage by revealing information about the types of investments that require the use of capital budgeting practices, the departments responsible for evaluating proposed projects, the existence of procedures for generating information about future cash flow, the forecasting methods used for generating cash flow estimates, the existence of adjusting projected cash flow for inflation and the methods used for such an adjustment. The chapter also provides new evidence relating to the selection stage by revealing information about the ignorance of the real options analysis as a selection method, as well as the existence of capital rationing and the possible reasons behind it. The chapter also provides new evidence relating to the post-completion stage by revealing information about whether firms compare their actual with forecasted cash flow, the level of accuracy they obtain, and the frequency of project evaluation. New evidence is also provided relating to the most difficult stage of capital budgeting practices in the Omani market. The chapter also provides new evidence of the relationship between capital budgeting practices and various characteristics of firms and chief executive officers (CEOs). For example, the results show that as firms grow in size and performance the more likely sophistication of capital budgeting practices is being followed. Similarly, as CEOs age and tenure advances, the more likely that they follow sophisticated capital budgeting practices.

Finally, the remainder of this thesis is organized as follows: chapter 2 provides a brief background to corporate finance and its related theories as well as a brief overview of the GCC markets and why these markets were chosen. This chapter creates the foundation for the investigations of this thesis. Then, chapter 3 present the investigation of the determinants of firm's long-term investment across the GCC countries. Followed by chapter 4 which present the investigation of the determinants of firm's short-term investment across the same countries. Later, chapter 5 present the investigation of capital budgeting practices in the Omani market. Finally, Chapter 6 provides concluding remarks.

Chapter 2: Background to Corporate Finance and GCC Markets

2.1. Background to Corporate Finance

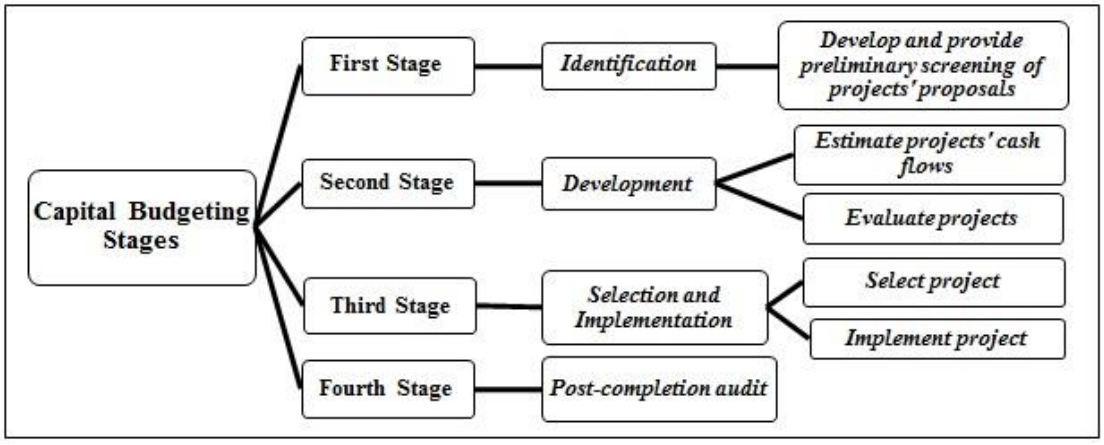
Corporate finance knowledge is important because it helps a firm achieve its desired goal of maximizing its shareholders' wealth. The firm's management must obtain good corporate finance knowledge to answer two broad questions: which investments should be acquired, and what type of financing should be obtained to make this investment profitable.

Financing decisions are in one of two forms: internal financing, e.g. by retained earnings, or external financing, e.g. by approaching banks for short-terms loans or approaching the capital market to issue equity or long-term debts. Consequently, a financing decision is usually made after determining the best capital structure that provides the lowest cost of capital for the firm to implement capital investment projects. This cost of capital is a vital element in any investment decision, because it is the minimum rate of return the investment must generate and is the cut-off rate that provides the management with the first indication of investment success or failure. Therefore, management must determine the optimal capital structure that will provide the lowest cost of capital for a project to ensure that the investment will be able to pay off its implementation and operation costs (Brigham and Ehrhardt, 1997).

Firms choose and implement investment projects by following several procedures, including investment analysis, investment appraisal, feasibility studies, capital investment tools, planned capital expenditures, project analysis or evaluation, and capital budgeting practices. The most common procedures are capital budgeting practices, which are "a system of interrelated steps for generating long-term investment proposals; reviewing, analysing, and selecting them; and implementing and following up on those selected. This process is dynamic because changing factors in an organization's environment may influence the attractiveness of current or proposed projects" (Baker and English 2011, p. 2).

In general, the capital budgeting process has four main stages: Identification, Development, Selection and Implementation, and Post-Completion Review (Figure 2.1).

Figure 2.1: The Capital Budgeting Process



Source: Baker and English, 2011, p. 2

All of these stages are important, and failure in one may prevent the firm accomplishing its overall investment strategy. For example, if the firm fails to identify feasible projects that will fulfil the firm's strategy, the firm's management does not need to develop estimates. When feasible projects have been identified, management will implement the second stage, which involves estimating and forecasting cash flows generated from these projects. When the cash flows have been projected, management will use particular financial techniques to help them select the most viable and profitable project. Thereafter, management will decide the best possible source of finance to fund the implementation and the operation of the selected project. When the project is in place, management will usually perform periodic reviews to examine the performance of the project and, finally, to decide whether to continue or abandon the project.

Thus, the subject of corporate finance is mainly concerned with investment decisions that are made through a sophisticated set of procedures called capital budgeting. An investment is evaluated and selected by taking into consideration the type of financing and its associated cost. This description is mainly derived from several theories relating to corporate finance, namely theories of capital structure and cost of capital.

Academics and professionals first began to be interested in these subjects when Modigliani and Miller (1958) presented their theory of capital structure. Modigliani and Miller argued that the value of a firm that exists in perfect market conditions is not determined by its capital structure. The argument is known as "the capital structure irrelevance theory" because it does not apply in reality, where tax, bankruptcy cost, agency cost, and information asymmetry exist. Later, Modigliani and

Miller (1963) developed their argument further by considering firms in efficient markets and including tax incentives. They concluded that highly leveraged firms can benefit from the tax because the interest payments of debts are tax deductible and hence the value of the firms is enhanced.

Further theories were developed, such as trade-off theory, pecking order theory, market timing theory, and agency cost theory. Trade-off theory argues that the optimal capital structure is dependent on the compensation of interest tax shields and the cost of financial distress. It takes the present values of all equity finance plus tax savings minus the cost of financial distress. The theory shows that as the firm increases borrowing, its tax benefits increase until the excess volume of borrowing increases sharply the possibility of financial distress. Hence, firms must balance equity financing and debt financing, but maintain the level of financial distress to enhance its value. In other words, trade-off theory implies that firms with safe tangible assets and a high volume of taxable income to shields should have a high target debt ratio.

However, trade-off theory fails to explain why firms with high earnings have a low debt ratio. This can be explained by the pecking order theory, which was developed by Myers and Majluf (1984). Pecking order theory is based on information asymmetry. It argues that share issuance reduces share prices because investors think that management tends to issue shares when the shares are overvalued. Instead, firms will tend to issue bonds to obtain funds and avoid the possibility of sending wrong signals to the market. However, issuance of bonds is not the solution, because it can cause problems if the probability of default is high. In this situation, management may prefer to use internal financing sources rather than external financing. If external financing is needed, then the firm will issue bonds first and keep share issuance as the last option.

Market timing theory assumes that a firm issues and buys back shares based on particular timing, according to the market value of the shares. The firm issues shares when they are believed to be overpriced and repurchases the shares when they are believed to be under-priced. Therefore, volatility in share prices affects the firm's capital structure decisions. Myers and Majluf (1984) argued that managers will issue shares immediately after the market receives good news about the firm. This reduces the problem of information asymmetry between the firm's management and its

investors. Therefore, the level of information asymmetry affects share values. Baker and Wurgler (2002) examined the market timing exploited by managers and found that low leverage firms issued shares when their shares value was high, whereas high leverage firms issued shares when their shares value was low.

Agency cost theory, developed by Jensen and Meckling (1976), argues that a firm's management is not necessarily working towards maximizing their shareholders' wealth, but rather is acting in their own interest. This creates a conflict of interest between the firm's management and investors as well as the debt providers. When a conflict of interest arises between management and shareholders, it is called the agency cost of equity. When a conflict of interest arises between management and debt providers, it is called the agency cost of debt. Therefore, agency cost theory considers agency cost to be a main determinant of a firm's share price performance.

Finally, the cost of capital methods that are most common in the literature are the capital assets pricing model (CAPM) and the weighted average cost of capital (WACC). The CAPM was introduced by Sharpe (1964), Lintner (1965a,b), and Mossin (1966). It measures the relationship between risk and return of assets or securities. The model consists of three elements: the market risk-free rate, the market premium, and the beta factor of the shares. Although it is popular, the CAPM has received criticism regarding its applicability to real practice.[2] On the other hand, the WACC takes into account all the sources of capital available for the firm. The WACC formula takes the proportion by weight of each source of capital to produce an overall cost of capital. Besides WACC and CAPM, other methods described in the literature to calculate the cost of capital are the earnings yield, the dividend yield, and average historical return on common stock.

2.2. Overview of the GCC Markets

The GCC was established in 1981 to form a political and economic alliance between six countries in the Arabian Peninsula: the Sultanate of Oman (Oman), the Kingdom of Saudi Arabia (Saudi), the Kingdom of Bahrain (Bahrain), the State of Qatar (Qatar), the State of Kuwait (Kuwait), and the United Arab Emirates (UAE). The main reason for forming the council is the similar characteristics shared by these

[2] Refer to Naylor and Taponi (1982) for a detailed evaluation of CAPM potentials and limitations.

countries, namely the Islamic religion, Arabic language and traditions, similar political regimes, and economic activities (GCC Charter, 1981).

Economically, the GCC region is important to world trade because of its amount of natural resources, particularly crude oil. Three member states of the GCC are top ten reserve-holders of crude oil in the world: Saudi, followed by Kuwait and the UAE (Table 2.1). The same states are top ten producers of crude oil in the world, although despite having fewer reserves the UAE produces more oil than Kuwait. Overall, the GCC countries own 30 percent of world oil reserves and produce nearly 23 percent of oil for global consumers.

Table 2.1: Crude Oil Reserves and Production of GCC Member States as of 8 September 2016

	Oil Reserves			Oil Production		
Country	Proved Reserves (Billion Barrels)	Percentage to the World	World Rank	Total Production (Thousand Barrels Per Day)	Percentage to the World	World Rank
Saudi	267.91	16.05%	2	11,725.68	13.12%	1
Kuwait	104.00	6.23%	7	2,796.79	3.13%	9
UAE	97.80	5.86%	8	3,213.19	3.60%	7
Qatar	25.38	1.52%	14	1,579.18	1.77%	17
Oman	5.50	0.33%	23	923.77	1.03%	24
Bahrain	0.12	0.01%	63	49.16	0.06%	64
Total:	500.71	30%	N/A	20,287.77	22.71%	N/A

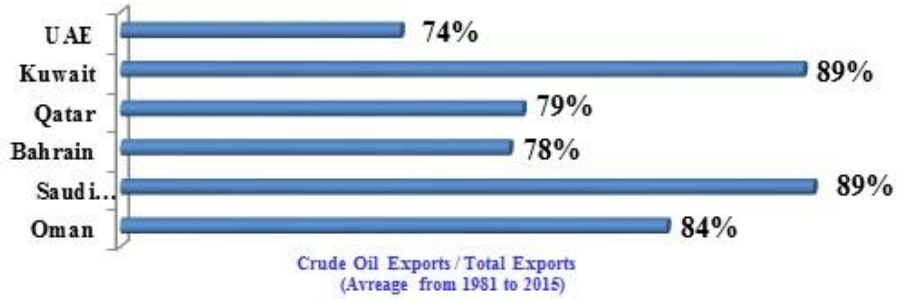
Source: The US Energy Information Administration

The GCC region is also important to world trade because of its location. GCC countries are able to export their commodities freely through the sea and without the need to use foreign land. Such an advantage is lacked by other oil-producing countries such as Azerbaijan, Kazakhstan, and Turkmenistan, which depend on neighbouring countries to export their commodities (ACRPS, 2011).

Therefore, because of the economic and geographic importance of the GCC region, these countries have advanced their trade with the world over the last 40 years, so that today they have accumulated vast proceeds from hydrocarbons that have enabled them to advance their internal economies. This internal economic advancement has taken place through modernizing infrastructure, creating jobs, improving social indicators, creating reserves, and maintaining low foreign debts. As a result, in 2015 the gross domestic product (GDP) of the GCC countries reached nearly 1.6 billion US dollars, and the income per capita was 32,000 US dollars. Thus, the advancement of their economies has led to their classification as high-income nations according to the World Bank (Abdulqader, 2015).

However, these favourable indications of the GCC economies are doubtful in terms of long-term sustainability. The economic growth model of the GCC countries depend heavily on oil as their main export and source of revenue. Therefore, the authorities of the GCC countries have implemented several steps during the last 20 years to diversify their economies, aiming to reduce their reliance on their natural resources. For example, they have succeeded in maintaining a low-inflation economic environment, improving human capital, liberalizing trade, and encouraging foreign direct investments through almost-zero tax or low-tax jurisdictions (Callen et al. 2014). However, with all these effort for economic diversification, crude oil still accounts for 80 percent on average of GCC countries' exports (Figure 2.2). Hence, the financial capabilities of the GCC region face constant drawbacks because of the region's heavy dependence on oil revenues, which is a volatile commodity.

Figure 2.2: GCC Countries' Oil Dependency.



Source: World Bank – Data Bank

Moreover, banks are the main provider of funding to GCC firms, which indicates that GCC financial markets are emerging compared with developed countries' financial markets. All GCC stock markets were established after the 1960s, with the Kuwaiti stock exchange the first to begin operations in 1977. Since then these markets have experienced gradual advances in terms of regulations and structural development. By the end of 2015, the accumulated size of the GCC stock markets was 940 billion US dollars (Table 2.2). The Saudi stock exchange is the largest in the GCC in terms of market capitalization, accounting for 421 billion US dollars and 65 percent of the country's GDP. The Bahrain stock exchange is the smallest in the GCC in terms of market capitalization, accounting for 19 billion US dollars and 60 percent of the country's GDP. Thus, the size of GCC capital markets differs considerably. For example, although the Saudi stock exchange is the largest in terms of market capitalization, the Kuwaiti stock exchange is the largest in terms of number of firms listed, with 172 firms versus 202 firms respectively.

Table 2.2: Size of GCC Stock Markets as of 31 December 2015

Country	Number of Listed Firms	Market Capitalization (Billion US Dollar)	Market Capitalization (Percentage of GDP)
Oman	119	41	59
Saudi	172	421	65
Bahrain	43	19	60
Qatar	43	143	85
Kuwait	202	120	70
UAE	114	196	53
GCC	693	940	N/A

Source: The World Bank – Data Bank

Regardless of the size variation, these markets can be considered as a single market because they are integrated in terms of policy standardization, law, and regulations governing them. Furthermore, several characteristics are shared by the firms listed in GCC stock exchanges. For example, high ownership of government and influential families, preference for debt financing instead of equity finance as a method of maintaining ownership and control over firms, and preference of bank loans because of the high equity investment of banks in firms.

2.3. Conclusion

This chapter summarizes the concept of corporate finance and relevant theories. This provides a roadmap for conducting the three investigations of this thesis, by allowing us to choose the factors to examine as determinants for firms' long-term and short-term investments. For example, trade-off theory implies that external financing factors enhance a firm's value. On the other hand, the pecking order and agency cost theories imply that internal financing factors enhance a firm's value. Therefore, because a firm's value represents an investment in itself, we assess the influence of the variables implied by these theories with a firm's net capital expenditures and working capital requirements. Moreover, this chapter's summary of financing and investment decisions provides a roadmap for a wider investigation of capital budgeting practices, by showing the stages of capital budgeting practices and the elements required to conduct these practices, namely the type of financing and the cost of capital.

Finally, this chapter shows that the GCC markets are in line with the target markets of this thesis. First, the GCC economies are considered to be emerging or frontier markets. This enables the thesis to reveal the similar and different determinants of firms' long-term and short-term investments in developed and emerging markets. Second, the GCC is considered to be an important region for trade and investment, but

its growth model is accused of being affected by fluctuations in the global trade of hydrocarbons. This enables the thesis to reveal the influence of critical macroeconomic factors on firms' long-term and short-term investment, namely government expenditures, crude oil prices, government oil revenues, and terms of trade. However, to fulfil the third objective of the thesis, which is to investigate the capital budgeting practices, the Omani market is chosen because it is beyond the capacity of the researcher to survey six markets, and the Omani market is found to be suitable for such investigation as discuss later in chapter 5.

Chapter 3: Determinants of Firms' Long-Term Investment Across the GCC Countries

3.1. Introduction

Capital expenditures represent long-term investment decisions in the corporate world. It involves acquiring long-term assets such as plants, machineries, and properties to produce future positive cash flows. These expenditures are the core of a non-financial firm's long-term strategies and have drawn the attention of researchers to explore its determinants. However, the main focus of researchers exploring the determinants of firm's capital expenditure is drawn to firm's internal accounting information such as profitability and liquidity measures (e.g. Fazzari et al., 1988; Morck et al., 1990; Beatty et al., 1997; Welch and Wessels, 2000). Moreover, these studies have mainly investigated this subject in developed markets, and little is known about it in emerging markets.

Hence, there are scarce findings about the determinants of firm's long-term investment in emerging markets. There are also scarce findings about the macroeconomic determinants of firm's long-term investment in both developed and emerging markets. Therefore, the main objective of this chapter is to assess empirically the fundamental factors that are important in explaining firm's long-term investment in emerging markets, particularly the markets of the GCC countries.

Following Beatty et al. (1997), the factors examined in this chapter are classified into three categories: (1) firms' external financing factors; (2) firms' internal financing factors; and (3) macroeconomic factors that are economically influential to GCC markets. These factors are government expenditures, oil prices, and the level of trade. Given the importance of oil as one of a highly globally demanded commodity and because of the critical role played by this commodity in several economies, the GCC serves as a model of oil-dependent market from which to generalize this chapter's findings.

Thus, this chapter documents the similar and different determinants of firms' long-term investment in developed and emerging markets. It also provides new insights through exploring the influence of government expenditures, oil prices, and levels of trade on firms' long-term investments.

3.2. Definition of Firms' Long-term Investments

Capital expenditures are fundamental decisions taken by firms that risk their funds in the hope of producing future revenue streams. Therefore, such expenditures are central to a firm's long-term investment strategy; they involve risk taking because they are non-recurring expenditures that span over a long period of time and typically involve the disbursement of large funds (El-Daour and Abu Shaaban, 2014). Thu, for the purpose of this chapter, net capital expenditures are used to indicate firms' long-term investments.

3.3. Review of Empirical Studies of Determinants of Firms' Long-Term Investments

Researchers first explored the determinants of firms' long-term investments after Modigliani and Miller's (1958, 1961) suggestion that financial structure and financial policy are not correlated to real investment decisions under certain circumstances. Two of the earliest influential studies were Fazzari et al. (1988) and Morck et al. (1990). Both these studies aimed to examine the effect of stock returns on long-term investments.

Fazzari et al. (1988) examined data of 422 US manufacturing firms from the annual Value Line database. Their study covered the period from 1970 to 1984, and long-term investment was measured as the sum of the firm's plant and equipment. The study found that firm's investments are strongly associated with stock values (predicted by contemporaneous and lagged Tobin's q). The study also found that firms with low distributed dividends are mostly depended on available cash flow to decide their future investments.

However, Morck et al. (1990) found that stock returns are not correlated to investment. This study's sample consisted of 1,125 US firms from the Compustat database, which covered the period from 1960 and 1987. Long-term investment was measured as the growth rate of actual capital expenditures minus mergers and acquisitions. The study concluded that the empirical evidence showed a minimal relationship between equity returns and investment. Moreover, it found that this relationship is not driven by the costs of external financing.

Later, Beatty et al. (1997) empirically assessed broader factors associated with firm's long-term investment. They defined the firm's long-term investment as net capital

expenditures, which is the reported capital expenditures minus sales of property, plant, and equipment. The sample consisted of Compustat firms and covered the period from 1973 to 1989. The study examined three categories of factors assumed to affect net capital expenditures: external and internal financing factors and firms' tax benefits. With regard to external financing factors, their results showed that both positive equity returns and stock issuances predict growth in net capital expenditures. Moreover, they found that internal financing factors, specifically net profit and depreciation, are positive predictors of growth in net capital expenditures. The results also showed a notable influence of dividend pay-outs on net capital expenditures. The study concluded that most of the tested factors are positive indicators of future investment, except tax incentives.

Welch and Wessels (2000) conducted a similar study to Beatty et al. (1997), but with a multinational comparison between the US, Canada, United Kingdom (UK), mainland Europe, and Japan. Similar to Beatty et al. (1997), Welch and Wessels found that lagged equity returns are the most notable cross-sectional predictors of growth in net capital expenditures, except in mainland Europe. The study concluded that the only factor predicting the growth of net capital expenditure among firms in mainland Europe is their profit tax rates. Firms with high profit taxes resort to raising their net capital expenditures.

Hence, these findings drew the attention of a few researchers to investigate the determinants of firms' long-term investments in emerging markets. For example, Bolbol and Omran (2004) examined the relationship between equity returns and long-term investment for 83 firms listed across five Arabic states – Egypt, Jordan, Morocco, Saudi, and Tunisia – from 1996 to 2001. They found that both revenues and growth in debt are important determinants of capital expenditures, but not cash flow and stock returns.

Later, Jiang et al. (2006) examined the association between capital expenditures and return on assets for 357 industrial firms listed on the Taiwan stock market from 1992 to 2002. They found a significant positive association between the tested variables. Afterwards, Nguyen and Dong (2013) conducted a broader study by examining the determinants of corporate investment decisions for 500 non-financial firms listed on Vietnam's stock market. They concluded that the key determinants of long-term investment for their sample firms were cash flows, fixed capital intensity, business

risk, financial leverage, firm size, and past investment.

Lastly, Subrahmanyam et al. (2013) examined and compared the determinants of long-term investment for both US and Indian firms. Their results showed that the primary predictors of US firms' capital expenditures are the firm's historical growth (in terms of earning per share) and level of financial leverage. On the other hand, the primary predictors of Indian firms' capital expenditures are free cash flow and firm size.

The countries where these studies were conducted are considered to be developed markets, and where they are not, they depend on several sources of revenue to sustain their economic growth. Thus, there is still a need to investigate the determinants of firms' long-term investment. Moreover, almost all of the above-mentioned studies assess the determinants of firms long-term investment by examining factors at the firm level. They also investigated markets as a whole, and there are scarce findings about differences of firms' long-term determinants among different market sectors.

This chapter fills this gap in the literature by assessing the GCC markets, which serve as a model of many countries that depend on a single source of national income. This choice of market type allows generalization of the chapter's findings for countries with a single source of national income, by addressing three main queries. First, does the existing finding of the determinants of net capital expenditures hold in the GCC markets. Second, is there a direct relationship between the main sources of a country's income and its firms' long-term investments. Third, if there is such an effect, does it apply in all the sectors. To the best of my knowledge, none of the existing studies have addressed these aspects.

3.4. Descriptions of the Data and Variables

3.4.1. The data

The chapter employs data on all listed firms across the GCC stock markets: Oman's Muscat Securities Market (MSM), Saudi Stock Exchange (Tadawul), Bahrain Bourse, Qatar Stock Exchange, Kuwait Stock Exchange, both UAE stock exchanges, Abu Dhabi Securities Exchange, and Dubai Financial Market.

As of 31 December 2014, 693 firms were listed across these markets. However, this thesis analyses only non-financial firms, because the determinants of their long-term

investments are different from those for financial firms. In other words, this chapter is concerned with net capital expenditures as a variable representing a firm's long-term investments, but financial firms do not have this type of investment. Their investments are all related to money markets commodities rather than tangible assets such as properties and machineries. Consequently, after excluding 258 banks, insurance firms, and financial investment firms, this chapter analyses a total of 435 firms listed across the GCC markets.

The chapter data are unbalanced panel data covering a 15-year period from 2000 to 2014 with 534 observations. The data were primarily gathered from the Bloomberg Terminal provided by Brunel University London, and in the case of missing data I refer to the firm's financial statements. The countries' macroeconomic data were obtained from the World Bank database and the website of the Organization of the Petroleum Exporting Countries.

3.4.2. The variables

Following Beatty et al. (1997), the chapter divides the examined variables into three categories: (1) firms' external financing factors; (2) firms' internal financing factors; and (3) macroeconomic factors. The first two categories will fulfil the objective of comparing the determinants of firms' long-term investments in developed and emerging markets. The third category will fulfil the objective of whether macroeconomic factors influence firms' long-term investments. The following sections provide a description and justification for each of the variables assessed in this chapter.

3.4.2.1. Firms' long-term investment

The long-term investment of a firm can be measured as the yearly variance in the firm's capital assets. The difference in the firm's capital assets represents the increase or decrease in capital expenditures. Therefore, the variable used in this chapter as the firm's long-term investment is net capital expenditure calculated as follows:

$$\mathrm{NCAPEX}_t = (\mathrm{CAPEX}_t - \mathrm{DEPRE}_t)/\mathrm{TA}_t$$

Here, NCAPEX represents the reported capital expenditures from the statement of cash flow at time *t*. Then we subtract DEPRE_t, which represents the reported

depreciation. All the accounting variables assessed in this chapter are scaled on TA_t, which represents the total assets reported in the balance sheets at year *t*.

3.4.2.2. Firms' external financing factors

The first category of variables correlated to net capital expenditures in this chapter comprises the firm's net equity activity, the ratio of financial leverage, and the firm's rate of return. All these variables are predicted to influence the firm's long-term investments as follows:

Net equity activity (NEA) is the difference between the firm's net equity issuing activity (NEIA) and net equity purchasing activity (NEPA):

$$\mathrm{NEA}_t = (\mathrm{NEIA}_t - \mathrm{NEPA}_t)/\mathrm{TA}_t$$

Hypothetically, if the firm at year *t* experienced a positive NEA, then the firm raised more funds than it spent on repurchasing equity, and vice versa. Hence, the firm's ability to invest will improve. However, it is worth mentioning at this stage that the observations of the NEPA of the full sample are excessively low compared to the NEIA. This caused a significant drop in the number of observations in the empirical model used in this chapter. Therefore, the empirical analysis excludes the NEPA and takes into account the NEIA, which is calculated as follows:

$$\mathrm{NEIA}_t = (\text{Number of shares issued}_t - \text{Number of treasury shares}_t)/\mathrm{TA}_t$$

Financial leverage (FLEVER) is the ratio of total debt to total equity:

$$\mathrm{FLEVER}_t = \frac{\text{Total debt}}{\text{Total equity}} \times 100$$

Hypothetically, an increase in the FLEVER ratio indicates that the firm have borrowed or raised debt more than raising capital through equity issuing. Moreover, the cost of borrowed funds is less than that raised through equity issuing. Hence, the firm's ability to invest will improve.

Firm rate of return (FROR) is the weighted average cost of capital (WACC):[3]

$$\mathrm{WACC}_t = \{\mathrm{Wd}_t\mathrm{Rd}_t(1-\mathrm{T})\} + (\mathrm{Wp}_t\mathrm{Rp}_t) + (\mathrm{We}_t\mathrm{Re}_t)$$

Hypothetically, the WACC indicates the minimum rate required for a firm's project to

[3] The WACC components are as follows:

- Wd_t: The proportion of debt that the firm holds at time *t*.
- Rd_t : The marginal cost of debt before tax at time *t*.
- T : The firm's marginal tax rate at time *t*.
- Wp_t: The proportion of preferred equity the firm holds at time *t*.
- Rp_t : The marginal cost of preferred equity at time *t*.
- We_t: The proportion of common equity that the firm holds at time *t*.
- Re_t : The marginal cost of common equity at time t.

have a positive net present value. Therefore, a constant increase in the rate of return must be accompanied by an increase in funds by issuing debt or equity. Hence, the firm's ability to invest will improve.

The above hypothetical relationships between the first category of variables and firms' net capital expenditures is mainly derived from trade-off theory (see Section 2.1). Trade-off theory argues for an optimal capital structure and the preference of debt financing over equity financing so that the firm benefits from tax shields and eventually enhances its value. Therefore, taking into account that both NEIA and FLEVER are a source of liquidity, but differ in terms of their associated cost, defined as FROR, must have an effect on the firm's ability to finance its long-term investments.

3.4.2.3. Firms' internal financing factors

The second category of variables that are correlated to firm's net capital expenditures comprises the firm's internal accounting measures. The most important variable is the firm's net income, because it is the most important source of internal financing, and an abundance of it creates substantial inflows of cash. In such a case, the firm generates an economic rent that will encourage management to expand its long-term investment to benefit from this rent (Beatty et al. 1997). However, this variable is excluded from the analysis, because it have a high correlation with other variables and its positive effect on firm's long-term investment is already clear and well documented in existing studies. Thus, instead of net income, this chapter assesses the return on common equity, cash dividends to common stockholders, free cash flow, and corporate tax.[4] All these variables are predicted to influence firm's net capital expenditures to a certain level as follows:

Return on common equity (ROCE) is a measure of a firm's profitability:

$$\mathrm{ROCE}_t = \frac{\text{Net income}_t}{\text{Average number of shareholders equity}_t} \times 100$$

Hypothetically, an increase in ROCE indicates an increase in the firm's profitability, in which case its ability to invest improves.

[4] Most of the studies mentioned in the literature review (Section 3.3) found a highly significant positive relationship between net income and net capital expenditures (e.g. Beatty et al., 1997; Welch and Wessels, 2000).

Cash dividends to common (CDIVC) is the dividends paid to common shareholders from the profits of the firm:

$$\text{CDIVC}_t = (\text{Net profit}_t \times \text{Percentage of dividends declared}_t)/\text{TA}_t$$

Hypothetically, an increase in dividends payments reduces the amount of retained earnings that the firm usually uses for the purpose of reinvestment, in which case its ability to invest declines.

Free cash flow (FCF) is the amount of cash remaining for the firm after it has spent on long-term investment such as property expansion:

$$\text{FCF}_t = (\text{Operating cash flow}_t - \text{Capital expenditures}_t)/\text{TA}_t$$

Hypothetically, an increase in FCF creates a surplus of cash. Hence, the firm's ability to invest improves.

Depreciation (DEPRE) is the allocated cost of a material asset over its useful life:

$$\text{DEPRE}_t = \frac{\text{Original cost of asset} - \text{Scrap value}}{\text{Estimated life of asset}} /\text{TA}_t$$

Beside its ability to spare cash due to tax purposes. Hypothetically, the accumulation of depreciation indicates a reduction in the life of assets, which eventually increases maintenance expenses or perhaps replacement expenses. In this case, the firm will eventually spend to acquire new assets. Hence, net capital expenditures increases.

Corporate income tax (Tax) is the tax expenses imposed on the annual profit generated by the firm:

$$\text{Tax}_t = (\text{Annual profit}_t \times \text{Percentage of corporate tax}_t)/\text{TA}_t$$

Hypothetically, an increase in the amount paid as corporate income tax reduces the net profit, which is the main source of reinvesting in capital assets. Hence, the firm's ability to invest will decline.

Change in sales (ΔSALES) is the growth in the firm's sales from one year to the next due to fluctuations in business activities:

$$\Delta\text{SALES}_t = (\text{Sales}_t - \text{Sales}_{t-1})/\text{TA}_t$$

Change in total assets (ΔTA) is the growth in the firm's total assets from one year to the next due to fluctuations in business activities:

$$\Delta\text{TA}_t = (\text{TA}_t - \text{TA}_{t-1})/\text{TA}_t$$

Both the change in sales and the change in total assets serve as control variables to account for growth in the firm's size.

The above hypothetical rationale for the relationships between the second categories of variables and firms' net capital expenditures is mainly derived from the pecking order and agency cost theories (see Section 2.1). Pecking order theory argues that firms should finance their investment with internally generated funds, mainly cash holdings created from retained earnings. If the cost of investment cannot be covered by the internally generated funds, then the firm should use debt financing from low- to high- risk debt, and equity financing should be the last resort. Similarly, agency cost theory argues that managers are motivated to hold more internally generated funds to retain control over the firm's investment decisions. By doing this, the managers are released from any obligations of external financing and released from giving information about the firm's investment strategy to the market.

Both these theories imply that internal financing variables can affect firm's investments, and hence existing studies discussed in the literature review (Section 3.3) had already accounted them. Therefore, this chapter only substitutes net income with return on common equity because both variables indicate a firm's level of profitability.

3.4.2.4. Macroeconomic factors

The primary objective in this chapter is to investigate the relationship between firms' net capital expenditures and not only the variables at the firm level described previously, but also the variables at the macroeconomic level. As mentioned in Section 2.2, the GCC countries depend heavily on revenues from hydrocarbon commodities to sustain their economies. Therefore, this chapter correlates the following three variables with firms' long-term investments:

Change in government expenditures (ΔGOVE) is the growth in government expenditures generated from budgetary oil revenues:

$$\Delta\text{GOVE} = (\text{GOVE}_t - \text{GOVE}_{t-1})/\text{GOVE}_{t-1}$$

This allows us to examine the influence of fiscal policies on firm's long-term investments, which are predicted to be a positive relationship. Hypothetically, high government spending should result in the creation of more national projects. Therefore, firms will start bidding to hold these projects and eventually invest more in

their assets to deliver those projects. Hence, their long-term investments increase parallel to the increase of government expenditures. This relationship has been discussed previously in the literature, e.g. Mohsin and Monmohan (1997) referred to the impact of both public investments and private investments on countries growth. They explained that public spending in infrastructural projects could raise the output of private sectors, which eventually benefits the economic growth. Similar discussion is found in the studies of (Hassan and Salim, 2011; Bahal et al. 2015). They argued that public expenditures my leads to increase private investment by providing public projects such as defiance, telecommunication, transportation and energy. Furthermore, these studies also predicted an inverse relationship between public spending and private investment based on the crowding out effect, because the high governments spending could cause an increase in the interest rates. Hence, firms will be withhold from investing in capital projects due to the high financing cost.

Change in dollar price of crude oil (ΔOP) is the growth in price caused by the fluctuation of the global supply and demand of crude oil:

$$\Delta \mathrm{OP} = (\mathrm{OP}_t - \mathrm{OP}_{t-1})/\mathrm{OP}_{t-1}$$

This allows us to examine the reaction of firm's long-term investments towered the change in the price of the main source of national income, which is predicted to be a positive relationship. Fluctuations in crude oil prices unsettle the currencies of the GCC markets. Several studies have documented the inverse relationship between the US dollar exchange rate and oil prices. For example, Fratzscher et al. (2014) found that a 10 percent increase in the price of crude oil leads to depreciation of the US dollar exchange rate by 0.28 percent. This relationship is critical to the GCC countries because their currencies, except Kuwait's, are pegged to the US dollar and their exports mainly consist of crude oil. Therefore, an appreciation of crude oil prices causes a parallel depreciation of the US and GCC currencies. Hence, such a scenario makes the prices of GCC firms exported goods and services more marketable, and eventually increase the firm's revenues, which enables them to investment in long-term assets.

Ratio of terms of trade (TOT) is the country's volume of exports divided by its imports:

$$\mathrm{TOT}_t = \frac{\text{Index of export price}}{\text{Index of import price}}$$

This allows us to examine the influence of trade on firm's long-term investments.

Hypothetically, an increase in the prices of exported goods and services indicates an increase in firms' business. The increase of business is associated with an increase in revenue, which eventually encourages firms to expand their operations by acquiring more assets. Similarly, this relationship has been discussed previously in the literature, e.g. Hassan and Salim (2011) argued that an increase in the ratio of terms of trade ratio could affect firms investments positively. Additionally, Seruvatu and Jayaraman (2001) supported this argument as their empirical results showed a significant influence of terms of trade on firms investments.

3.5. Empirical Methodology

This chapter employs a data set spanning a period of 15 years and consisting of 11 variables from 435 firms listed across the six GCC countries, besides three macroeconomic variables for the same period. Therefore, this chapter uses panel data, also known as longitudinal data. Analysis of this type of data involves examining the single effect of a group of variables that belong to several individuals across several places over a period of time. This is to deal with any heterogeneity or individual effect that may be observed (Park, 2011). In general, the models used to analyse panel data are pooled ordinary least squares (OLS) regression, the fixed-effects model (FEM), and the random-effects model (REM).

Pooled OLS regression is used when the individual effect of both cross-sectional and time do not exist. If an individual effect exists, then the FEM is used when the intercepts vary across groups or time; and the REM is used to explore the differences in error variance components across individual or time.[5] However, it would not be appropriate to decide on which model to use based on these descriptions, because each model is used depending on the nature of the panel data being studied, namely whether the data are balanced or unbalanced, whether they are short or long, and whether their structure is fixed or rotating (Park, 2011).

Therefore, to select the appropriate panel models, I used two empirical tests that are widely discussed in the literature. First, to choose between the FEM and the REM, I performed a Hausman test. The Hausman test null hypothesis is that the error term does not correlate with the examined variables (regressors), in which case the REM is the appropriate model to use. Second, to choose between the pooled OLS model and

[5] Refer to Baltagi (2013) for a detailed explanation of panel data models.

the REM, I performed a Breusch–Pagan Lagrange multiplier (LM) test. The LM test null hypothesis is that there is no significant difference across units or no panel effect, in which case pooled OLS is the appropriate model to use.

Lastly, based on the results obtained from the Hausman test and the LM test,[6] I estimate the following pooled OLS regression with robust standard errors to cope with the heteroscedasticity:

$$\begin{aligned}\mathrm{NCAPEX}_{it} = {} & \beta_0 + \beta_1 \mathrm{NEIA}_{it} + \beta_2 \mathrm{FLEVER}_{it} + \beta_3 \mathrm{FROR}_{it} + \beta_4 \mathrm{ROCE}_{it} + \beta_5 \mathrm{CDIVC}_{it} \\ & + \beta_6 \mathrm{FCF}_{it} + \beta_7 \mathrm{DEPRE}_{it} + \beta_8 \mathrm{TAX}_{it} + \beta_9 \Delta\mathrm{SALES}_{it} + \beta_{10} \Delta\mathrm{TA}_{it} \\ & + \beta_{11} \Delta\mathrm{GOVE}_{it} + \beta_{12} \Delta\mathrm{OP}_{it} + \beta_{13} \mathrm{TOT}_{it} + \varepsilon_{it}\end{aligned}$$

where ε_{it} is the error term, β is the coefficients of the independent variables, Δ indicates change, and the subscript it indicates the firm at a specific year. The following is a summary of the variables within the above model and their predicted relationships with net capital expenditures, as discussed in Section 3.4.2:

Symbol	Name	Definition	Predicted Relationship
NCAPEX	Net Capital Expenditure	$\mathrm{NCAPEX}_t/\mathrm{TA}_t$	N/A
NEIA	Net Equity Issuing Activity	$\mathrm{NEIA}_t/\mathrm{TA}_t$	+
FLEVER	Financial Leverage	FLEVER_t	+
FROR	Weighted Average Cost of Capital	WACC_t	+
ROCE	Return on Common Equity	ROCE_t	+
CDIVC	Cash Dividends to Common	$\mathrm{CDIVC}_t/\mathrm{TA}_t$	-
FCF	Free Cash Flow	$\mathrm{FCF}_t/\mathrm{TA}_t$	+
DEPRE	Depreciation	$\mathrm{DEPRE}_t/\mathrm{TA}_t$	+
TAX	Corporate Tax	$\mathrm{TAX}_t/\mathrm{TA}_t$	-
ΔSALES	Percentage Changes in Sales	$\Delta\mathrm{SALES}_t/\mathrm{TA}_t$	+
ΔTA	Percentage Change in Total Assets	$\Delta\mathrm{TA}_t/\mathrm{TA}_t$	+
ΔGOVE	Percentage Change in Government Expenditures	$\Delta\mathrm{GOVE}_t$	+
ΔOP	Percentage Change in Crude Oil Prices	$\Delta\mathrm{OGP}_t$	+
TOT	The Ratio of Terms of Trade	TOT_t	+

[6] The Hausman test resulted in a probability of 0.15, which is greater than 0.05, and hence the error terms do not correlate with the examined variables, and the REM is better than the FEM for the data set. The LM test resulted in a probability of 0.87, which is greater than 0.05, and hence there is no significant difference across units, and it is more appropriate to use pooled OLS.

3.6. Empirical Results and Discussion

3.6.1. Descriptive statistics and correlation analysis

Before discussing the previously mentioned regression results, this chapter proceeds by summarizing the data from Table 3.1, which consist of two panels. Panel (A) presents the descriptive statistics, and panel (B) presents the correlation coefficient matrix.

Panel (A) indicates low variation in all the variables examined in this chapter. Over the period considered, the sample firms show a moderate policy for their long-term investments. The average net capital expenditures paid by the sample firms were nearly 4 percent equivalent of their total assets, and the average rate of return they reached was nearly 7 percent. Similarly, the sample firms show a consistent level of growth, where the average yearly change in sales was nearly 5 percent and the average yearly change in total assets was nearly 6 percent. In terms of funds, the sample firms seemed to depend more on borrowed funds to expand their business, given an average of nearly 60 percent level of financial leverage compared with nearly 50 percent equity issuance. Thus, the descriptive results show that the overall investment strategies of the GCC firms during the period considered were preserved through steady investment growth.

Finally, I conducted a further analysis to investigate dependency between the variables examined in this chapter, specifically the pairwise correlation presented in panel (B) of Table 3.1. The results show a logical association among the tested variables in terms of negative and positive relationships. For example, net capital expenditures show a positive relationship to a firm's rate of return. If the firm's rate of return was high, then the firm had more liquidity for long-term investments. Similarly, the net equity issuing activity shows an inverse relationship to the financial leverage ratio. As the volume of net equity issuing increased, the level of borrowed debt decreased. In addition to determining relationships among the tested variables, this analysis helps in testing for collinearity problems prior to conducting the regression analysis. The results show that there is a relatively low correlation between all the variables.

Table 3.1: Descriptive Statistics and Correlation Matrix

Particulars	Investment	Firms' External Financing Factors			Firms' Internal Financing Factors							Macroeconomic Factors		
Panel A: Descriptive Statistics														
	NCAPEX	NEIA	FROR	FLEVER	ROCE	CDIVC	FCF	DEPRE	TAX	Δ SALES	Δ TA	Δ GOVE	Δ OP	TOT
Observations	3758	3991	4972	3922	4622	3262	4208	4528	1884	4658	4499	6525	6525	6525
Mean	0.0402	0.4969	6.6473	0.5823	10.7626	0.0859	0.0846	0.0284	0.0175	0.0543	0.0616	0.1153	0.1165	0.1136
Std. Dev.	0.0320	0.6392	1.7204	0.4750	8.0643	0.0624	0.0567	0.0177	0.0156	0.0686	0.0865	0.0554	0.1787	0.3214
Min	0.0062	0.0290	4.6363	0.0962	0.6390	0.0263	0.0221	0.0062	0.0014	-0.0223	-0.0462	-0.0467	-0.0905	0.0030
Max	0.0883	1.6337	9.2287	1.3273	21.776	0.1877	0.1696	0.0523	0.0407	0.1599	0.1838	0.1929	0.3673	8.8527
Panel B: Correlation Matrix														
NCAPEX	1.0000													
NEIA	0.1039	1.0000												
FROR	0.0466	-0.1859	1.0000											
FLEVER	0.0019	-0.2397	-0.3027	1.0000										
ROCE	0.2659	0.1071	0.0706	0.0126	1.0000									
CDIVC	-0.0008	-0.1226	0.2359	0.2440	0.3359	1.0000								
FCF	0.1958	0.1042	0.0335	-0.2680	-0.2507	-0.3370	1.0000							
DEPRE	0.3151	-0.1697	0.0560	-0.0294	0.0846	-0.1281	-0.1452	1.0000						
TAX	-0.1261	0.0560	-0.2691	-0.1226	-0.3459	-0.7129	0.2103	0.1104	1.0000					
Δ SALES	0.1846	-0.0163	0.1462	-0.0314	0.3069	0.1652	0.0053	-0.0046	-0.2726	1.0000				
Δ TA	0.2109	0.0768	0.0053	-0.0179	0.2597	-0.0694	0.2220	-0.1699	-0.0332	0.1644	1.0000			
Δ GOVE	0.0332	-0.1307	0.0483	0.0340	-0.1443	-0.0167	0.0061	0.0163	-0.0018	-0.0227	-0.2061	1.0000		
Δ OP	0.0782	0.0508	-0.0624	0.0331	0.1220	0.0616	-0.0916	0.0176	-0.0498	0.0540	0.0949	-0.6270	1.0000	
TOT	0.0568	0.0281	0.0595	-0.0773	0.0445	0.0728	-0.0496	0.0296	-0.0244	-0.0463	-0.0572	-0.0282	0.0429	1.0000

Notes: The table combines two statistical analyses. Panel (A) presents the descriptive statistics, namely, the number of observations, mean, standard deviation, and minimum and maximum value of the variables. Panel (B) presents the results of the pairwise correlation in a matrix format. The variables are categorized into three types discussed in section 3.4.2.

3.6.2. Results of the pooled OLS regression

The following discussion of results comprises three pooled OLS regressions. The first column of Table 3.2 presents the regression of the full sample firms, and the second and third columns present the regressions of firms that operate in the services and industrial sectors respectively. The regression analysis is designed in this manner for three reasons. First, it allows us to obtain the results of the full sample. Second, it allows us to test whether the end results hold constant when the sample is divided. In other words, it serves as a robustness check. Third, it provides us with further information about the differences between the determinants of long-term investments among firms in the services and industrial sectors.

The empirical results for the full sample (column 1) show that almost all the variables examined in this chapter affect the firms' long-term investments, but with different levels of influence. The first category of variables, which includes net equity issuing activity, firm rate of return, and financial leverage ratio, are all positively associated with net capital expenditures and statistically significant at the 5 percent level. These results indicate that an increase of 1 percent in a firm's net equity issuing activity, rate of return, and ratio of financial leverage might lead to an increase of 0.26, 0.19, and 0.56 percent respectively in the firm's long-term investments.

However, the second category of variables seem to contain variables that are highly significant and associated with the firm's long-term investments. Return on common equity, free cash flow, and depreciation are all positively highly significant at the 1 percent level with net capital expenditures. However, corporate tax is negatively highly significant at the 1 percent level. Both change in sales and change in total assets are positively associated with firm's long-term investments, but at the 5 percent level of significance. Nonetheless, the second category also contains dividends, which seem not to have any influence on GCC firms' long-term investments.

The third category, which includes change in government expenditures, change in crude oil prices, and the ratio of terms of trade, are also statistically significant and positively associated with long-term investments. However, the influence of terms of trade is clearly more significant (at the 5 percent level) to net capital expenditures compared with change in government expenditures and crude oil prices (at the 10 percent level of significance).

Hence, the overall results of the full sample regression suggest that internal financing factors are the most notable determinants of GCC firms' long-term investments, specifically, the return on common equity, the volume of free cash flow, the level of depreciation, and the level of corporate tax. These are followed by external financing factors, specifically, the volume of equity issuing, the percentage of rate of return, and the level of financial leverage. Moreover, macroeconomic factors have a notable influence on GCC firms' long-term investments.

Consequently, these results both support and contradict the findings of previous studies. For example, Beatty et al. (1997) found that net equity financing activity, dividend pay-outs, high cash levels, high depreciation, and high tax payments are all important determinants of US firms' long-term investments. Similarly, this chapter finds that all these variables are important determinants of GCC firms' long-term investments, except dividends. Welch and Wessels (2000) found that dividends are an important determinant of Canadian and Japanese firms' long-term investments, but not for US and European firms.

Hassan and Salim (2011) found that government expenditure and terms of trade negatively affect Bangladeshi firms' long-term investments. In contrast, this chapter finds that both these variables have a notable positive effect on GCC firms' long-term investments.

A possible reason for this difference is that Bangladeshi fiscal policy depends on several sources of income, the most important of which is corporate tax. Hence, the increase in government expenditures is the result of the high corporate tax imposed on firms, which eventually reduces the firms' ability to invest. This is not the case with the GCC fiscal policy, because it mainly depends on crude oil revenues, and corporate taxes comprise only a small percentage of its revenues. Furthermore, Hassan and Salim (2011) argued that the negative effect of terms of trade on Bangladeshi firms' long-term investments is due to an increase in the imports index. This indicates that these firms do not export their goods or services and hence they are discouraged from making further investments. This is not the case with the GCC terms of trade, because the GCC average exports index is nearly 11 times its imports index, as shown in the descriptive analysis (Table 3.1: Panel A).

Table 3.2 presents further results in columns 2 and 3 that provide information about the differences between long-term investment determinants among firms in the services and industrial sectors. The results also provide evidence of the structural validity or robustness of the estimated regression.

The regression of the services firms indicates almost identical results in terms of significance level to the full sample. The notable differences are: (1) levels of significance of return on common equity, tax, and change in total assets are lower than those of the full sample results; and (2) levels of significance of change in government expenditures and crude oil prices are higher than those of the full sample results.

On the other hand, the empirical results in column 3 of Table 3.2 show that the determinant of industrial firms' long-term investment differs slightly from that of the full sample. The notable differences are: (1) net equity issuing, firm's rate of return, and financial leverage ratio are not statistically significant to net capital expenditures; (2) cash dividends to common stockholders are now statistically significant to firms' long-term investments at the 10 percent level of significance; and (3) government expenditures are not statistically significant to industrial firms' long-term investments.

Thus, the results in columns 2 and 3 of Table 3.2 again support the evidence that internal financing factors, except dividends, are the most influential variables to GCC firms' long-term investments, followed by external financing factors and macroeconomic factors. This is in line with the hypotheses of pecking order and market timing theories, both of which suggest a preference for internally generated funds rather than external financing, as discussed at the end of Section 3.4.2.3.

Finally, the results also show that GCC industrial firms' long-term investments are influenced by only internal financing factors and macroeconomic factors, except government expenditures. Therefore, this chapter finds that, if the reserves of crude oil depleted, GCC industrial firms could be sustained, but not GCC services firms. The most probable reason for this is that the industrial firms are more exposed to foreign markets. These firms' long-term investments are influenced by changes in crude oil prices and fluctuations in trade, but government expenditures have no effect on their long-term investments. Consequently, to increase sustainability, the GCC economic authorities have to encourage the services firms to expand their business

into overseas markets. Such an action will facilitate the shift of GCC economies from hydrocarbon economies to open-market economies.

Table 3.2: Results of the Pooled OLS Regression

	Variables	Full Sample (1)	Services Sector (2)	Industrial Sector (3)
	Constant	0.0074 (0.325)	0.0018 (0.840)	0.0071 (0.449)
First Category	NEIA	0.0026 (0.001)**	0.0084 (0.012)**	0.0012 (0.649)
	FROR	0.0019 (0.012)**	0.0015 (0.016)**	0.0003 (0.774)
	FLEVER	0.0058 (0.048)**	0.0019 (0.037)**	0.0010 (0.803)
Second Category	ROCE	0.0008 (0.000)***	0.0006 (0.077)*	0.0003 (0.008)**
	CDIVC	-0.0146 (0.628)	-0.0266 (0.446)	-0.0852 (0.057)*
	FCF	0.0481 (0.000)***	0.2494 (0.000)***	0.0342 (0.000)***
	DEPRE	0.5173 (0.000)***	1.0425 (0.000)***	0.6527 (0.000)***
	TAX	-0.4178 (0.000)***	-0.3053 (0.019)**	-0.3292 (0.026)**
	Δ SALES	0.0331 (0.045)**	0.1008 (0.014)**	0.0346 (0.020)**
	Δ TA	0.0290 (0.002)**	0.0262 (0.052)*	0.0392 (0.022)**
Third Category	Δ GOVE	0.0496 (0.059)*	0.1102 (0.002)**	0.0308 (0.304)
	Δ OP	0.0157 (0.063)*	0.0311 (0.006)**	0.0183 (0.054)*
	TOT	0.0055 (0.004)**	0.1476 (0.013)**	0.1003 (0.012)**
	N	534	205	329
	F-test	21.93	37.09	14.74
	R^2	0.3382	0.5444	0.3362

Notes: The first column presents regression of the full sample firms, and the other two columns present regressions of the services and industrial firms. All regressions were run with robust standard errors, and the P-values are in parentheses below the coefficient estimates. ***, **, and * indicate significance levels of 1, 5, and 10 percent, respectively.

3.7. Conclusion

This chapter extends the existing literature on the determinants of firms' long-term investments in two dimensions: (1) by examining new markets, namely the GCC markets, and comparing them with existing findings; and (2) by examining the influence of new macroeconomic factors, namely government expenditures, crude oil

prices, and trade levels, on firms' long-term investments.

Hence, this chapter reveals significant findings for the literature in general and for the GCC countries in particular. For example, it is found that dividends pay-outs do not influence GCC firms' long-term investments, whereas this factor is found to be a significant determinant of Western firms' long-term investments. Moreover, this study is the first to find that return on common equity is a strong determinant of firms' long-term investments. It also finds that government expenditures, crude oil prices, and trade levels have a positive notable effect on GCC firms' long-term investments.

However, the influence is more severe on services firms than on industrial firms. This finding provides two indications for the GCC economic authorities. First, their efforts to diversify their economies have been successful, given that they currently have an industrial sector that does not depend on fiscal policies to be sustained. Second, the GCC economic authorities should provide more facilities to encourage their services sector to export their services rather than depending on local markets. Such an action will lead the GCC economies to abandon their dependence on oil and shift to the arena of open economies.

Finally, the main limitation in this chapter is the distortion of data. This issue prevents the use of dynamic models to assess the lag effect of the assessed factors on firms' long-term investments. Moreover, the distortion of data showed numerous outliers, which I dealt with by cleaning the data set by double-checking the figures with the firm's financial statements. After matching the odd figures with the financial statements and made sure it's the right figure, I then winsorized the data to the nearest lowest and highest value at 99 percent. This is to limit the extreme values from affecting the investigation-estimated model. Prior to winsoring the variables with observed outliers, I obtained a normal distribution chart of each variable and based on it the decision been made to winsorize the variables by the percentage mentioned earlier. Other methods of dealing with outliers have been considered as well, namely trimming. However, such method were excluded due to it's sever reduction of the model number of observations. Moreover, the scarcity of macroeconomic data prevents investigation of important variables predicted to affect firms' long-term investments. Therefore, future research should investigate other macroeconomics factors such as level of education and level of institutional effect. The lack of examining the effect of these factors leaves a space for further research.

Chapter 4: Determinants of Firms' Short-Term Investment Across the GCC Countries

4.1. Introduction

Capital management is an important element in any firm. Two forms of capital management work in parallel with each other: (1) management of long-term investment, which involves capital expenditures (discussed in Chapter 3); and (2) management of short-term investment, which involves working capital.

Working capital is vital to firms because it directly affects the firm's liquidity, and a close attention to it is required to avoid insolvency. Working capital is also an essential factor for finance managers because it keeps the business running through serving the short-term expenses and liabilities. Finance managers usually deal with two aspects of working capital: its requirements and its management. Hence, the essence of working capital is to guarantee that the firm has sufficient cash flow to conduct its daily operations without increasing its risk of defaulting on short-term debts (Preve and Sarria, 2010).

Consequently, the importance of working capital is widely recognized in the corporate world. For example, in 2014, Protiviti Consulting reported in their financial priorities survey that working capital management is a significant priority to chief financial officers (Bergholm, 2014). Moreover, well-known international accountancy firms provide special services worldwide on the subject of working capital and publish periodic reports about it. For example, PricewaterhouseCoopers publish an annual global working capital survey that provides industrial, geographical, and financial analysis relevant to working capital. However, despite wide recognition of this subject, few researchers have investigated its determinants.

Smith (1980) was first to note that working capital management is essential to firm's profitability, riskiness, and value. A few studies have examined how a decrease in the component of working capital increases firms' profits (Jose et al., 1996; Shin and Soenen, 1998; Deloof, 2003; Padachi, 2006; Raheman and Nasr, 2007; Afrifa and Padachi, 2016). The few recent studies that have investigated working capital determinants can be divided into two categories: (1) studies of the determinants of working capital management (e.g. Caballero et al., 2010; Manoori and Muhammad, 2012); and (2) studies of the determinants of working capital requirements (e.g. Nazir

and Afza, 2009; Gill, 2011; Fernandez-Corugedo et al., 2011; Akinlo, 2012; Abbadi and Abbadi., 2013; Bereźnicka, 2014).

However, for any observer, there is an apparent confusion in most of the latter category on measuring working capital requirement. For example, Gill (2011) followed the approach of Nazir and Afza (2009) by using the net operating working capital formula. On the other hand, Fernandez-Corugedo et al. (2011) used net working capital formula. Akinlo (2012) measured it by considering both the net working capital formula and the ratio of the cash conversion cycle. Later, Bereźnicka (2014) used four financial ratios illustrating the relationship of inventories, trade accounts receivable, trade accounts payable, and operating working capital to net turnover. Such differences in measuring the working capital requirement seem to have existed for decades, as pointed out by Kruiniger (1996, p. 118): "The various definitions of working capital that are encountered in the literature actually give a different picture of the liquidity of the firm".

Additionally, almost all the existing studies have examined the same determinants of working capital requirement at the firm level, such as the cash conversion cycle, financial leverage, profitability, and size. On the other hand, trade-off, pecking order, and agency cost theories imply that there are other determinants to firms' investments, namely net equity activities, firm rate of return, free cash flow, retained earnings, and depreciation. In addition, few studies have examined macroeconomic factors, namely GDP and real interest rate (Nazir and Afza, 2009; Fernandez-Corugedo et al., 2011; Akinlo, 2012; Abbadi and Abbadi, 2013). Both these macroeconomic factors could be assessed for economies that have multiple sources of income, but not necessarily for economies that have only a single source of income.

Therefore, firms' working capital requirements need to be defined to reach a clear view of its determinants. The findings of the determinants of working capital requirement also need to be extended at both the firm level and countries' macroeconomic level. Accordingly, the purpose of this chapter is to assess empirically the fundamental factors that are important in explaining working capital requirement in emerging markets, particularly the GCC markets.

Similar to Chapter 3, the factors examined in this chapter are divided into three categories: (1) firms' external financing factors; (2) firms' internal financing factors;

and (3) macroeconomic factors that are economically influential to GCC markets, namely, government oil revenues and terms of trade. As explained in Chapter 3, the oil-dependent GCC markets serve as a good model from which to generalize the present chapter's findings on oil depended economies.

Thus, this chapter documents the similar and different determinants of firms' working capital requirement between markets previously examined in the literature and GCC markets. It also attempts to provide an accurate way of measuring working capital requirements to obtain more robust evidence about its determinants. The chapter also provides new insights through exploring the influence of net equity issuing activities, firm rate of return, free cash flow, retained earnings, depreciation, government oil revenues, and levels of trade on firms' working capital requirements.

4.2. Definition of Working Capital Requirement

The term working capital comprises all the components of current assets and all the components of current liabilities recorded in a firm's balance sheet. These components are the firm's short-term investments and obligations. Thus, working capital is also called the firm's short-term investment.

Managers calculate net working capital as the difference between current assets and current liabilities. This is to indicate the liquidity that is available within the current assets to meet the short-term obligations recorded in the current liabilities. However, the components of current liabilities include interest-bearing liabilities, namely short-term loans. Therefore, the above formula does not reflect the operating liquidity needed for day-to-day commercial activities (Preve and Sarria, 2010, p. 16).

Day-to-day commercial activities are concerned with current assets and short-term operating liabilities. Current assets are inventories, accounts receivable, and cash received. Short-term operating liabilities are accounts payable and accruals. Therefore, calculating the difference between these components gives the working capital requirement, which answers the question of how much the firm needs for its daily operations (Preve and Sarria, 2010, p. 16). If the working capital requirement is positive, then the firm's current assets are not financed by short-term loans, in which case the firm finances its daily business activities through its working capital. On the other hand, if the working capital is negative, then the firm must finance its daily business activities through short-term loans.

However, studies on the determinants of working capital requirements disagree about how to define "requirements" and "management", except Nazir and Afza (2009) and Gill (2011), who calculate working capital requirements as the difference between current assets and current operating liabilities.

Both Fernandez-Corugedo et al. (2011) and Abbadi and Abbadi (2013) considered working capital requirements as the difference between current assets and current liabilities, whereas the definition of working capital requirements described earlier requires short-term loans to be excluded from the formula in order to determine the financial needs for operation. Akinlo (2012) measured working capital requirements by considering both the formula of current assets minus current liabilities as well as the cash conversion cycle formula. However, Akinlo's study clearly mixed between the two terms, because working capital management is concentrated on creating a time balance between the components of current assets and current liabilities to ensure that the firm has sufficient liquidity. On the other hand, working capital requirement is an actual number representing the financial needs for operation.

Bereźnicka (2014) considered working capital requirements through four financial ratios that illustrate the relationship of inventories, trade accounts receivable, trade accounts payable, and operating working capital to net turnover. Again, in Bereźnicka's study there is interchanging between the two terms. All of ratios represent working capital management rather than working capital requirements.

Finally, in line with the main objective of this chapter, the working capital requirement is measured as the difference between current assets and current operating liabilities. This measure provides more robust evidence of the determinants of working capital requirements, because it gives the actual financial needs of firms for daily operation without including interest-bearing liabilities, which are by definition already a strong determinant of working capital requirement.

4.3. Review of Empirical Studies of Determinants of Firms' Short-Term Investments

Because of the different measurements of working capital in the literature, this section first reviews studies of the determinants of working capital management, then studies of the determinants of working capital requirements, and finally other studies relevant to working capital as follows:

4.3.1. Studies of determinants of working capital management

Early research explored the determinants of working capital management in both developed and emerging markets. For example, Deloof (2003) examined the association between working capital management and profit for 1,009 large Belgian manufacturing firms from 1992 to 1996. Deloof measured working capital management using the cash conversion cycle and found that the cash conversion cycle has a significant negative effect on firms' profitability. A similar result was earlier found by Shin and Soenen (1998) with a sample of 58,985 firms from the Compustat database from 1975 to 1994. They found a notable inverse association between the lengths of firms' cash conversion cycle and their profitability. They also found that a shorter cash conversion cycle is associated with higher risk-adjusted stock returns.

Later, Caballero et al. (2010) examined the determinants of working capital management for a sample of 4,076 Spanish small and medium enterprises (SMEs) from 2001 to 2005. Again, they measured working capital management by using the cash conversion cycle. They found that SMEs strictly follow a targeted cash conversion cycle ratio to overcome any financial constraints that are created by the business environment they operate within. However, the length of the cash conversion cycle differs according to the firm's characteristics. For example, Caballero et al. found that older firms with high cash levels have a longer cash conversion cycle than firms with high financial leverage, growth opportunities, capital expenditures, and return on assets.

Following this, Gill and Biger (2013) examined the impact of corporate governance on working capital management efficiency. Their sample consisted of 180 industrial firms listed on the New York Stock Exchange from 2009 to 2011. However, unlike the previous studies, Gill and Biger measured working capital management by considering several factors independently. These factors were accounts receivable, inventories, accounts payable, cash conversion cycle, cash holdings, current ratio, and cash conversion efficiency. They examined each of these factors with four explanatory variables: CEO tenure, CEO duality, board of directors size, and audit committee size. Their analysis also controlled for firms' growth, size, performance, and international listing. They found that CEO duality and international listing improves the efficiency of managing the accounts receivable, accounts payable, and

inventory. They also found that CEO tenure and the firm's size and performance improve the cash conversion cycle.

Wasiuzzaman and Chettiar (2013) investigated the determinants of working capital investment for a sample of 192 Malaysian listed firms from 2000 to 2007. They measured working capital management as the difference between current assets and accruals. They found that the age and size of firms, the level of financial leverage, and sales growth are all important determinants of working capital investment. Similar to Gill and Biger (2013), they also did not find a relationship between the size of the board of directors and working capital management.

4.3.2. Studies of determinants of working capital requirements

Both developed and emerging markets were also the focus of early research into the determinants of working capital requirements. For example, Nazir and Afza (2009) sampled 132 manufacturing firms from 14 industries listed on Pakistan's Karachi Stock Exchange from 2004 to 2007. They measured working capital requirements as the difference between current assets and current operating liabilities. They found that the operating cycle, financial leverage, profitability, and firms' market value all significantly influence working capital requirements. Gill (2011), using a sample of 166 Canadian firms listed on the Toronto Stock Exchange from 2008 to 2010, found a similar result.

Fernandez-Corugedo et al. (2011) investigated how the reactions of macroeconomic factors (investment, inventories, labour, and inflation) to economic downturns are affected by a firm's need to raise working capital in the UK. They measured working capital requirements as the difference between current assets and current liabilities. They found that an increase in a firm's working capital requirements has a minimal effect on these variables during economic downturns.

Later, Akinlo (2012) used a sample of 66 Nigerian firms from 1997 to 2007 and measured working capital requirements as the difference between current assets and current liabilities, as well as by using the cash conversion cycle. Akinlo found that an increase in firms' growth, size, and operating cycle, and economic growth have a positive effect on working capital requirements. They also found that financial leverage has a negative effect on working capital requirements.

Abbadi and Abbadi (2013) conducted similar research. Their sample consisted of 11 non-financial firms listed on the Palestine Securities Exchange from 2004 to 2011. They measured working capital requirements as the difference between current assets and current liabilities. They found that the cash conversion cycle ratio, profitability, and operating cash flow positively influence working capital requirements. They also found that financial leverage and economic growth negatively influence working capital requirements.

Bereźnicka (2014) examined the determinants of firms' working capital requirements by considering external and internal factors across nine European Union countries (Austria, Belgium, Germany, Spain, France, Italy, the Netherlands, Poland, and Portugal). The sample consisted of 10,000 aggregate observations of firms from 13 industries and three group sizes for the period of 2000 to 2009. Bereźnicka measured working capital requirements by using four financial ratios that describe the relationship of inventories, trade accounts receivable, trade accounts payable, and operating working capital to net turnover. Bereźnicka found that the country factors are the most significant determinants of corporate working capital requirements, followed by sector and firm size, respectively.

4.3.3. Related studies on working capital

Other studies have investigated various aspects of working capital. For example, Fazzari and Petersen (1993) tested for financial constraints on fixed investment by stressing the role of working capital. Their sample consisted of US manufacturing firms from 1970 to 1979. They suggest that, as well as the general consideration of working capital as a source of funds for operations, it is also a source of liquidity used to facilitate fixed investment relative to cash flow shocks if firms face financial constraints. They found that net working capital is significantly sensitive to fluctuations of cash flow and has a negative coefficient to fixed investments. Similarly, Appuhami (2008) examined the effect of capital expenditures on working capital management, using a sample of 416 firms listed on the Thailand Stock Exchange from 2000 to 2005. They found that working capital is affected by both capital expenditures and operating cash flow.

Afza and Nazir (2007) examined the influence of aggressive and conservative working capital policies on firms' profitability and risk. Their samples consisted of

208 firms listed on Pakistan's Karachi Stock Exchange from 1998 to 2005. They found that firms that have an aggressive working capital policy have negative returns compared with firms that have a conservative working capital policy. However, their analysis did not find a significant relationship between firms' working capital policies and the firms' operating and financial risk.

The above discussed studies show that there is still a need to investigate the determinants of working capital requirements, for several reasons as follows: First, evidence of the determinants of working capital requirement may be unreliable because, in the context of working capital, there is confusion in the literature between the terms "requirement" and "management". Almost all studies of working capital management have measured it by using the cash conversion cycle, which is by definition an indication of the time required to transform a firm's short-term resources into cash. This has led to unified evidence of the determinants of working capital management. On the other hand, studies of the determinants of working capital requirements have used a different measurement. Hence, further investigation is needed to establish a correct definition.

Second, trade-off, pecking order, and agency cost theories propose important factors that have not yet been tested. These are net equity activities, firm rate of return, free cash flow, retained earnings, and depreciation. Third, the countries where these studies were conducted are developed markets and, where they are not, they depend on several sources of revenue to eventually sustain their economic growth. Accordingly, this chapter introduces new macroeconomic variables, namely government oil revenue and terms of trade, to assess their influence on GCC firms' working capital requirements.

Therefore, this chapter fills the gap in the literature by assessing GCC markets, which serve as a model for countries that are dependent on a single source of national income. This choice of market allows generalization of this chapter's findings for countries with a single source of national income, by addressing three main queries. First, does the existing finding relating to the determinants of working capital requirements hold in the GCC markets. Second, is there a direct relationship between the main sources of national income of a country and its firms' working capital requirements. Third, if there is such an effect, does it apply in all the sectors. To the best of my knowledge, no existing study has addressed these aspects.

4.4. Descriptions of the Data and Variables

4.4.1. The data

Similar to Chapter 3, this chapter employs data on all listed firms across the GCC stock markets: Oman's MSM, Saudi Stock Exchange (Tadawul), Bahrain Bourse, Qatar Stock Exchange, Kuwait Stock Exchange, both UAE stock exchanges, Abu Dhabi Securities Exchange, and Dubai Financial Market.

As of 31 December 2014, 693 firms were listed across these markets. However, as in Chapter 3, this chapter analyses only non-financial firms, because the determinants of their working capital requirements are different from those for financial firms. In other words, this chapter is concerned with working capital requirement as a variable representing firm's tangible short-term investments to sustain their operations, but financial firms do not use this type of investment. For example, banks' balance sheets differ from non-financial firms' balance sheets because they have different current assets and liabilities. The current liability of banks is difficult to determine, because they depend on money deposits as a source of capital, which can be withdrawn at any time. Moreover, their investments are all related to money markets commodities rather than tangible current assets such as inventories. Consequently, after excluding 258 banks, insurance firms, and financial investment firms, this chapter analyses a total of 435 firms listed across the GCC markets.

The chapter data are unbalanced panel data covering a 15-year period from 2000 to 2014 with 1,834 observations. As with the data in Chapter 3, the data in the present chapter were primarily gathered from the Bloomberg Terminal provided by Brunel University London, and in the case of missing data I refer to the firm's financial statements. The countries' macroeconomic data were obtained from the World Bank database.

4.4.2. The variables

Similar to Chapter 3, the examined variables are divided into three categories: (1) firms' external financing factors; (2) firms' internal financing factors; and (3) macroeconomic factors. The first two categories will fulfil the objective of comparing the results with those of previous studies of the determinants of firms' short-term investments. Besides, introducing new variables that are predicted to influence it. The third category will fulfil the objective of whether macroeconomic variables influence

firms' short-term investments. The following discussion provides the description and justification of the variables assessed by the chapter.

4.4.2.1. The Firms' short-term investment

As discussed in Section 4.2, the short-term investment required by a firm to conduct its day-to-day business is the difference between the firm's current assets and current operating liabilities, calculated as the working capital requirement:

$$\mathrm{WCR}_t = (\text{Current assets}_t - \text{Current operating liabilities}_t)/\mathrm{TA}_t$$

The components of current assets are inventories, accounts receivable, prepaid expenses, cash, and cash equivalents. The components of current operating liabilities are accounts payable, advance payments, tax expenses, and accruals. All the accounting variables used in this chapter are scaled on $\mathrm{TA_t}$, which represents the total assets reported in the balance sheet at year *t*.

4.4.2.2. Firms' external financing factors

The first category of variables correlated to working capital requirement in this chapter comprises the firm's net equity issuing activity (NEIA), the firm's rate of return (FROR), the ratio of financial leverage (FLEVER), and the firm's market value represented by the ratio of Tobin's q. All these variables are predicted to influence the firm's working capital requirement to a particular level and are defined in chapter 3 Section 3.4.2.2, except the ratio of Tobin's q, which represent the firms market values to its replacement cost of assets:

$$\text{Tobin's } \mathrm{q}_t = \frac{\text{Market value of the firms}_t}{\text{The replacement cost}_t} \times 100$$

Hypothetically, a firm with high market value has the ability to raise funds from lenders and investors. Therefore, firms that have multiple net present value projects will raise capital from the market in order to implement these projects. Hence, the cash position of the firm will improve.

As in Chapter 3, the above hypothetical relationships between the first category of variables and firms' working capital requirements are derived mainly from trade-off theory (see Section 2.1). Therefore, similar to the explanation in Section 3.4.2.2, NEIA, FLEVER and FROR must have an effect on the cash position of the firm. Moreover, Nazir and Afza (2009) and Gill (2011) have assessed firms' market value

based on the argument that an increase in firms' market value reflects a high stock performance, which is a cause of efficient working capital management.

4.4.2.3. Firms' internal financing factors

The second category of variables that are correlated to firm's working capital requirement in this chapter comprises the cash conversion cycle, free cash flow, net capital expenditures, retained earnings, depreciation, and return on assets. All these variables are predicted to influence the firm's working capital requirements to a particular level as follows:

Cash conversion cycle (CCC)[7] is the amount of time that the firm takes to convert its resources, namely inventories and receivables, into cash flow:

$$\mathrm{CCC}_t = (\mathrm{DIO}_t + \mathrm{ACP}_t - \mathrm{DPO}_t)$$

Hypothetically, an increase in CCC will cause a delay in cash inflow, which will negatively affect the cash position of the firm.

Free cash flow (FCF) is defined in Section 3.4.2.3, and included in this chapter because, hypothetically, an increase in FCF creates a surplus of cash. Hence, the cash position of the firm will improve.

Net capital expenditures (NCAPEX)[8] is defined in Section 3.4.2.1, and included in this chapter because, hypothetically, an increase in NCAPEX indicates that the firm expanded its assets for the purpose of long-term investment. The expansion of assets will be associated with an increase in the day-to-day business expenses. In this case, it will negatively affect the cash position of the firm. Furthermore, due to the argument which implies that the effect of long term investments on any variables should be based on its past results. I performed a separate model that takes into account a one year lag of NCAPEX and the results obtained were similar to the model with normal NCAPEX. Similar actions were made with other accounting variables, such as retained earnings and the results were the same. Hence, this investigation estimated and reported the actual values of the independent variables, and a further explanation of not including the lags is stated later in the limitation of this chapter.

[7] The CCC components are as follows:
- DIO_t: the days inventory outstanding at time *t*
- ACP_t: the average collection period at time *t*
- DPO_t: the days payable outstanding at time *t*

[8] This chapter takes into account the NCAPEX as a source of internal information for spending on long-term investments and not an internal source of finance.

Retained earnings (RE) are the firm's net profit that is not allocated to be distributed as dividends, but rather to be reinvested or to finance the firm's operations:

$$\mathrm{RE}_t = (\text{Retained earnings}_{t-1} + \text{Net income}_t - \text{Dividends}_t)/\mathrm{TA}_t$$

Hypothetically, an increase in RE will strengthen the cash position of the firm. Therefore, its cash position will improve.

Depreciation (DEPRE) is also defined and included in this chapter for the same reasons mentioned in Section 3.4.2.3. However, the expected influence of this factor is expected to be earthier negative or positive, because an accumulation of depreciation increases the maintenance expenses, which eventually negatively affect the cash position of the firm. On the other hand, DEPRE indicates the firm's ability to spare cash by deducting it from net profit for tax purposes; hence, the effect of depreciation may be positive.

Return on Asset (ROA) is the ratio of the firm's profitability to its total assets:

$$\mathrm{ROA}_t = \frac{\text{Net income}_t}{\text{Total assets}_t} \times 100$$

Hypothetically, an increase in the ROA ratio indicates that the firm generated more profit out of its assets. Therefore, an increase in profit will strengthen the cash position of the firm.

Change in Sales (ΔSALES) and Change in Total Assets (*ΔTA)* are defined in Section 3.4.2.3. Both of these serve as control variables to account for growth in the firm's size. However, growth in sales is predicted to have a positive influence on firm's short-term investment because of the increase in income associated with it. On the other hand, growth of assets is predicted to have a negative effect on firm's short-term investment because of the increase in expenses associated with it.

As in Chapter 3, the above-mentioned hypothetical rationale for the relationships between the second categories of variables and firms' working capital requirements, except NCAPEX, is derived mainly from pecking order theory and agency cost theory (see Section 2.1 and Section 3.4.2.3). Both these theories imply that internal financing variables can affect firms' investments, and hence existing studies discussed in the literature review (Section 4.3) already account for them, but overlook important once namely the FCF, RE, and DEPRE, which are accounted for in this chapter. Moreover, the hypothetical rationale for the relationship between NCAPEX and working capital

requirements is based on Fazzari and Petersen's (1993) argument that, during capital rationing, firms tend to reduce the amount of working capital to sustain financing fixed investments.

4.4.2.4. Macroeconomic factors

As mentioned in Section 2.2, the GCC countries depend heavily on revenues from hydrocarbon commodities to sustain their economies. Therefore, this chapter correlates the following two variables to the firm's working capital requirements:

Change in government oil revenues (ΔGOVR) is the change in government budgetary revenue from one year to the next because of fluctuations in national economies:

$$\Delta\mathrm{GOVR}_{t} = (\mathrm{GOVR}_{t} - \mathrm{GOVR}_{t-1})/\mathrm{GOVR}_{t-1}$$

Hypothetically, high government revenue should result in increasing liquidity in the economy. Therefore, interest rates will decrease, and firms will borrow more easily to finance their working capital requirements. However, data on government budgetary oil revenues are not available for some GCC countries. Therefore, I use oil rents data from the World Bank database. The oil rent is the difference between the value of crude oil at world prices and the total production costs.

Term of Trade (TOT) is defined in Section 3.4.2.4. Here, it allows us to examine the influence of trade on firm's short-term investments. Hypothetically, an increase in the price of exported goods and services will lead to increase the production of firms and eventually increasing the sales volumes. In which case the firm's cash position is strengthens.

4.5. Empirical Methodology

This chapter employs a data set spanning a period of 15 years and consisting of 12 variables from 435 firms listed across the six GCC countries, besides two macroeconomic variables for the same period. Therefore, the type of data employed by this chapter is similar to chapter 3. Hence, I also used the Hausman test and the Breusch–Pagan LM test to select the appropriate panel models to apply for the same reasons given in Section 3.5. Therefore, based on the results of these tests,[9] I estimate the following pooled OLS regression with robust standard errors to cope with the heteroscedasticity:

[9] The Hausman test resulted in a probability of 0.37, which is greater than 0.05, and hence the error terms do not correlate with the examined variables, and the REM is better than the FEM for the data set. The LM test resulted in a probability of 0.903, which is greater than 0.05, and hence there is no significant difference across units, and it is more appropriate to use pooled OLS.

$$\mathrm{WCR}_{it} = \beta_0 + \beta_1 \mathrm{NEIA}_{it} + \beta_2 \mathrm{FROR}_{it} + \beta_3 \mathrm{FLEVER}_{it} + \beta_4 \mathrm{TOBINQ}_{it} + \beta_5 \mathrm{CCC}_{it} + \beta_6 \mathrm{FCF}_{it} + \beta_7 \mathrm{NCAPEX}_{it} + \beta_8 \mathrm{RE}_{it} + \beta_9 \mathrm{DEPRE}_{it} + \beta_{10} \mathrm{ROA}_{it} + \beta_{11} \Delta\mathrm{SALES}_{it} + \beta_{12} \Delta\mathrm{TA}_{it} + \beta_{13} \Delta\mathrm{GOVR}_{it} + \beta_{14} \mathrm{TOT}_{it} + \varepsilon_{it}$$

where ε_{it} is the error term, β are the coefficients of the independent variables, Δ indicates change, and the subscript it indicates the firm at a specific year. The following is a summary of the variables within the above model and their predicted relationships with working capital requirements, as discussed in Section 4.4.2:

Symbol	Name	Definition	Predicted Relationship
WCR	Working Capital Requirement	WCR_t/TA_t	N/A
NEIA	Net Equity Issuing Activity	$NEIA_t/TA_t$	+
FROR	Weighted Average Cost of Capital	$WACC_t$	+
FLEVER	Financial Leverage	$FLEVER_t$	+
TOBINQ	Ratio of the Market Value of Firm	$TOBINQ_t$	+
CCC	Cash Conversion Cycle	CCC_t	-
FCF	Free Cash Flow	FCF_t/TA_t	+
NCAPEX	Net Capital Expenditures	$NCAPEX_t/TA_t$	-
RE	Retained Earnings	RE_t/TA_t	+
DEPRE	Depreciation	$DEPRE_t/TA_t$	-/+
ROA	Returned on Assets	ROA_t/TA_t	+
ΔSALES	Percentage Changes in Sales	$\Delta SALES_t/TA_t$	+
ΔTA	Percentage Change in Total Assets	$\Delta TA_t/TA_t$	-
ΔGOVR	Percentage Change in Government Oil Revenue	$\Delta GOVR_t$	+
TOT	The Ratio of Terms of Trade	TOT_t	+

4.6. Empirical Results and Discussion

4.6.1. Descriptive statistics and correlation analysis

Table 4.1 presents the descriptive statistics and the correlation coefficient matrix for the data. Panel (A) indicates low variation in all the variables examined in this chapter. The mean value of working capital requirement represents almost 14 percent of the total assets of the sample firms, which is a normal proportion of the firms' sizes. Moreover, the results show a positive and a negative working capital requirement, which implies that the sample consists of firms with a conservative and an aggressive working capital policy, respectively. A conservative policy ensures that the components of current assets, particularly cash, are greater than the components of current liabilities. This is to minimize any risk due to fluctuation in business activities. On the other hand, an aggressive policy motivates the firms to maintain minimal investments in current assets compared with current liabilities. This aggressive policy

enforces a high turnover in inventories which must be financed through the components of current liabilities. Therefore, a firm that implements an aggressive policy experiences constant negative working capital, and hence there is a constant need for short-term financing.

Furthermore, there are no abnormal results with regards to the first category of variables examined by the chapter. For example, the firm rate of return is within the range of 4.6 and 9.2 percent, and Tobin's q ratio is almost (1:2). Therefore, the sample firms have a conservative investment policy, and their market values are reasonably priced.

Moreover, the results may imply that there are firms with excessive net equity issuing and financial leveraged, because the maximum range of both variables are nearly 160 and 130 percent of the total assets. Therefore, I reinvestigated these variables and found that these are individual cases for new starting firms. Their initial investment is funded through an excessive issue of equity or debt. Evidence of this is the mean value, where the total sample has almost 50 and 58 percent of equity issuing and financial leverage, respectively.

Similarly, regarding the second and third categories of variables examined in this chapter, none of the results are abnormal, except for retained earnings, where the result shows that the minimum rang start from a negative value. Therefore, I reinvestigated this variable and found that some firms have negative retained earnings due to accumulated losses during specific years.

Finally, as in Chapter 3, I conducted a further analysis to investigate dependency between the variables examined in this chapter, specifically the pairwise correlation presented in panel (B) of Table 4.1. The results show a logical association among the tested variables in terms of negative and positive relationships. For example, working capital requirement has an inverse relationship to the cash conversion cycle. An increase in the cash conversion cycle creates a shortage of cash inflow, and hence creates a negative working capital requirement. Similarly, working capital requirement has an inverse relationship to net capital expenditures. This is because of the increase in day-to-day operations associated with an expansion in investment. In addition to determining relationships among the tested variables, this analysis helps in testing for collinearity problems. Overall, the results show that there is a relatively low correlation between all the variables.

Table 4.1: Descriptive Statistics and Correlation Matrix

Particulars	Investment	Firms' External Financing Factors				Firms' Internal Financing Factors								Macroeconomic Factors	
	Panel A: Descriptive Statistics														
	WCR	**NEIA**	**FROR**	**FLEVER**	**TOBINQ**	**CCC**	**FCF**	**NCAPEX**	**RE**	**DEPRE**	**ROA**	**Δ SALES**	**Δ TA**	**Δ GOVR**	**TOT**
Observations	4350	3991	4976	3922	4402	3571	4208	3758	5038	4528	4746	4658	4499	6525	6525
Mean	0.1418	0.4969	6.6512	0.5823	1.3808	0.3461	0.0846	0.0402	0.1884	0.0284	6.0412	0.0543	0.0616	37.6429	0.1136
Std. Dev.	0.1312	0.6392	1.7232	0.4750	0.4098	2.6287	0.0567	0.0320	0.1530	0.0177	4.9565	0.0686	0.0865	8.4678	0.3214
Min	-0.0172	0.0290	4.6375	0.0962	0.9174	8.5366	0.0221	0.0062	-0.0071	0.0062	-0.0138	-0.0223	-0.0462	25.9668	0.0030
Max	0.3255	1.6337	9.2366	1.3273	1.9884	77.5155	0.1696	0.0883	0.4001	0.0523	13.0276	0.1599	0.1838	48.8302	8.8527
	Panel B: Correlation Matrix														
NWCI	1.0000														
NEIA	0.0588	1.0000													
FROR	0.0786	-0.1150	1.0000												
FLEVER	0.2762	0.0134	0.0918	1.0000											
TOBINQ	0.1428	-0.1528	0.0923	0.1344	1.0000										
CCC	-0.2131	-0.0111	-0.0116	-0.0295	0.0376	1.0000									
FCF	0.1245	0.1026	-0.0572	-0.0027	0.0820	-0.0109	1.0000								
NCAPEX	-0.1088	-0.0445	0.0062	0.0486	0.1586	0.1231	0.1645	1.0000							
RE	0.2311	-0.2064	0.0670	0.3816	0.1511	0.0220	0.0274	0.0741	1.0000						
DEPRE	-0.0879	0.1288	-0.0398	-0.0858	0.1386	0.1497	0.1216	0.1497	-0.0620	1.0000					
ROA	0.3164	-0.1540	0.0569	0.3222	0.3971	0.0777	0.1613	0.1560	0.5417	-0.0171	1.0000				
Δ SALES	0.1430	-0.0153	-0.0132	0.0680	0.1780	0.0497	0.1568	0.1509	0.0440	0.0343	0.2772	1.0000			
Δ TA	0.0872	-0.1119	0.0465	0.0571	0.1530	0.0408	0.0522	0.2619	0.1011	-0.1613	0.3792	0.3859	1.0000		
Δ GOVR	0.0369	0.0150	0.0318	0.4305	-0.3034	-0.0786	-0.1991	-0.0278	0.0336	-0.1155	-0.0984	-0.1193	-0.0173	1.0000	
TOT	0.0548	0.0794	-0.0153	0.0379	-0.0204	0.0314	-0.0301	0.0125	0.0327	0.0415	0.0416	0.0137	0.0099	-0.0093	1.0000

Notes: The table combines two statistical analyses. Panel (A) presents the descriptive statistics, namely the number of observations, mean, standard deviation, and minimum and maximum value of the variables. Panel (B) presents the results of the pairwise correlation in a matrix format. The variables are categorized into the three types assessed in Chapter 4.

4.6.2. Results of the pooled OLS regression

As in Chapter 3, I performed three pooled OLS regressions (Table 4.2). Section 3.6.2 explains the choice of design of this regression analysis. This design also provides further information about the differences between the determinants of working capital requirements among firms in the services and industrial sectors.

The empirical results for the full sample (presented in column 1) shows that almost all the variables assessed in this chapter affect the GCC firms' working capital requirements, but with different levels of influence. The first category of variables, which includes net equity issuing activity, firm rate of return, financial leverage ratio, and the ratio of Tobin's q, are all positively associated with working capital requirement. However, net equity issuing activity and financial leverage ratio are highly statistically significant at the 1 percent level, compared with firm rate of return and the ratio of Tobin's q at the 5 percent level. These results are in line with this chapter's hypothetical rationale for the predicted relationships between working capital requirement and external financing factors (Section 4.4.2.2).

However, in terms of the relationship between financial leverage ratio and working capital requirement, the results contradict the findings of Nazir and Afza (2009), Akinlo (2012), and Abbadi and Abbadi (2013), who found a negative relationship between these variables, but the present results are in line with the findings of Gill (2011). Gill's argued that the positive relationship may be due to the difference in lending polices across countries. For example, Canadian lenders require firms before lending to have reasonable cash levels to ensure that the firms are able to meet the yearly liabilities instalments. Hence, those firms with a conservative working capital policy already hold a good cash position, and by borrowing funds, their cash position increases further. This is a logical reason for the positive relationship between these two variables, because the increase in debt either is associated with a high cash level that enabled the firm to borrow, or creates cash inflow from the investment made by the borrowed funds.

Furthermore, in terms of the relationship between firm value (represented by Tobin's q) and working capital requirement, the results contradict the findings of Gill (2011), who found a negative relationship between the tested variables, but did not provide any explanation for this relationship. However, the present results are in line with the

findings of Nazir and Afza (2009), who found a positive relationship between the tested variables. They argued that investors prefer to invest in firms with positive working capital requirements. This is to ensure that the firm is able to meet its liabilities through a high working capital ratio. Therefore, to meet investors' expectations, managers will ensure that there is an increase in positive working capital requirement in parallel with an increase in the firm's market value.

However, my interpretation of the positive relationship between firm value and working capital requirements is different from that of Nazir and Afza (2009). Investors are concerned with the market valuation of the firm for trading purposes, in the sense that, if the firm's market value is undervalued, then the investors will buy to benefit from the gap in pricing, and vice versa. Therefore, the rationale behind a positive relationship is driven by the idea that an increase in the firm's market value gives the firm more credentials in terms of growth and profitability. Such credentials allow the firm to raise capital through debt or equity issuing. Then, eventually, cash inflow is generated, and the positive working capital requirement increases.

Moving forward, almost all of the second category variables are highly significant and associated with working capital requirement, except depreciation and firm size represented by change in total assets. The cash conversion cycle, free cash flow, net capital expenditures, return on assets, and growth of sales are all highly statistically significant at the 1 percent level. Retained earnings are also statistically significant, but at the 5 percent level. These results are in line with this chapter's hypothetical rationale for the predicted relationships between working capital requirement and internal financing factors. Besides, some of the results are in line with existing findings, whereas some are not.

For example, in terms of the relationship between working capital requirement and the cash conversion cycle, the results contradict the findings of Gill (2011), who found a positive relationship between these variables. Logically, an increase in the cash conversion cycle creates a shortage of cash inflow, which negatively affects the firm's working capital requirement. Hence, the results in this chapter are more robust in this regards.

	Variables	Full Sample (1)	Services Sector (2)	Industrial Sector (3)
	Constant	0.0787 (0.000)	0.0426 (0.030)	0.1185 (0.000)
First Category	NEIA	0.0077 (0.000)***	0.0067 (0.005)**	0.0187 (0.035)**
	FROR	0.0007 (0.014)**	0.0006 (0.000)***	0.0032 (0.013)**
	FLEVER	0.010 (0.000)***	0.0084 (0.061)*	0.0327 (0.000)***
	TOBINQ	0.0211 (0.007)**	0.0524 (0.000)***	0.0112 (0.025)**
Second Category	CCC	-0.0265 (0.000)***	-0.0232 (0.000)***	-0.0274 (0.000)***
	FCF	0.0920 (0.000)***	0.1548 (0.011)**	0.1448 (0.104)
	NCAPEX	-0.2452 (0.000)***	-0.2927 (0.000)***	-0.2795 (0.000)***
	RE	0.0556 (0.016)**	0.0045 (0.898)	0.0736 (0.096)*
	DEPRE	-0.3452 (0.0370)	-0.4458 (0.061)*	-0.1992 (0.412)
	ROA	0.0031 (0.000)***	0.0028 (0.000)***	0.0058 (0.000)***
	Δ SALES	0.1619 (0.000)***	0.2123 (0.007)**	0.2578 (0.001)**
	Δ TA	-0.0078 (0.692)	-0.0328 (0.237)	-0.0262 (0.470)
Third Category	Δ GOVR	0.0009 (0.028)**	0.0022 (0.000)***	0.0008 (0.069)*
	TOT	0.0163 (0.068)*	0.0305 (0.003)**	0.0022 (0.963)
	N	1834	738	1096
	F-test	39.51	24.34	27.6
	R^2	0.2392	0.234	0.3721

Table 4.2: Results of the Pooled OLS Regression

Notes: The first column presents regression of the full sample firms, and the other two columns present regressions of the services and industrial firms. All regressions were run with robust standard errors, and the P-values are in parentheses below the coefficient estimates. ***, **, and * indicate significance levels of 1, 5, and 10 percent, respectively.

Moreover, In terms of the relationship between net capital expenditures and working capital requirement, the results are in line with the findings of Fazzari and Petersen (1993), who found that working capital investment is significantly sensitive to fluctuations in cash flow and it has a negative coefficient to fixed investments. In terms of the relationship between return on assets and working capital requirement, the results are in line with the findings of Abbadi and Abbadi (2013), who found a

positive relationship between these variables. Similarly, in terms of the relationship between sales growth and working capital requirement, the results are in line with the findings of Gill (2011), who found a positive relationship between these variables.

Moving forward, the third category, which includes government oil revenue and the ratio of terms of trade, are also statistically significant and positively associated with working capital requirement. However, the influence of government oil revenue is clearly more significant to GCC firms' short-term investments, at the 5 percent level, than terms of trade, which is at the 10 percent level of significance.

Hence, the overall results of the full sample regression indicate that both external and internal financing factors are strong determinants of GCC firms' short-term investment. Moreover, macroeconomic factors have a notable influence. Furthermore, the chapter presents further results that provide information on differences in the working capital requirement determinants between firms in the services and industrial sectors (Table 4.2, column 2 and column 3, respectively). The results also provide evidence of the structural validity or robustness of the estimated regression.

The service sector firms (column 2) show almost the same results in terms of significance level as the full sample regression (column 1). However, the effect of financial leverage on working capital requirement becomes minimal, with 10 percent level of significance, compared with the 1 percent level of significance in the full sample regression. Moreover, the effect of retained earnings becomes insignificant to working capital requirement, compared with the 5 percent level of significance in the full sample regression. The most probable explanation for this difference is that the amount raised through debt and the amount of retained earnings are used by service-sector firms for other non-operational expenses such as advertising and marketing expenses. A further notable difference is that the working capital requirement of the service sector firms is highly sensitive to macroeconomic factors compared with the full sample regression, particularly government revenues at the 1 percent level of significance compared with the 5 percent level of significance for the full sample regression. Moreover, the terms of trade reached the 5 percent level of significance compared with the 10 percent level of significance for the full sample regression.

On the other hand, the determinants of working capital requirements of the industrial firms (column 3) differ from the full sample. The notable differences are: (1) free cash

flow is not statistically significant to firms' working capital requirements; (2) the effect of retained earnings on working capital requirements is less than for the full sample regression; and (3) the effect of macroeconomic factors almost disappears, except in the case of government revenues, which are statistically significant at the 10 percent level compared with the 5 percent level of significance for the full sample regression.

Thus, the results for the services and industrial sectors (columns 2 and 3) indicate that external financing variables are the most influential variables to GCC listed firms' short-term investments, followed by both internal financing variables and macroeconomic variables. This contradicts the pecking order and market timing theories, both of which suggest a preference for internally generated funds rather than external financing, as discussed at the end of Section 3.4.2.3 and Section 4.4.2.3. However, the results also show that the working capital requirement of GCC service sector firms is influenced more by government revenue and terms of trade compared with GCC industrial sector firms. The most probable reasons are that service sector firms are highly reliant on bank borrowing and they lack exposure to foreign markets. The volatility of government oil revenues results in volatility of the interest rates of short-term loans, and hence affects the financing of working capital. Moreover, the services firms' lack of exposure to foreign markets makes them dependent on the local market, which is not necessarily profitable. Hence, the lower profitability weakens the firms' cash position, which eventually weakens the working capital requirements.

4.7. Conclusion

This chapter extends the existing literature on the determinants of firms' short-term investment in three dimensions: (1) by examining new markets, namely the GCC markets, and comparing them with existing findings; (2) by establishing a correct measure of a firm's working capital requirements, which in the existing literature is confused with other working capital terms, namely working capital management and net working capital; and (3) by examining new variables at the firm level and macroeconomic level, namely net equity issuing activities, firm rate of return, free cash flow, retained earnings, depreciation, government oil revenue, and terms of trade.

Hence, this chapter reveals significant findings for the literature in general and for GCC countries in particular. For example, it is found that financial leverage is significant and positively associated with a GCC firm's working capital requirement. On the other hand, it is found to be significant and negatively associated with the working capital requirement of firms operating in other markets, namely Pakistan, Nigeria, and Palestine. Moreover, this chapter reveals that the cash conversion cycle is significant and negatively associated with working capital requirement. On the other hand, it is found to be significant and positively associated with the working capital requirement of firms operating in Canada.

Furthermore, this chapter finds new determinants of firms' working capital requirements at both the firm level and the macroeconomic level. These are net equity issuing activity, firm rate of return, free cash flow, net capital expenditures, retained earnings, government revenues, and terms of trade. All of these are determinants of GCC firms' working capital requirement. However, their level of influence differs slightly according to the sector. More precisely, this chapter finds that the impact of firm's external and internal financing variables on working capital requirement is more notable than the impact of the macroeconomic variables. The influence of government oil revenue and terms of trade is more severe on services firms than on industrial firms.

This finding provides two indications for the GCC economic authorities. First, their efforts to diversify their economies have been successful, given that they now have an industrial sector that is not affected by fluctuations in national income. Second, they should provide their service sector with more lending facilities that are not affected by fluctuations in the national economy. They should also provide more exporting facilities to encourage services firms to export their services rather than depending on the domestic market. This action will lead the GCC economies to abandon their dependence on oil and shift to the arena of open economies.

Similar to Chapter 3, the main limitation of this chapter is the distortion of data. This issue prevents the use of dynamic models to assess the lag effect of the assessed factors on firms' short-term investments. Moreover, the distortion of data showed numerous outliers, which I dealt with by cleaning the data set by double-checking the figures with the firm's financial statements. After matching the odd figures with the financial statements and made sure it's the right figure, I then winsorized the data to

the nearest lowest and highest value at 98 percent. This is to limit the extreme values from affecting the investigation-estimated model. Prior to winsoring the variables with observed outliers, I obtained a normal distribution chart of each variable and based on it the decision been made to winsorize the variables by the percentage mentioned earlier. Other methods of dealing with outliers have been considered as well, namely trimming. However, such method were excluded due to it's sever reduction of the model number of observations. Moreover, the scarcity of macroeconomic data prevents investigation of important variables predicted to affect firms' short-term investments. Therefore, future research should investigate other macroeconomics factors such as level of education and level of institutional effect. The lack of examining the effect of these factors leaves a space for further research.

Chapter 5: An Investigation of Capital Budgeting Practices: Evidence from the Sultanate of Oman

5.1. Introduction

The size of the global corporate investments accumulated to 1.23 trillion US dollars (UNCTAD, 2015). No wonder such a volume of strategic investments drives the importance of capital budgeting practices described in Section 2.1. Without these practices, investment decisions would be random and based on individual choices. Consequently, for the last six decades this topic has attracted the interest of both the academic and the business community. However, most existing studies on this subject have focused on developed markets such as the US, and few studies have explored emerging or frontier markets. Moreover, most existing studies have focused on the selection stage, and few have explored the other stages of capital budgeting practices.

Therefore, this chapter investigates capital budgeting practices in a frontier market and explores the possible factors affecting the use of these practices. This aim is motivated by the idea that investigating different markets can lead to new information about the use of capital budgeting practices. This idea has been stressed by past studies such as Brounen et al (2004) and Baker et al (2009). For example, Brounen et al. (2004) found that capital budgeting practices in Europe tend to vary from one country to another. Similarly, Baker et al. (2009) found that corporate finance practices are affected by the variances exists between US and Canadian firms in terms of size and ownership structure.

In this context, this chapter comprehensively investigates capital budgeting practices in the Omani market. This market is chosen based on three reasons. First, it is a model of a stable frontier market. Second, it provides a different corporate environment to those previously investigated. Third, it serves as a model of the other GCC markets.[10]

Furthermore, although many survey studies examine capital budgeting practices, none have reported evidence from the Gulf region in general and from Oman in particular, except two studies. Al Mutairi et al. (2009) investigated Kuwaiti listed firms for a wide set of financing and governance decisions as well as environmental concerns.

[10] I choose a single market from the GCC markets to reduce data complexity and errors. Practically, a single researcher investigating more than one country would be unlikely to obtain all the necessary information across all these countries (Chu and Partington, 2001).

The only part of their study relating to capital budgeting practices concerned the methods used for selecting proposed projects and the methods used to calculate the cost of capital. Abdelaziz et al. (2010) investigated firms listed across the GCC markets. The aim of their study was to investigate the viewpoints of GCC finance executives about a wide set of financial decisions, and compare their responses with both financial theory and the practices of their Western peers. Again, the only part of their study relating to capital budgeting practices concerned the methods used for selecting proposed capital investment projects and the methods used to calculate the cost of capital.

This chapter differs from these two studies and contributes to the existing literature in many aspects. First, it reveals wider evidence relating to three stages of capital budgeting practices in the GCC by considering the Omani market as a model. Second, it provides new insights about why managers use or ignore real options analysis as a method to select proposed investment projects. Third, it uses three factors that were not used previously, to determine possible variances in the application of capital budgeting practices. These factors are the firm's performance measured by the ratio of return on equity (ROE), the firm's size according to capital budget, and total assets, in addition to firm ownership type and sector.

Therefore, the objective of this chapter is to comprehensively investigate current capital budgeting practices in the Omani market and compare them with the practices of developed markets. The significance of this objective is based on the need to investigate whether the existing findings on capital budgeting practices in developed markets hold in frontier markets. The fulfilment of this objective saturates the desire of both researchers and investors. For researchers, there is a wide set of practices relating to the development and post-completion stages of capital budgeting that have not yet been explored in the GCC markets. Similarly, investors seek confidence in firm's decision making in these markets, and such information helps them to decide whether to invest or not. Hence, to fulfil the objective of this chapter, I developed a survey questionnaire containing 23 questions.

5.2. The Omani Market

It has been argued that investigating stable markets may provide an accurate results and findings about capital budgeting practices. Chen (2008) noted that firms in a

complex and risky business environment may find capital budgeting practices less useful because the complexity and uncertainty associated with this process create several difficulties for firms to estimate the capital budgeting parameters.[11] On the other hand, firms in a stable business environment, with a narrow number of goods, simple cross-sectional associations, and little growth chances, are likely to find capital budgeting practices more beneficial because of the simplicity of forecasting their parameters.

Therefore, I chose the Omani market for this investigation because it is considered to be a stable business environment. Generally, it has undergone gradual growth over the last five decades since the country began producing crude oil in 1968. In terms of stability and growth, from 1980 to 2007 Oman had the highest overall rate of growth in comparison with the other GCC countries. Similarly, it is one of only 13 countries in the world that have grown at an average rate of approximately 6 percent for more than 25 years (Looney, 2009). Oman also provides a different corporate environment than most corporate environments studied previously, specifically for the purpose of investigating capital budgeting practices. These differences are in the tax systems, financial markets, banking systems, and laws, each of which is described in more detail in the following paragraphs.

First, the tax system in Oman is of a straightforward type in the sense that it does not tax personal income such as dividends, but only corporate income that exceeds 30,000 Omani rial,[12] which is equivalent to 77,922 US dollars at a rate of 12 percent.[13] This is an important difference from most developed countries, which are known for the intricacy of their tax systems. The tax calculation is a vital factor in evaluating and selecting a capital investment project, and consequently a minor miscalculation of tax will produce wrong cash flows projections and will jeopardize the firm's decision-making process. Hence, investigating the Omani market reveals whether the easiness of their tax system helps them in applying sophisticated capital budgeting practices.

Second, the financial market in Oman is relatively underdeveloped, and its firms rely mostly on banks for their financing needs. This adds more importance to the

[11] These parameters are: the project's future cash flows, the risk-adjusted discount rate, the project's impact on cash flows generated from other assets, and the project's impact on future investment opportunity.

[12] The exchange rate between the Omani Rial and the US dollar is 0.385 (pegged). Source: Central Bank of Oman (CBO) website.

[13] Source: Oman Ministry of Finance website.

investigation, particularly in terms of investigating the existence of capital rationing, which is found in the existing literature to be mostly imposed internally by the firm's management rather than externally. Therefore, investigating the Omani market may provide a different perspective in this regard.

Third, Oman introduced its first civil code on the 13th of August 2013. The code is mainly governed by reference to Islamic jurisprudence, the principles of Islamic Sharia, and its customs. La Porta et al. (1997) suggested that countries that have large numbers of followers of religions such as Islam and Christianity experience lower government efficiency. Thus, investigating the Omani market reveals whether government ownership of firms affects capital budgeting practices.

Therefore, given that the Omani market is a stable frontier market, and given the above-mentioned differences between it and the previously studied markets, encouraged the researcher to investigate capital budgeting practices in this market. Moreover, it serves as a model of GCC markets, because all of them are generally similarly characterized, as discussed in Section 2.2. More specifically, they have a similar corporate environment to the Omani market namely: they have a straightforward tax system, underdeveloped financial markets, depending on the banking systems for financing, and follow similar laws that depend on Islamic jurisprudence. Hence, the findings of this chapter can be generalized across the GCC markets.

5.3. Review of Survey Studies Relating to Capital Budgeting Practices

Since the early 1960s, several researchers have investigated how theoretical capital budgeting practices are actually implemented by firms. Their findings were later examined by researchers such as Haka (2007), Burns and Walker (2009), and Mukherjee and Rahahlen (2011) to look at the overall pattern of capital budgeting practices by summarizing past survey findings. However, these three later studies explored the pattern of capital budgeting practices only in developed markets, particularly the US market, and any such pattern in emerging markets has not yet been discovered.

Therefore, this section reviews past survey studies of capital budgeting practices in developed and emerging markets and attempts to establish whether a gap still exists in the literature. However, because there is a large amount of information on each stage

of capital budgeting practices, the review starts by shedding light on the authors and their findings in developed markets, specifically the US market, and ends by including only the important emerging markets studies.[14] Moreover, the information on the US studies is mainly based on the reviews provided by Haka (2007), Burns and Walker (2009), and Mukherjee and Rahahlen (2011). Each stage of capital budgeting is examined in turn in the following sections:

5.3.1. The identification stage

The only notable studies focused on the identification stage are Istvan (1961), Klammer (1972), and Farragher (1986). Klammer (1972) conducted a survey in 1959 and 1970. The study found that 82 and 94 percent, respectively, of firms make extra efforts to encourage employees to propose ideas for capital expenditure, whereas Istvan (1961) found that only 2 percent of firms do the same. Farragher (1986) found that on average nearly 59 percent of firms pursue ideas for proposed projects from their subordinates. The study also found that only 6 percent of firms reward valuable ideas.

However, all these studies were conducted in the US market and all stated that the generation or creation of ideas within firms happen from the bottom up rather than from the top down. On the other hand, only two studies conducted in emerging markets have investigated this stage. Khamees et al. (2010) found that the majority of Jordanian industrial firms (nearly 81 percent) generate ideas from the top down rather than from the bottom up. Similarly, Singh et al. (2012) found the same pattern of ideas generation among industrial firms in India. Nonetheless, I decided not to focus on the identification stage of capital budgeting practices, because it is generally believed that no new insights are likely to be discovered.

5.3.2. The development stage

The second stage of capital budgeting practices involves waiving unfeasible investment proposals and improving the remaining investment ideas into project proposals. Fremgen (1973) and Gitman and Mercurio (1982) found that firms view this as the most difficult stage within the capital budgeting practices and more important than project selection or project post-completion review. This is because, in

[14] Appendix I provides table 5.1 for more detailed information on past studies (samples, responses, and their research methodology) of developed and emerging markets.

this stage, management predicts the cash flows of the proposed projects, and a wrong forecast or evaluation will lead the management to choose unsuitable projects. However, these are general findings, and the following sections look at the individual phases of the development stage.

5.3.2.1. Screening the investment ideas

On the screening of investment ideas, Istvan (1961), Petty et al. (1975), and Scapens and Sale (1981) surveyed firms to determine at which level within firms investment ideas are revised and screened. Istvan (1961) found that 55 percent of firms use non-specialists to revise proposals before forwarding them to the decision makers. Petty et al. (1975) found that screening mostly takes place in the departments rather than centrally, for example, by a committee. Scapens and Sale (1981) found that departments and executive managers cooperate in developing a capital spending plan.

5.3.2.2. Cash flow practices

Cost and benefit data analysis is complex. Therefore, when preparing development proposals, involvement of the finance department is required. However, the existing evidence shows that involvement of the finance department is less than would be expected. For example, Williams (1970) found that engineering and accounts departments share the responsibility of preparing the cost and benefit analysis (39 and 33 percent, respectively). Pohlman et al. (1988) found that 84 percent of firms employed people with diverse backgrounds, such as accountants, financial analysts, treasurers, vice presidents, and department managers, to supervise such analysis.

Furthermore, firms usually forecast cash flows instead of just net income, to explore the worthiness of projects. Pohlman et al. (1988) found that 83 percent of firms use specific procedures for estimating cash flows, and out of these, 78 percent use standardized forms for estimating cash flows. Moreover, two studies have investigated whether firms adjust their cash flows for inflation. Hendricks (1983) found that 50 percent of firms adjust their cash flows for inflation, and Meier and Tarhan (2007) found that 68.2 percent of firms do the same adjustment.

5.3.3. The selection stage

The third stage of capital budgeting practices involves selecting the proposed projects. The following sections look in turn at the capital budgeting selection methods, the

methods of calculating the cost of capital, the risk assessment methods, the capital rationing phenomenon, the project approval process, and the personnel involved in this stage.

5.3.3.1. Selection methods

Researchers have focused mainly on investigating the use of four capital budgeting methods: the payback period (PP), the accounting rate of return (ARR), the internal rate of return (IRR), and the net present value (NPV). The PP and the ARR are generally called non-discounted cash flow (NDCF) methods and are considered to be less sophisticated than the NPV and the IRR, which are generally called discounted cash flow (DCF) methods. This is supported by the wide range of evidence in the literature that firms are increasingly using DCF methods and favouring DCF over NDCF methods as their main selection criteria. For example, Burns and Walker (1997) found that firms favour the IRR over the NPV because the IRR is easier to follow and easier to use. Moreover, Apap and Masson (2005) found that 57 percent of firms depend on the NPV if there is a conflict of ranking between the two methods, in comparison with 18 and 5 percent of firms depending on the IRR and the modified IRR, respectively.

However, this does not mean that NDCF methods are no longer being used. Evidence shows that the PP is still favoured by firms, but as a secondary tool for selecting proposed projects. Kim and Farragher (1981) found that 38 percent of firms still rely on the PP, and Trahan and Gitman (1995) found that 72 percent of firms do the same. Burns and Walker (1997) found that the PP is still used because it is easy to understand and compute and it has the ability to measure both liquidity and riskiness of proposed projects. Other potential reasons for the use of the PP are indicated in the findings of Apap and Masson (2005). They found that 72 percent of firms indicated that different selection methods provide different information and 32 percent indicated that management executives wants different methods.

A few other methods are used to select proposed capital investment projects: the modified IRR, the discounted PP, the adjusted present value, the profitability index, and real options analysis. All of these methods are found in the literature to be less frequently used than NPV, IRR, ARR, and PP. However, real options analysis is rarely used even though it is considered to be superior to traditional capital budgeting

selection methods. For example, Myers (1984) discussed the inadequacy of DCF methods in selecting a firm's strategy options such as in research and development (R&D). Other studies such as Triantis and Borison (2001) and Copeland (2002) argued that the NPV methodically underestimates investment opportunities in comparison to real options analysis. However, the existing evidence shows that in practice, firms do not favour the use of real options analysis. For example, Block (2007) found that only 14 percent of firms are using real options analysis to select proposed capital investment projects. Hence, there is a lack of evidence about the reasons for this reluctance in using this type of method.

5.3.3.2. Cost of capital

Studies conducted before the mid 1970s showed that about 30 percent of firms use the weighted average cost of capital (WACC) as a hurdle rate. Later surveys showed a large increase in the use of WACC, such as Bruner et al. (1998), who found that 93 percent of firms use the WACC as the required rate of return when selecting and evaluating projects. They also investigated how firms calculate WACC and found that firms generally weight it on market values and not book values. Besides the use of WACC as required rate of return, evidence shows that from the end of the 1970s the CAPM has also been used significantly in calculating the cost of equity. For instance, Gitman and Mercurio (1982) found that 21 percent of their sample used this model to compute the cost of equity, and Graham and Harvey (2001) found that 74 percent of their sample did the same. In addition to the WACC and the CAPM, a few of the other methods used to work out the cost of capital include the cost of debt only, earning yield, average historical return on common stock, and dividend yield.

5.3.3.3. Risk analysis

Researchers started to investigate the risk assessments of firms by questioning the way firms incorporate risk while making capital budgeting decisions, whether firms use sophisticated risk assessments, and whether they use one discount rate for all projects irrespective of their characteristics such as domestic or foreign. Several studies (e.g. Brigham and Pettway, 1973; Kim et al. 1986; Shao and Shao, 1993; Ryan and Ryan, 2002) found that firms favour sensitivity analysis as a risk analysis technique.

In terms of the adjustment of risk, three main methods are used by firms in the process of risk adjustment: modifying the PP, which is considered to be an unsophisticated

technique; adjusting cash flows; and changing the required rate of return, which is considered to be a sophisticated technique. Stanley and Block (1984) and Shao and Shao (1996) found that firms depend more on risk-adjusted cash flows than risk-adjusted discount rates.

The existing evidence shows that firms tend to avoid the use of the sophisticated risk-adjustment techniques. For example, in Trahan and Gitman's (1995) study, firms reported that adjusting cash flows and changing the required rate of return are impractical, depend on impractical assumptions, are difficult to understand by the executives, and are difficult to place. Mukherjee (1987) argued that firms may avoid these methods because they require enormous amounts of data and they are incapable of showing risk from a company viewpoint. Graham and Harvey (2001) found that nearly 59 percent of their sample firms use a firm-wide discount rate when evaluating overseas investments.

5.3.3.4. Capital rationing

The selection stage is particularly important when a firm has limited funds for capital investments. In this case, firms adopt a capital rationing concept, which basically means that the firms put a ceiling or boundaries on their capital budgeting size. This is useful in terms of avoiding overfunding projects that have low return, but also occur when managers have private information and can be used as an incentive for controlling more assets. On the other hand, capital rationing makes investment decisions difficult because it forces firms to reject some feasible investments. The existing evidence shows that 40 to 70 percent of firms work under a fixed budget (e.g. Brigham and Pettway, 1973; Gitman and Forrester, 1977; Mukherjee and Hingorani, 1999). Such capital constraints may force the firm to reject projects with positive results.

Therefore, researchers began to question whether such actions are forced upon firms externally by the providers of capital or internally by the executive management. The findings of these studies are mixed. For example, Scapens and Sale (1981) found that about 92 percent of firms use a cap on capital investments as a control method. Other studies found that restrictions on borrowing is the main purpose for capital restraints and that these limits are not due to the unwillingness of funds suppliers, but rather they are set by the management and based on the firm's debt ratio relative to its targets

(Fremgen, 1973; Gitman and Forrester, 1977; Gitman and Mercurio, 1982). Mukherjee and Hingorani (1999) found that 63 percent of firms apply capital rationing and 82 percent indicate that capital constraints are imposed by internal management. The researchers argued that the reasons for capital rationing are to avoid default risk, maintain reserves, and decrease the influence of enthusiastic estimates.

5.3.3.5. Project approval

Mukherjee (1988) analysed 61 guides on capital budgeting and found that nearly 75 percent of these guides emphasize the type of system required to set the level of authorization for capital budget and the steps required to get the budget approved. He also found that the level of approval is dependent on the rank of the project and the size of project. Moreover, a project that is not included in the budget always requires a higher level of approval. Nonetheless, I decided not to focus on this element of capital budgeting practices because such procedures are defined and conducted according to the particular firm's needs. Such procedures are normally stated by the boards of directors and may differ from firm to firm according to their internal control mechanisms.

5.3.3.6. The professionals involved in analysing proposals

The selection stage is similar to the development stage because both stages require the attention of the firm's decision makers in choosing between projects. Therefore, the development stage also requires the full involvement of the finance department to analyse the proposed projects. The existing evidence relating to this stage is varied. For instance, Gitman and Forrester (1977) found that 60 percent of firms give the responsibility of analysing proposed investments to their finance department. Williams (1970) found that firms depend more on other departments (e.g. engineering and marketing departments) for developing proposals and the finance department was more involved in analysing proposed investments. Moreover, 80 percent of these firms employ more than three employees dedicated to the same purpose.

5.3.4. The post-completion review stage

The existing findings are mixed with regard to the post-completion review stage. For instance, Istvan (1961) and Gitman and Mercurio (1982) found that 50 percent and 90 percent, respectively, of firms perform post-completion reviews. On the other hand, Gordon and Myers (1991) found that the post-completion review is not a mandatory

part of the capital budgeting procedures of firms. Scapens and Sale (1981) provided evidence about who conducts this function. They found that about 53 percent of firms conduct the post-completion reviews at a departmental level and 44 percent at the head offices. Brigham and Pettway (1973) found that firms such as utility firms do not conduct a regular check on the operating cost and revenues, because their types of projects are compulsory. Gordon and Myers (1991) found that firms usually focus on performance evaluation in relation to asset. The order of priority is given first to strategic assets such as expansion projects, second to administrative assets such as furniture and equipment, and third to operating assets such as replacement projects.

5.3.5. Summary:

Previous survey studies of capital budgeting practices indicate that the distance between the theoretical concept of capital budgeting and the practices of firms has narrowed. For example, firms use cost benefit analysis when calculating their cash flows as well as including opportunity cost and inflation rate. Firms' use of NDCF methods has decreased over time, and currently they favour DCF methods, but not real options analysis. Firms also calculate the cost of capital in accordance with what is implied by the cost of capital theories.

However, this past evidence is mostly derived from survey studies conducted in developed markets, particularly the US market. Little is known about such practices in other markets, in particular emerging and frontier markets. In fact, as the table in Appendix II indicates, little is known about capital budgeting practices in emerging markets and in particular frontier markets. The table shows that most of the studies conducted on emerging markets have focused mainly on the selection stage, and evidence relating to the other stages is almost absent. Only Khamees et al. (2010), Dangol et al. (2011), Singh et al. (2012), Tufuor and Doku (2013), Mbabazize and Daniel (2014), and Koralalage (2014) have investigated a specific element of the other stages and the main focus of their studies was still the selection stage.

Thus, despite the fact that capital budgeting practices play a significant role in investment decision making, the international trend has largely emphasized investigating this subject in developed countries, and evidence from emerging markets and particularly frontier markets such as the Middle East countries is scarce. The only exceptions are the two studies mentioned in Section 5.1 (Al Mutairi et al. 2009; Abdelaziz et al. 2010), which also focused on the selection stage. Therefore, to the

best of my knowledge, none of the existing survey studies have specifically aimed to comprehensively investigate capital budgeting practices in emerging markets, and particularly the GCC region.

In the sense that this investigation covers lacked elements of capital budgeting practices, this chapter fill this gap in the literature by investigating three stages of capital budgeting practices in the Omani market by considering it as a model for all GCC markets. These unresearched elements relate to the development, selection, and post-completion review stages. For the development stage, this investigation is the first to cover both the screening of investment ideas and the cash flow practices within the GCC markets and the Omani market in particular. It is also the first to inquire about the personnel involved in the development stage. For the selection stage, the investigation is the first to investigate whether real options analysis is used as a selection method for proposed projects and the reasons for using or ignoring this method. It is also the first to inquire about the personnel involved in the selection stage and is the first to investigate the existence of capital rationing. Finally, for the post-completion review stage, the investigation is the first to study the frequency of evaluation of projects, the existence of estimations of forecasted and actual cash flows, the level of accuracy, and the most difficult stage of capital budgeting practices faced by firms.

5.4. The Survey Methodology

Generally, survey studies use a variety of methods to collect the required data. However, the data required in the present study has a quantitative nature that comes from individuals representing firms. I therefore developed a survey questionnaire containing 23 questions to investigate current capital budgeting practices in the Omani market.[15] I developed the questions based on a broad and focused review of existing survey studies. As a result, most of the questions are reasonably similar to those of Pohlman et al. (1988), Graham and Harvey (2001), Ryan and Ryan (2002), Lazaridis (2006), Al Mutairi et al. (2009), and Baker et al. (2011), but modified based on feedback received through the preliminary test stage of the questionnaire (which is discussed later, in Section 5.4.2).

[15] The questionnaire is available in Appendix III.

I designed most of the survey questions on a Likert scale of 1 to 5 (where 1 means "strongly disagree", 2 means "disagree", 3 means "undecided", 4 means "agree", and 5 means "strongly agree"). However, there are few exceptions to some questions which require the participant to provide particular information. I designed most of the questions as closed-ended questions for three main reasons. First, this type of question is easy for participants to complete. Second, it is more efficient for data organization and processing. Third, it allows comparison of the findings with most of the previous studies because they used the same type of question.[16]

5.4.1. The questionnaire

All the questions address the main aim of this chapter by generally covering three stages of capital budgeting practices as follows:

For the screening of investment ideas at the development stage, the questionnaire inquiries about the investments that require capital budgeting, whether firms conduct quantitative analysis for every proposed project, and the project size that requires such an analysis. These questions are mainly drawn from the survey studies of Pohlman et al. (1988), Ryan and Ryan (2002), and Lazaridis (2006).

For the cash flow practices at the development stage, the questionnaire inquiries about whether firms have standard procedures for generating information about future cash flow, the methods used for forecasting cash flow, whether firms adjust projected cash flows for inflation, the methods used in adjusting cash flow estimates for inflation, and the personnel involved in the development stage. These questions are mainly drawn from the survey studies of Pohlman et al. (1988) and Lazaridis (2006).

For the selection stage, the questionnaire inquiries about the methods used by firms when selecting investment projects, whether they use real options analysis as a method when selecting capital investment projects, and the reasons for using or ignoring this method. The questionnaire also inquiries about the methods used to determine the cost of capital and further investigate the components of WACC, namely the weighting and the tax rate used. These questions are mainly drawn from the survey studies of Graham and Harvey (2001), Al Mutairi et al. (2009), and Baker et al. (2011).

[16] Refer to Siniscalco and Auriat (2005, p. 22) for a detailed explanation of the three types of survey questionnaire structures, namely closed-ended, open-ended, and contingency questions.

For the risk analysis in the selection stage, the questionnaire inquiries about the risk analysis methods used to decide which projects or acquisitions to pursue. For capital rationing, the questionnaire inquires whether limits are placed on the size of the annual capital budget, whether the supply of funds are sufficient to finance all acceptable proposals submitted for consideration, the reasons for not financing such projects, and the departments or divisions responsible for selecting proposed projects. These questions are mainly drawn from the survey studies of Gitman and Forrester (1977), Mukherjee and Hingorani (1999), Graham and Harvey (2001), and Al Mutairi et al. (2009).

For the post-completion review stage, the questionnaire inquiries about how frequently the firms conduct a formal procedure in evaluating the operating performance of all existing projects, whether they compare the estimated cash flow with the actual cash flow, and the level of estimation error accrued. These questions are mainly drawn from the survey studies of Pohlman et al. (1988) and Lazaridis (2006). Besides, the questionnaire ends by inquiring about the most difficult stage of capital budgeting, and this question is designed by the researcher.

The final question of the questionnaire is designed to gather demographic variables of the sample firms. This is to understand the variance of applying capital budgeting practices among the firms and their executive management. The firms' characteristics examined are: firm size in terms of sales revenue, total assets, and annual capital budget; firm performance in terms of ROE; firm ownership type (government or private ownership); firm age in term of years; and firm sector in terms of the sector in which the firm operates (financial, services, or industrial sector). The executive management characteristics examined in this chapter are: CEO age; CEO educational background; and CEO time spent in the position (CEO tenure).

Here, the chapter follows Graham and Harvey (2001) in choosing the demographic variables of firms and their CEOs, but differs in terms of the firms' characteristics. For instance, Graham and Harvey (2001) used sales revenue only to determine the size of their targeted firms, whereas this chapter determines the size of firms based on their sales revenue, capital budget, and total assets. Moreover, this chapter uses new variables, namely the performance measure of firms (the ROE), and firm ownership type and sector. Therefore, there are notable differences between this chapter and previous survey studies of capital budgeting practices. The underlying hypothesis for

including these new variables is based on a rational explanation as follows:

First, sales revenue alone cannot reflect the size of firms, because usually the firms are evaluated based on their total assets. Similarly, the core focus of capital budgeting practices is pivoted about the firm's capital budget. Therefore, it is important to measure the influence of firm size on capital budgeting practices based on sales revenue, which represents the income of the firm, the capital budget, which represents the strategy and control of the firm, and the total assets, which represent the value of the firm.

Second, the performance measure used in this study (ROE) reflects the magnitude of firm performance. A firm with good performance indicates that the firm is following a good strategy in setting its long-term investment. Hence, it is vital to measure the relationship between firm performance and capital budgeting practices.

Third, firm shareholder type (government or private) is considered in this study to explore any possible influence of ownership type on capital budgeting practices. This is mainly derived from the argument of La Porta et al. (1997), who suggested that countries that have large numbers of followers of religions such as Islam or Christianity face lower government efficiency. Therefore, this chapter tests the effect of government ownership on firms' capital budgeting practices and whether these firms differ from private firms in the application of these practices.

Fourth, most existing studies of emerging markets have investigated the use of capital budgeting practices by industrial firms and have ignored the other sectors. Therefore, this study measures the use of capital budgeting practices across sectors.

Finally, I assess the influence of the demographic variables on capital budgeting practices. These variables are categorized and tested against each method or statement stated by the closed-ended questions. For a single variable that is categorized into two groups, such as the firm's size (small or large), I use the independent sample t-test for comparing between the mean of two groups. For a variable that is categorized into three groups, such as the firm's sector (financial, services, or industrial), I use a one-way analysis of variances with a post-hoc test.

5.4.2. The pilot test

A pilot test was conducted by distributing the survey questionnaire to a number of academic members of staff within the faculty of Economics and Finance at Brunel

University London, postgraduate students in the same department, and a number of Omani finance managers. This is to ensure that the survey contents are valid and capable of generating a favourable response rate from the sample firms (Smith, 2011).[17]

I personally invited the academic staff and postgraduate students to participate in the pilot testing process. The finance managers were approached through an online professional network called LinkedIn.[18] I viewed their LinkedIn profiles to ensure that they practise the role of budgeting and planning, and then sent them a message with an invitation to participate in evaluating the questionnaire.

All participants were provided with a pilot test evaluation sheet and a draft of the questionnaire. I followed Al Mutairi et al. (2009) design for the evaluation sheet because they posed questions about the intended objectives and contents of the questionnaire. All questions on the evaluation sheet are in the form of a Likert scale of 1 to 5 (where 1 means "strongly disagree", 2 means "disagree", 3 means "undecided", 4 means "agree", and 5 means "strongly agree"). The evaluation sheet concluded with two open-ended questions that ask the participants to provide any further comments or suggestions to improve the questionnaire.[19]

Consequently, the draft of the questionnaire and the evaluation sheet were distributed to 40 participants, of which 5 were academic staff, 20 were postgraduate students, and 15 were finance managers working in the Omani market. The total responses received were 26, of which 5 were academic staff, 14 were postgraduate students, and 7 were finance managers working in the Omani market (thus yielding an overall response rate of 65 percent).

Thus, the analysis presented in Appendix V, shows that the participants generally responded positively to the draft questionnaire. Over 90 percent of the participants agree and strongly agree that the objective of the questionnaire is relevant to capital budgeting practices and that the questionnaire is well structured. Over 80 percent agree and strongly agree that the objective and contents of the questionnaire is stated

[17] Validity means whether the questionnaire is accurately targeting the required information and whether it is capable of doing the same when it is distributed to the target sample.

[18] LinkedIn is an online social network for professional networking. The network allows its members to view each other's profiles, which contain information such as occupation, experience, professional memberships, and skills.

[19] A sample of the evaluation sheet is available in Appendix IV.

clearly and that the questionnaire content is easy to understand and covers important areas of capital budgeting practices.

Moreover, 73 percent of the participants agree and strongly agree that the questionnaire design is flexible enough for the participants to move backward and forward. The same percentage is reached with regards to the questionnaire visual appealing and the easiness of its instructions. Besides, 65 percent of the participants agree and strongly agree that the questionnaire is sufficient to measure capital budgeting practices, and only 31 percent agree and strongly agree that the questionnaire is lengthy. In addition to the evaluation, the participants provided some written comments to improve the questionnaire further. I considered these comments carefully to improve the final draft of the questionnaire.[20]

I also conducted a reliability test because the questionnaire must not only be valid, but also reliable in the sense that it can produce the same results obtained through the validity check. Several methods can be used to check the reliability. For example, a pilot test could be conducted again with the same group that participated in the evaluation of the questionnaire. Then each person's answers could be checked to determine the similarity of their answers at both points of time. If the answers are the same for each person, then the questionnaire can be considered to be reliable. However, this approach has a limitation, because it is time consuming and cannot ensure that each participant will definitely answer the same question in the same way.

Therefore, I decided to conduct a statistical method to test the reliability of the questionnaire. This method is widely used and known as Cronbach's alpha. Overall, the test results were positive, and therefore, I decided that the questionnaire was ready to be distributed.[21]

Prior to distributing the questionnaire, I followed precautionary actions to eliminate any negative influence on the response rate. First, although the dominant corporate language in Oman is English, the questionnaire was translated into Arabic and had been proofread by an authorized translator. Second, as discussed in this section, a pilot test was conducted to test the draft questionnaire. Third, I approached the Embassy of

[20] Most of these comments were concerned with the sequence of the questions and how to structure them sequentially to avoid confusion.

[21] Cronbach's alpha is a statistical test that is used to examine whether the questionnaire is internally consistent. If the results of the test are between 0.75 and 0.65, then the questionnaire is considered to be consistent. Refer to Iacobucci and Duhachek (2003) for a detailed explanation of this test.

Oman in London and the Capital Market Authority of Oman to seek possible assistance in distributing the questionnaire. Fourth, the questionnaire contained an option to the participants to enable them to request a free copy of the research findings. This option was designed to serve as an incentive for concerned participants to fill in the questionnaire. Finally, I obtained ethical approval from the School of Social Sciences at Brunel University London.

5.4.3. Administrating the questionnaire

To facilitate distribution of the questionnaire, I collected an up-to-date contact list of Omani listed firms from the information centre of the MSM. The list contained the names and contact details of the Omani listed firms. The contact details were the firm's telephone and fax numbers, their contact email, their post office box and postal code numbers, and their CEOs' names. On 1st May 2014, I sent envelopes to 155 firms registered in the MSM and addressed directly to their CEOs.[22] The envelopes contained a set of documents comprising two versions of the questionnaire (English and Arabic), a covering letter signed by the researcher, an endorsement letter from the Omani cultural attaché in London, an endorsement letter from the vice president of the Capital Market Authority of Oman,[23] and a stamped self-addressed return envelope.

The covering letter stated the importance of the subject being studied, the aim of this study, and assured the participants that their answers would stay strictly anonymous and confidential and would not be shared with third parties. The covering letter also stated that the questionnaire should be returned by the end of May 2014. The two endorsement letters included some statements encouraging the Omani listed firms to support this study by completing the questionnaire. The respondents were also provided with several options to return their responses, such as by postal mail, email, or fax.

A challenging time plan was set to distribute and collect the questionnaires. It was a period of one month, from the 1st of May 2014 to the 30th of May 2014. This period was divided to two weeks for the process of following up with the firms. During the beginning of the first two weeks, all the firms were contacted by phone to ensure that they had received the questionnaire and asked to contact the researcher if they needed

[22] The number of listed firms in MSM is 119, but 36 firms are registered in the stock market and not listed for specific reasons relating to Capital Market Authority regulations.
[23] Copies of the endorsement letters are provided with the questionnaire sample in Appendix III.

any clarifications about the questionnaire.

To enhance the response rate, I contacted the firms using several methods such as phone calling and visiting most of the sample firms based in Muscat, which is the capital city of Oman. This is to ensure that the questionnaire had reached them. I also requested the management to fill it in and return it by post to assure them that their responses would stay anonymous. With regard to the firms based outside Muscat, some individuals assisted me in calling these firms to make sure that the questionnaire had reached the firms and to request the management to fill it in and return it by post.

Finally, by the end of the first two weeks, 30 questionnaires were completed and returned by post. Then, the follow-up process continued for the final two weeks, and another 29 completed questionnaires were received. Therefore, the overall response accumulated to 59 questionnaires received by the end of May 2014, which yielded to a response rate of 38 percent. This response rate is considered favourably compared with prior academic surveys conducted in the region. For example, Abdelaziz et al. (2010) documented a response rate of around 8 percent in a survey mailed to 479 GCC firms.

5.5. The Survey Results

This section discusses in detail the results of the survey questionnaire conducted for this chapter. The following analysis is divided into two sections. The first section presents the frequency and correlation analysis of the demographic variables. Then the second section discusses the analysis of the questionnaire results according to the investigated stages of capital budgeting practices.

5.5.1. Descriptive statistics

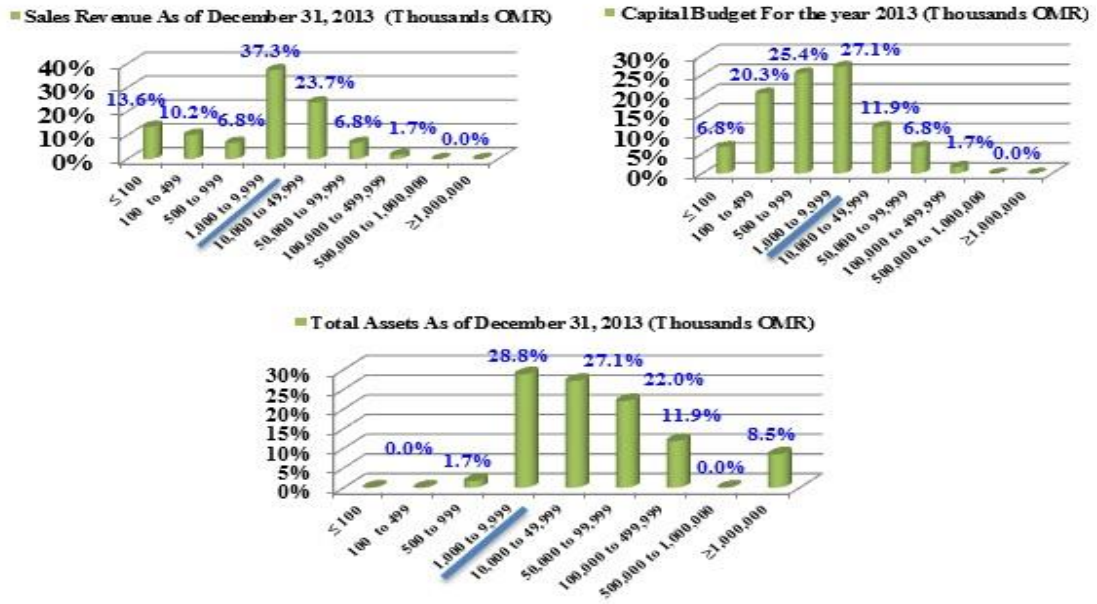
5.5.1.1. Descriptive statistics of the sample firms

Values in the questionnaire indicating the level of a firm's sales revenue, capital budget, and total assets ranged from less than 100,000 Omani rial (OMR) to 1 billion OMR or greater.[24] Figure 5.1 show that the responding firms' sales revenues and capital budgets ranged from less than 100,000 to less than 500 million OMR, and the highest percentages (37.3 percent and 27.1 percent) of responses came from the firms with sales revenues and capital budgets ranging from 1 million to 9,999 million OMR.

[24] I report the range with the Omani currency because it was the currency provided in the questionnaire and it may cause confusion for the reader if I converted this to US dollars or UK pounds sterling. However, for reference, 1 OMR is equivalent to 3.85 US dollars.

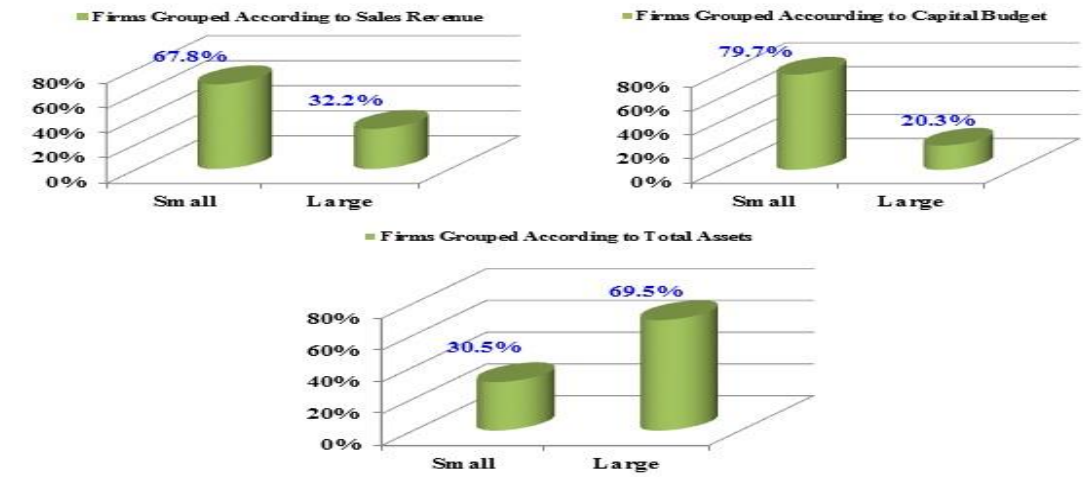
However, the responding firms' total assets ranged from 500,000 to 1 billion OMR or greater, and the highest percentages (28.8 percent) of responses also came from those firms with total assets ranging from 1 million to 9,999 million OMR.

Figure 5.1: The Range of Sales Revenues, Capital Budget, and Total Assets of the Respondent Firms



For better interpretation of the same results and to conduct the analysis required to investigate the influence of the demographic variables on capital budgeting practices, I followed Graham and Harvey (2001) by grouping each of the three variables into two categories. The first category is "small", defined as less than 10 million OMR, and the second category is "large", defined as greater than 10 million OMR. By doing this, we can see from Figure 5.2 that, in terms of sales revenue, 67.8 percent of firms are small and 32.2 percent of firms are large. Similarly, in terms of capital budget, 79.7 percent of firms are small and 20.3 percent of firms are large. However, in terms of total assets, only 30.5 percent of firms are small and 69.5 percent of firms are large.

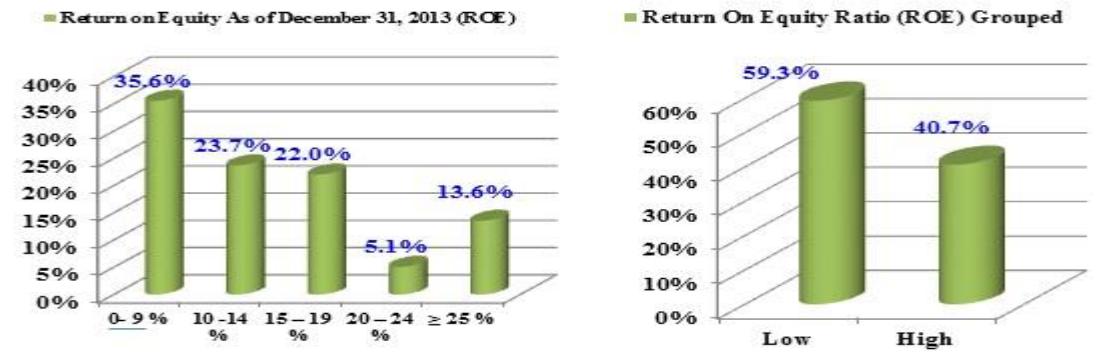
Figure 5.2: The Range of Sales Revenues, Capital Budget, and Total Assets Categorized



These results show that in 2013 the majority of the sample firms generated low sales revenue and allocated a low capital budget. However, this does not mean that the majority of the sample firms are relatively small, because the results show that the majority of firms are categorized as large according to their assets.

The ROE percentages in the questionnaire indicating the performance level of the sample firms ranged from 0 to equal to or greater than 25 percent. Figure 5.3 shows that the highest proportion of the sample firms (35.6 percent) have an ROE ranging between 0 and 9 percent and the lowest proportions of the sample firms have an ROE between 20 and 24 percent. Similarly, I regrouped the ROE into two categories. The first category is "low", defined as less than 15 percent, and the second category is "high", defined as greater than 15 percent. Consequently, the proportion of firms with low ROE is 59.3 percent, which is slightly greater than the 40.7 percent for firms with high ROE.

Figure 5.3: The Range of Return on Equity (ROE) of the Respondent Firms



These results support the previous results, because in 2013 the majority of the sample firms generated low sales revenue and allocated a low capital budget compared with their size. Thus, the majority of the sample firms' performance is low during the same year.

The survey also includes non-numeric variables of the firms, namely the age of the firms, the type of ownership, and the sectors in which the firms operate. The firm's age given in the questionnaire ranged from less than or equal to 5 years to greater than or equal to 25 years. The three options of ownership type given in the questionnaire were government, private, and both government and private. Similarly, for the sectors in which the firms operate, the three types of sectors in the MSM are the financial sector, the services sector, and the industrial sector.

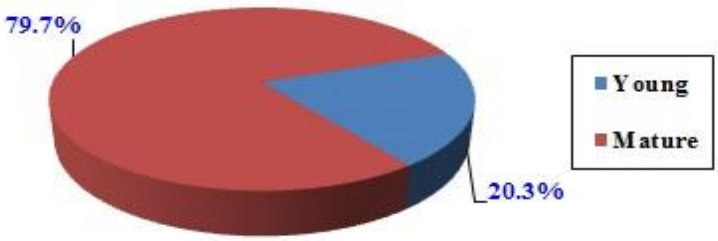
Figure 5.4 shows that the highest proportion of the sample firms (39 percent) are equal

to or greater than 25 years old, and the lowest proportion of the sample firms (5.1 percent) are in the age group of 5 to 9 years old. Furthermore, the ownership type that is dominant in the MSM is the private sector (62.7 percent) and the lowest is the government sector (3.4 percent). However, the remaining 33.9 percent are owned by both government and the private sector. Moreover, the highest proportion of the sample firms (49.2 percent) operates in the industrial sector, and the lowest proportion of the sample firms (16.9 percent) operates in the financial sector.

Figure 5.4: The Range of Firm Age, Ownership Type, and Sector

Here, the only regrouped variable is firm age. The first category is "young", defined as less than 15 years old. The second category is "mature", defined as greater than 15 years old. Figure 5.5 shows that the proportion of mature firms is greater (79.7 percent) than that of young firms (20.3 percent). The other variables, namely type of ownership and sector, are not regrouped, because the components of these variables cannot be merged, and the focus of the investigation is to test for differences in the application of capital budgeting practices among these different components.

Figure 5.5: The Firm Age Categorized



In summary, the sample firms are generally large in terms of size, but possibly generated low sales and allocated low capital budget in the year surveyed, which was 2013. This is supported by the ROE results because the proportion of firms with low ROE was greater than the proportion of firms with high ROE. Moreover, the majority

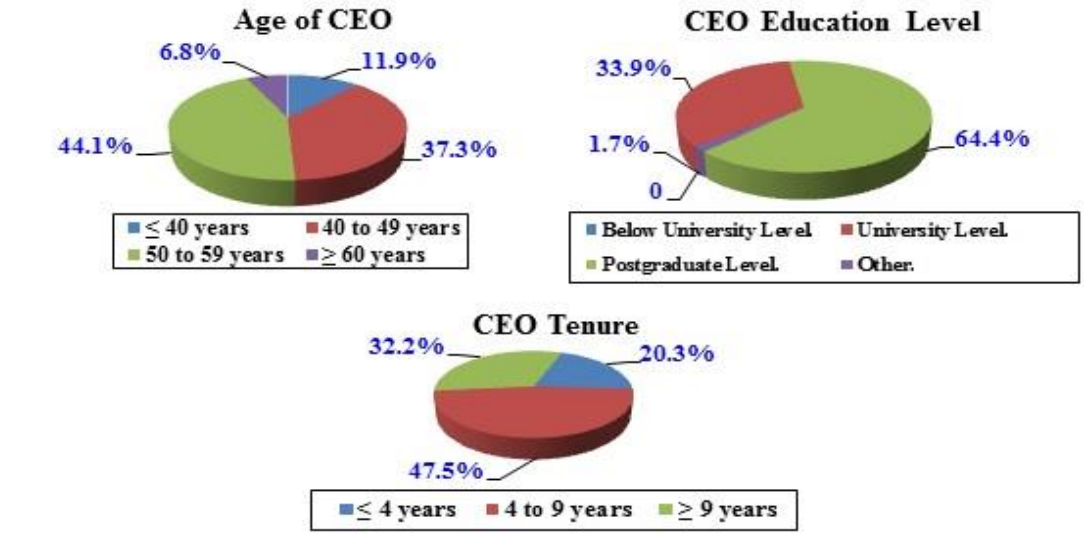
of the sample firms are mature, owned by the private sector, and operate within the industrial and services sectors.

5.5.1.2. Characteristics of the firms' CEOs

To indicate the characteristics of the CEOs, the range given in the questionnaire for CEO age range from less than or equal to 40 years to greater than or equal to 60 years. The educational levels of CEO are below university level, university level, postgraduate level, and others. The range of CEO tenure is from less than or equal to 4 years to greater than or equal to 9 years. Figure 5.6 shows that the highest proportion of the sample firms (44.1 percent) are managed by CEOs in the age group of 50 to 59 years old, and the lowest proportion of the sample firms (6.8 percent) are managed by CEOs in the age group of greater than or equal to 60 years old.

The survey also reveals that none of the sample firms are managed by CEOs educated to below university level (0 percent). The highest proportion of the sample firms (64.4 percent) are managed by CEOs educated to postgraduate level, and only a few firms (1.7 percent) are managed by CEOs with a PhD level of education, which is indicated as others.

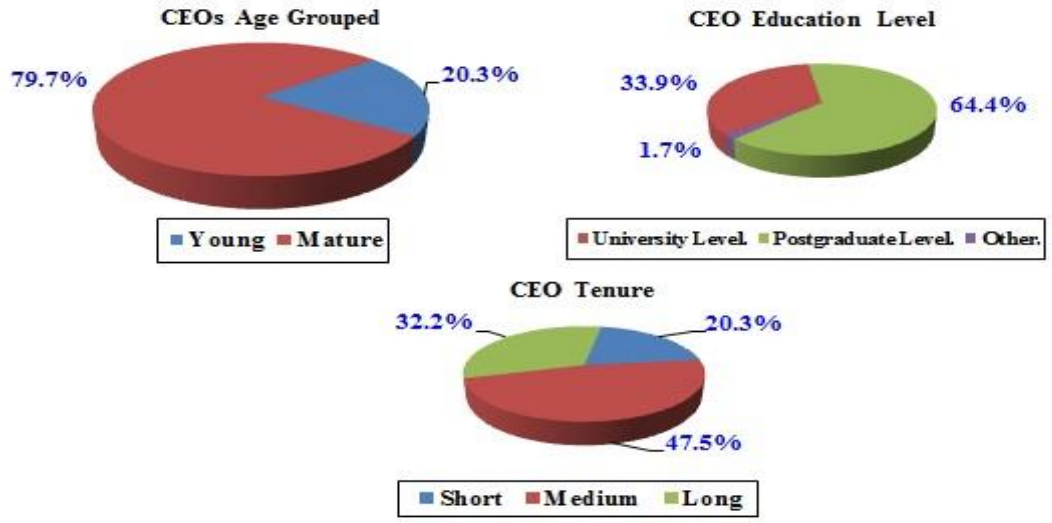
Figure 5.6: The Range of CEOs Age, Education Level, and Tenure



The highest proportion of sample firms (47.5 percent) have been managed by the same CEOs for a period of 4 to 9 years, and the lowest proportion of them (20.3 percent) have been managed by the same CEOs for a period of less than or equal to 4 years. I regrouped the results of CEO age only. As shown in Figure 5.7, the first category of CEO age is "young", defined as less than 50 years old, and the second category is

"mature", defined as greater than or equal to 50 years old. CEO tenure is renamed as "short", defined as less than or equal to 4 years, "medium", defined as from 4 to 9 years, and "long", defined as greater than or equal to 9 years. CEO education level remains the same, but I eliminate the below-university level.

Figure 5.7: The Range of CEO Age, Education Level, and Tenure Categorized



In summary, the sample firms are generally managed by mature CEOs, and the majority of them hold a postgraduate certificate. Moreover, the majority of them have spent between 4 to 9 years in their current position.

5.5.1.3. Correlation of the demographic variables

Due to an expected correlation between the firm's characteristics, namely sales, capital budget, total assets, and ROE, I constructed a mean square contingency table, also known as the phi coefficient approach, to assess the presence of correlation and to understand more precisely the link between the demographic variables.

The results (presented in Appendix VI) show that the correlation is relatively low between all the variables. Moreover, almost all the firms with a small capital budget are managed by CEOs with a medium tenure, and a higher number of industrial firms have a small capital budget compared with the firms in the other sectors. It is surprising that the capital budgets of industrial firms are smaller than those of firms in the other sectors. Typically, industrial firms have more machinery and equipment to buy annually. However, I assume that the growth of the industrial firms during the year of the survey (2013) was generally low.

A large number of the old firms are firms with large total assets, and the services firms are mostly small in terms of total assets. This result is logical because as firms grow in

age they accumulate more assets, particularly industrial and financial firms.

Additionally, the results show that those firms fully owned by the private sector have a lower ROE than those firms owned by a mixture of government and private shareholders. This contradicts the assumption stated in Section 5.2 that the governments in such countries are poorly efficient. However, this finding may be interpreted as being because the government stake in these firms may provide these firms with better facilities and privileges in conducting business than fully privately owned firms.

The results also show that older CEOs generally manage the private sector firms and a great number of them have a postgraduate level of education. This finding is in line with reality because it is generally known that the Omani government is implementing a programme for all the executive posts to be held by Omanis and most of the government-owned firms are managed by relatively middle-aged Omani nationals.

In the following sections, I discuss the capital budgeting practices followed by the Omani listed firms, and the analysis used to help understand the preference of using different capital budgeting practices among the different firms and their CEOs characteristics.

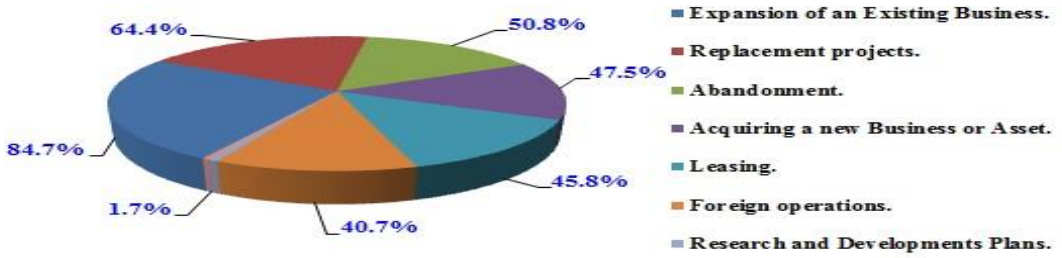
5.5.2. The survey results of capital budgeting practices

In the following sections I discuss in turn the results of the questionnaire responses relating to the investigated stages of capital budgeting, namely the development, selection, and post-completion review stages.

5.5.2.1. The survey results for the development stage

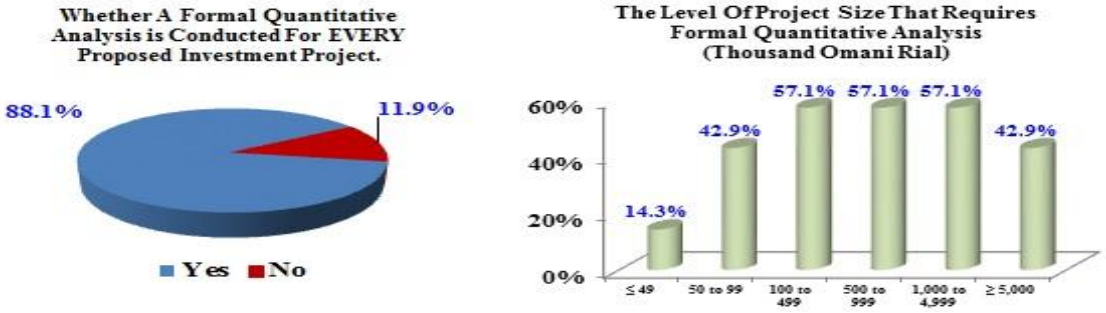
The survey started by investigating the screening of investment ideas by asking about the circumstances under which Omani listed firms use capital budgeting practices. The results (Figure 5.8) show that capital budgeting practices are followed by the majority of the Omani listed firms for almost all types of projects, except R&D projects. Only 1.7 percent of the firms indicated the use of such practices for such projects. The most likely reasons for this low use of capital budgeting practices within the sample for R&D projects are either that the existence of R&D projects is minimal or that these projects are dealt with using a different approach.

Figure 5.8: Responses to the Question About the Types of Projects Requiring the Use of Capital Budgeting Practices



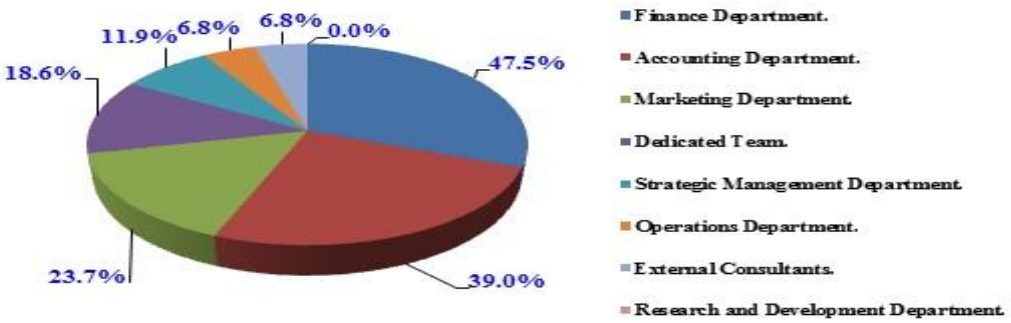
The results in Figure 5.9 show that only 11.9 percent of the Omani listed firms do not conduct a formal quantitative analysis for every proposed project. Out of those, the majority conduct such analysis for project sizes starting from 50,000 OMR.

Figure 5.9: Responses to the Questions Inquiring about the Existence of Formal Quantitative Analysis for Every Proposed Projects



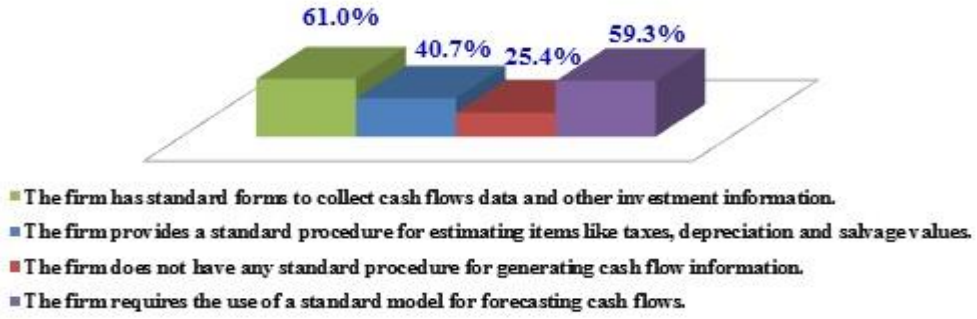
This quantitative analysis mainly focuses on predicting the cash flow estimates of proposed projects. Therefore, the survey further investigated this stage by asking about the departments involved in the evaluation of projects. The responses (Figure 5.10) show that the majority of the Omani listed firms give the responsibility of evaluating their proposed projects to their finance and accounting departments (47.5 and 39 percent, respectively). This indicates a greater involvement of the finance department than previous studies. For example, Lazaridis (2006) found that the majority of Greek and Cypriot firms give such responsibility to their accountants and only a few to their finance department.

Figure 5.10: Responses to the Question Inquiring About the Departments Responsible of for Evaluating Proposed Capital Investment Projects



The survey then asked about the existence of procedures for generating information about the firm's future cash flows. The results (Figure 5.11) show that standardized practices are followed by the Omani listed firms in generating cash flow information. For example, 61 percent of the respondents indicated that they have standard forms to collect cash flow data and other investment information, compared with 25 percent who do not. Moreover, 59.3 percent indicated that they require the use of a standard model for forecasting cash flows. Likewise, 40.7 percent of the sample firms indicated that they have a standard procedure for estimating specific items such as tax, depreciation, and salvage values. Here the survey reveals that the Omani listed firms use more standard procedures than firms in developed markets. For example, Lazaridis (2006) found that under 30 percent of Greek and Cypriot firms have such standard procedures.

Figure 5.11: Responses to the Question Inquiring About the Availability of Standard Procedures for Generating Cash Flow Information

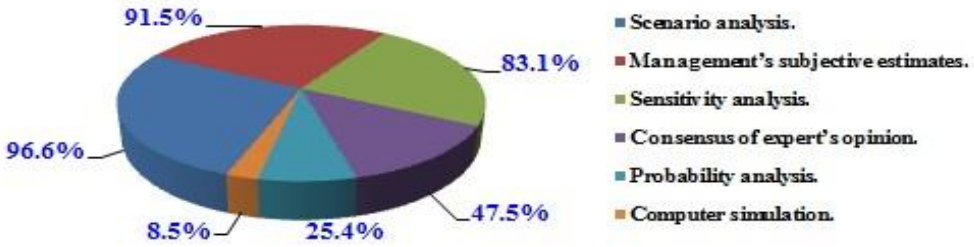


Additionally, the survey asked about the forecasting methods used to generate cash flow estimates. The results (Figure 5.12) show that three out of six methods given in the question are frequently used by the majority of the Omani listed firms. Scenario analysis, management subjective estimates, and sensitivity analysis (96.6, 91.5, and 83.1 percent, respectively) were used (almost always or always) for forecasting cash flow estimates. On the other hand, 47.5, 25.4, and 8.5 percent of the Omani listed firms indicated (almost always or always) the use of expert opinions, probability analysis, and computer simulation, respectively.

These results indicate that, in parallel with the popularity of using quantitative methods to forecast cash flow, the Omani listed firms generally use qualitative methods as well. However, more sophisticated methods are given less consideration, namely probability analysis and computer simulation. Comparing these findings to Lazaridis (2006), the Omani listed firms seem again to do better than Greek and

Cypriot firms, because Lazaridis study found that these firms depend heavily only on the mentioned qualitative methods.

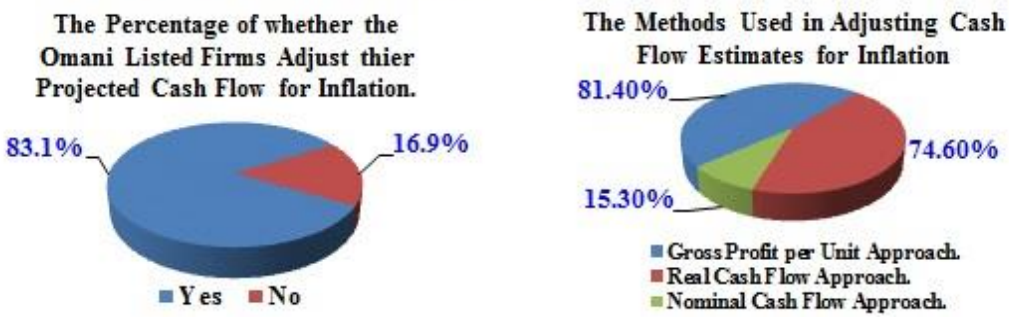
Figure 5.12: Responses to the Question Inquiring About the Forecasting Methods Used To Generate Cash Flow Estimates



Further analysis attempted to examine the responses conditional on the firms and their CEO characteristics.[25] Table 5.5 shows that small firms in terms of total assets are more likely than large firms to depend on their management's subjective estimates for forecasting cash flow estimates, with a mean rating of 4.61 versus 4.15 that is statistically significant at 10 percent. There are also significant differences in the use of a less popular method, namely probability analysis. The long-tenure CEOs use probability analysis more frequently than the medium-tenure CEOs, with a mean rating of 3.11 versus 2.39 that is statistically significant at 5 percent.

The survey concluded this stage by asking about whether cash flows are adjusted for inflation and the methods used for such adjustment. The result (Figure 5.13) shows that the majority (83.1 percent) of the Omani listed firms do adjust their cash flow estimates for inflation. The most popular adjustment methods are the gross profit per unit approach and real cash flow approach, with 81.4 and 74.6 percent, respectively, of the respondents indicating that they (almost always or always) use these approaches. I performed further analysis to examine the responses conditional on the firms and their CEOs characteristics, but I found no remarkable differences as shown in table 5.6.

Figure 5.13: Responses to the Question Inquiring About the Existence of Adjusting Cash Flows for Inflation and the Methods Used for the Adjustment.



[25] All tables that contain the results of the analysis made to examine the responses conditional on the firms and its CEOs characteristics are available in Appendix VII.

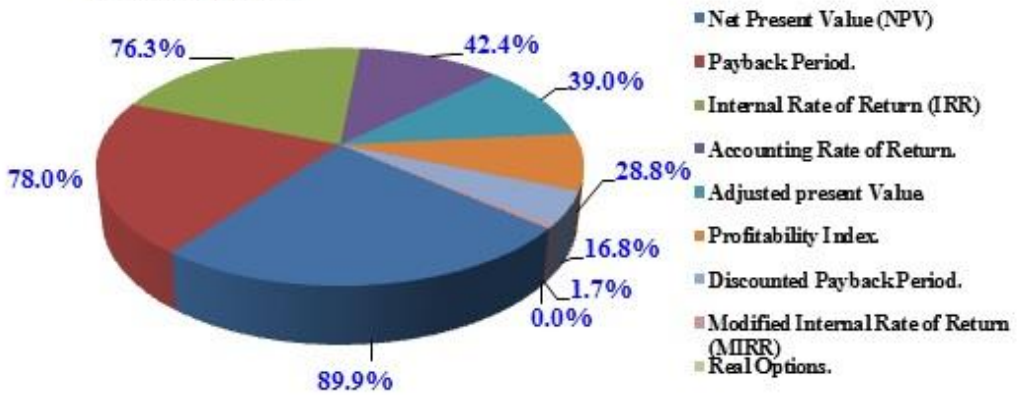
In summary, the investigation succeeded in revealing several findings relating to the development stage. First, the majority of the Omani listed firms use capital budgeting practices for almost all types and sizes of projects, except R&D projects. Second, the finance and accounts departments in this stage are more involved than other departments. Third, consistent approaches are used to generate cash flow information for proposed projects. Fourth, both quantitative methods and qualitative methods are used to forecast cash flow estimates. Moreover, sophisticated methods are used to adjust cash flow estimates for inflation. Thus, by comparing these results with those of developed markets, I find that the Omani listed firms are superior to a certain extent than Greek and Cypriot firms.

Moreover, the results provide evidence that the popularity of the cash flow forecasting methods is influenced by the firm size in terms of total assets and CEOs tenure. The large firms and firms with experienced CEOs tend to favour quantitative methods more than small firms and firms with less experienced CEOs. This indicates that as the firm grows in size it become more experienced in using and developing its capital budgeting practices. Similarly, CEOs who spend more time in their jobs with the same firm prefer to use more sophisticated methods to forecast cash flow.

5.5.2.2. The survey results for the selection stage

For the selection stage the survey started by asking about the selection methods used for deciding which projects or acquisitions the Omani listed firms pursue. The result (Figure 5.14) shows that the vast majority of the respondent firms favour the use of three particular methods when selecting a proposed capital investment project, namely NPV, PP, and IRR, for which 89.9, 78, and 76.3 percent, respectively, of respondents stated that they (almost always or always) use these methods.

Figure 5.14: Responses to the Question Inquiring About the Methods used for Selecting Proposed Capital Investment Projects.



These results show that the Omani listed firms use a NDCF method, namely the PP, along with DCF methods. Such findings are similar to the findings of existing studies in developed markets. For example, Burns and Walker (1997) found that US firms still use the PP as a selection method because it is easy to understand and compute and can be used to measure both liquidity and riskiness of proposed projects. Such reasoning is logical and is the most reasonable reason for the use of the PP by the Omani listed firms along with the DCF methods.

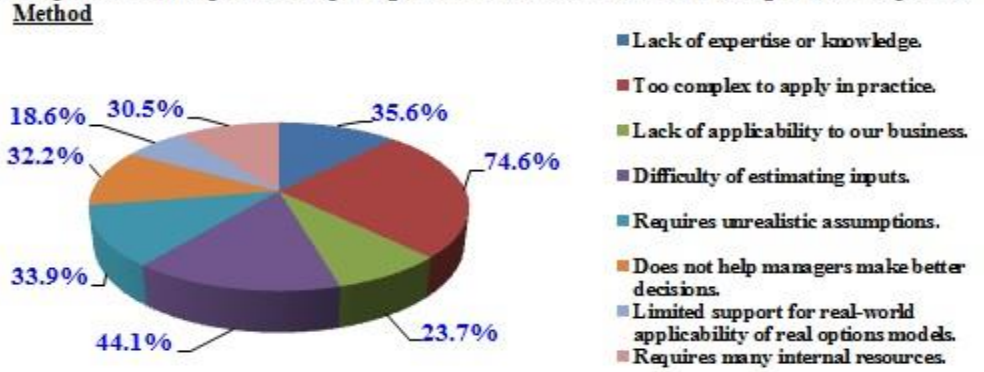
Further analysis attempted to identify any differences in the popularity of these methods among the different firms and CEO characteristics. The result presented in table 5.7, shows that NPV is used more by large firms (in term of sales revenue) than by small firms, with a mean rating of 4.63 versus 4.23 that is statistically significant at 10 percent. On the other hand, the IRR is used more by firms with high ROE than by firms with low ROE, with a mean rating of 3.96 versus 3.46 that is statistically significant at 5 percent.

The results also show significant differences in the use of less popular methods. For example, firms with a mixed ownership of both government and private tend to use the ARR method more than firms that are fully privately owned or fully government owned, with a mean rating of 2.00 versus 1.70 and 1.00 that is statistically significant at 10 percent. This finding contradicts one of the arguments of this chapter that government ownership of firms may create low efficiency (stated in Section 5.2). Here I find that fully government-owned firms are the lowest users of the ARR, which is considered to be an unsophisticated method for selecting proposed projects.

Furthermore, the investigation reveals that the other methods are not entirely ignored by the Omani listed firms, but are less used by them. However, real options analysis is the only one that is totally ignored by the respondents when selecting a proposed project. Here the survey reveals that the sample firms are relatively similar to the developed markets firms in this regard. For example, Block (2007) found that only 14 percent of US firms use real options analysis as a method of selecting proposed projects. Similarly, Baker et al. (2011) reported that 10 percent of Canadian firms use such analysis. Therefore, this survey posed a question to investigate the reasons for the ignorance of this method. Figure 5.15 shows that the majority of respondents (74.6 percent) indicated that such a method is too complex to apply in practice. Also, nearly over four thirds indicated that they suffer from lack of expertise or knowledge about

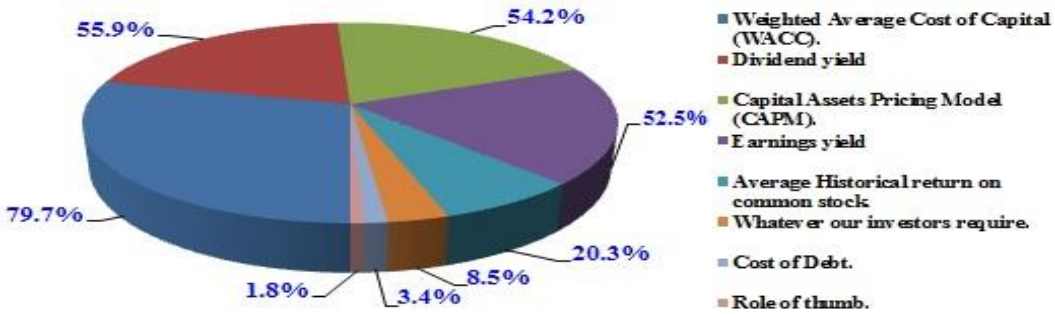
the method, and it requires many internal resources, and the method does not help managers to make better decisions because it requires unrealistic assumptions.

Figure 5.15: Responses to the Question Inquiring About the Reasons for NOT Using the Real Options Method



The survey then asked about the methods used by Omani listed firms to calculate their cost of capital. The result (Figure 5.16) shows that the vast majority of the sample firms (79.7 percent) use the WACC (almost always or always) as a method for calculating their cost of capital. Moreover, three particular methods (dividend yield, CAPM, and earning yield) are nearly equally popular among the respondent firms, with 55.9, 54.2, and 52.5 percent, respectively, responding that they use them (almost always or always) when calculating their cost of capital. Moreover, the interference of qualitative methods in calculating the cost of capital is minimal, with 8.5 and 1.8 percent of respondents indicating that they take into account whatever their investors require or depend on a rule of thumb, respectively, when calculating the cost of capital.

Figure 5.16: Responses to the Question Inquiring About the Methods Used for Calculating the Cost of Capital



Here the survey reveals that the Omani listed firms differ from developed markets firms. For example, Graham and Harvey (2001) found that the majority of US firms use the CAPM to calculate their cost of capital. Thus, I predict two possible causes of such low use of the CAPM in Oman. First, as argued in Section 5.2, the financial market in Oman is relatively underdeveloped and firms rely mostly on banks for their financing needs. Hence, the issuance of stock to raise capital is not frequent, which

makes the use of CAPM less frequent as well. This applies to dividend yield, earning yield, and the average historical return on common stock. Second, treasury bills and government bonds are rarely issued in the Omani market. Therefore, the lack of benchmark for a risk-free rate makes it difficult to use CAPM.

Further analyses attempted to identify any differences in the popularity of these methods among the different firms and CEO characteristics. The result presented in table 5.8, shows that large firms in terms of total assets tend to use the WACC for calculating cost of capital more than small firms, with a mean rating of 4.15 versus 3.44 that is statistically significant at 5 percent. Similarly, I find a stronger significant difference in the use of the WACC between CEOs with a long tenure compared with CEOs with medium and short tenures, with a mean rating of 4.58 versus 3.75 and 3.33 that is statistically significant at 5 percent. These results again indicate that as the firm grows in size it become more experienced in using and developing capital budgeting practices. The same applies to CEOs who spend more time in their jobs with the same firm, because they prefer to use the most applicable method for calculating the cost of capital.

Furthermore, since evidence about the popularity of the WACC is found among the Omani listed firms, the survey investigated further the application of this method by asking about the tax rates and the weights used to perform this method. The results (Figure 5.17) show that the majority of the sample firms (83.1 percent) use the current statutory tax rate and 81.4 percent use the market value weight (almost always or always) when calculating their WACC. This is logical, because the tax system in Oman has a straightforward approach, as mentioned in Section 5.2, and only a few firms by law are receiving exceptions or lower tax rates, and these firms are probably operating in sectors that are subsidized by the government.

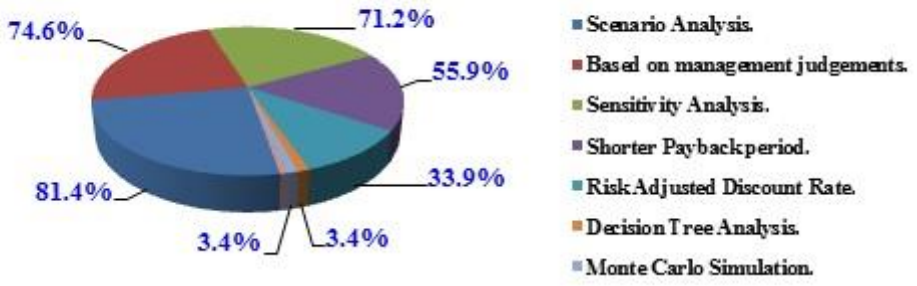
Figure 5.17: Responses to the Question Inquiring About the Tax Rates and Weights Used to Calculate the WACC

However, the results also show a notable percentage (67.8 percent) of sample firms use the book values weight when calculating their WACC. This finding contradicts the

best practices of corporate finance, because the book value does not reflect the changes in market value of either debt or equity. Therefore, a further analysis was undertaken to identify any differences in the popularity of the weights used among the different firms and CEOs characteristics. The results presented in table 5.9, show that industrial firms tend to depend less on the market value weight than financial and services firms, with a mean rating of 3.52 versus 4.30 and 4.65 that is statistically significant at 5 percent. The most rational reason for the Omani listed industrial firms' use of the book value weight is that they heavily depend on bank borrowing and this source of finance is not volatile, because the interest rates are fairly stable within the rest of the GCC countries. Therefore, depending mainly on bank borrowing allows these firms to maintain a fixed leverage ratio, and hence using the book value weight can be accepted for determining their WACC.

The survey then asked about the risk assessment followed by the Omani listed firms when selecting a proposed project. The results (Figure 5.18) show that the majority of the respondents use (almost always or always) the scenario analysis technique (81.4 percent) as a method of assessing the riskiness of proposed projects, and nearly above 70 percent of the respondents use both their management's judgements and sensitivity analysis for the same purpose.

Figure 5.18: Responses to the Question Inquiring About the Methods Used for Assessing the Risk of Proposed Projects



These results indicate that, in parallel with the popularity of using quantitative methods to assess the riskiness of projects, the Omani listed firms generally use qualitative methods as well. However, more sophisticated methods are given less consideration, namely the risk-adjusted discount rate, decision tree analysis, and Monte Carlo simulation, with 33.9, 3.4, and 3.4 percent of the respondents indicating that they (almost always or always) use these methods. These results are in line with previous studies in developed markets. For example, Ryan and Ryan (2002) reported that US firms favour sensitivity and scenario analysis as a risk analysis technique.

Trahan and Gitman (1995) reported that US firms avoid adjusting the discount rate, because it depends on impractical assumptions, is difficult to understand by the executives, and is difficult to place. The same reasoning probably applies to Omani listed firms in avoiding decision tree analysis and Monte Carlo simulation. However, I find no evidence in the existing literature showing the use of qualitative methods for assessing the risk of proposed projects by firms in developed markets. Therefore, further analysis was undertaken to identify any differences in the popularity of these methods among the different firms and CEO characteristics.

The result presented in table 5.10, shows that firms with high ROE tend to use scenario analysis to assess project risk more than firms with low ROE, with a mean rating of 4.79 verses 3.86 that is statistically significant at 5 percent. The results also show significant differences in the use of less popular methods for assessing project risk among the firms and CEO characteristics. For example, large firms in terms of total assets tend to use decision tree analysis more than small firms, with a mean rating of 1.71 versus 1.17 that is statistically significant at 1 percent. Moreover, the result shows that CEOs with long tenure tend to use the risk-adjusted discount rate more than CEOs with medium and low tenures, with a mean rating of 3.16 versus 2.21 and 2.58 that is statistically significant at 10 percent. These results imply again that, as the firm's size and performance grow, it is likely to become more experienced in using capital budgeting practices and developing them. The same applies to CEOs who spend more time in their jobs with the same firm, because they prefer to use more sophisticated methods to assess projects' riskiness. However, I find no significant differences in the use of management judgement among the different firms and CEO characteristics.

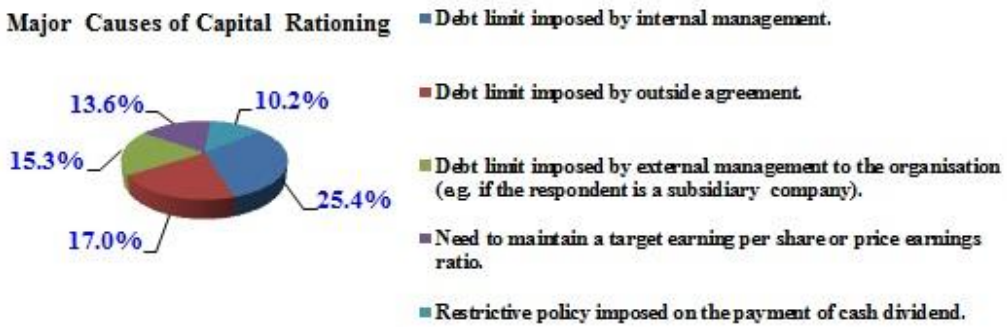
The survey then investigated the selection stage by asking about the existence of capital rationing among the Omani listed firms and the reasons for its use. The results (Figure 5.19) show that the majority of the sample firms (78 percent) do place limits on the size of their annual capital budget compared with 22 percent who do not. Additionally, few (1.7 percent) of the respondents indicated that funds were never sufficient to finance all acceptable or profitable projects, compared with 42.4 percent who indicated that sufficient funds are always available. Also, 40.7 percent of the sample firms indicated that capital funds are occasionally not sufficient to finance the

acceptable or profitable projects. This implies that lack of funds is not the reason for not implementing acceptable or profitable projects.

Figure 5.19: Responses to the Question Inquiring About the Existence of Capital Rationing and the Availability of Funds

Therefore, the survey asked about the reasons for not financing an acceptable proposal submitted for consideration. The results (Figure 5.20) show that 25.4 percent of the respondents are (almost always or always) not financing projects because of debt limits imposed by their internal management and 17 percent because of debt limits imposed by outside agreement. Furthermore, 15.3 percent of the firms are not financing their projects because of debt limits imposed by external management and 13.6 withhold financing because of the need to maintain a price earnings ratio, and 10.2 percent withhold financing because of a restrictive policies on their payment of cash dividends.

Figure 5.20: Responses to the Question Inquiring About the Reasons for NOT Financing an Acceptable Proposal Submitted for Consideration



These results show that the interference of directors of Omani listed firms in withholding the implementation of projects is lower than that found by previous studies in developed markets. For example, Mukherjee and Hingorani (1999) reported that 63 percent of US, firms apply capital rationing and 82 percent indicated that capital constraints are imposed by internal management. Mukherjee and Hingorani argued that the reasons for capital rationing are avoiding default risk, maintaining a reserve, and decreasing the influence of enthusiastic estimates.

Therefore, further analysis was undertaken to understand any differences in the

reasons of capital rationing among the different firms and CEO characteristics. The results presented in table 5.11, show that large firms in terms of sales revenue tend to withhold financing proposed projects more than small firms because of a restrictive policy on their payment of cash dividends, with a mean rating of 2.58 versus 1.93 that is statistically significant at 5 percent. Also, the firms who are managed by CEOs with a long tenure withhold more because of debt limits imposed by internal management than those firms who are managed by CEOs with medium and short tenures, with a mean rating of 3.11 versus 2.25 and 2.33 that is statistically significant at 5 percent.

These results indicate that the priority of firms that generate high sales is to pay dividends rather than reinvest in their projects. Moreover, as CEOs' tenure increases, they tend to impose further restrictions on investments, and their reasons for this may be similar to those proposed by Mukherjee and Hingorani (1999).

The survey ended investigating the selection stage by asking about the departments or divisions responsible for the selection process. The results (Figure 5.21) show that nearly 40 percent of the sample firms give the responsibility for selecting proposed projects to the finance and the accounting departments.

However, the result also shows that some of the sample firms (18.6, 15.3, and 13.6 percent) indicated that such responsibility is conducted by a dedicated team, the marketing department, and the strategic management department, respectively. A few of the sample firms (8.5 and 6.8 percent) responded that such responsibility is conducted by the operation department and external consultants, respectively. This shows that involvement of the finance department is similar to that found by previous studies. For example, Gitman and Forrester (1977) found that 60 percent of US firms give the responsibility of analysing proposed investments to their finance department.

Figure 5.21: Responses to the Question Inquiring About the Departments Responsible for Selecting Projects

In summary, the investigation succeeded in revealing several findings relating to the selection stage, as follows:

First, the majority of the Omani listed firms use the NPV to select proposed projects, followed by the PP and the IRR. Despite statements in the finance literature about the superiority of DCF methods over NDCF methods, the Omani listed firms tend to still depend on the PP as a major method when selecting proposed capital investment projects. Furthermore, the use of real options analysis as a method of selecting proposed capital investment projects is totally ignored by the Omani listed firms. A wide range of reasons are found for not using this method, but the main reason is based on the complexity of applying this method in practice. These findings are also relatively similar to the findings of studies conducted in developed markets such as the US market.

Second, the majority of the Omani listed firms depend on the WACC to calculate their cost of capital compared with nearly half using the CAPM, dividends yield, and earning yield. Moreover, the interference of qualitative measures such as depending on whatever investors require or depending on a rule of thumb as methods of calculating the cost of capital is almost non-existent within the Omani listed firms. This indicates that Omani listed firms are in line with the finance literature in using sophisticated methods for calculating the cost of capital, but they differ from the developed market firms in terms of the popular methods used which widely recognised CAPM. This is due to the characteristics of the Omani market because its financial market is underdeveloped, in which case causing the use of cost of equity methods frequently less.

Furthermore, the investigation reveals a unique finding with regard to the weights used to calculate the WACC. A notable proportion of Omani listed firms, particularly industrial firms, use the book value weight, which is considered not best practice. This is again due to the characteristics of the Omani financial market because firms depend on bank borrowing, and this source of finance is fairly stable in the rest of the GCC countries. Hence, in this case using the book value weight is more accurate in determining their WACC.

Third, the investigation reveals that Omani listed firms use qualitative methods in parallel with quantitative methods to assess the riskiness of projects. On the other hand, more sophisticated methods are given less consideration, namely the risk-adjusted discount rate, decision tree analysis, and Monte Carlo simulation. Again, I find that the trends of popularity of risk assessment methods are similar between the

Omani and developed market firms, except for the use of qualitative methods, which are considered to be unsophisticated. Furthermore, capital rationing is widely exist within the Omani market because the majority of the sample firms indicated that they put limits on the size of their capital budgets, even with the availability of funds for financing their proposed projects. However, the reasons for this phenomenon are spread, but I find that the interference of directors of the Omani listed firms in withholding the implementation of projects is lower than that found by previous studies in developed markets.

Fourth, over a third of the Omani listed firms give the responsibility of selecting their proposed capital investment projects to their finance and accounting departments, and a minority of the sample firms give this responsibility to their operation department and to external consultants. Thus, firms give high consideration to capital budgeting practices by giving the responsibility to the right departments.

Finally, three specific demographic variables enabled us to understand the differences in the use of capital budgeting practices. First, as firms grow in terms of total assets, sales, and performance, they tend to follow more sophisticated capital budgeting practices such as the use of DCF methods, the WACC, and quantitative risk analysis. The same applies to those CEOs who spend a long time in the same firm, because they tend to build experience and hence use more sophisticated capital budgeting practices.

5.5.2.3. The survey results for the post-completion review stage

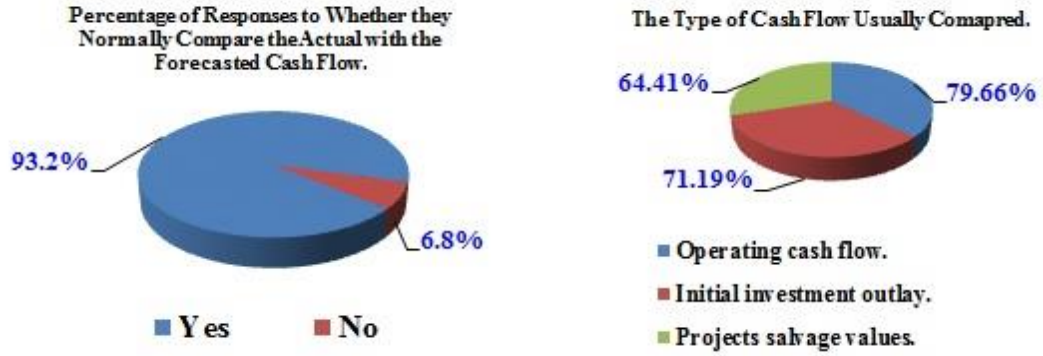
For the final stage of capital budgeting, the survey started by asking about whether the Omani listed firms conduct a formal procedure in evaluating the operating performance of all existing projects, and if so, whether they compare the estimated cash flow with the actual cash flow.

The results (Figure 5.22) show that the majority (93.2 percent) of the sample firms do normally compare actual with forecasted cash flows and almost all of the given types of cash flows are compared frequently, namely operating cash flow, investment outlay, and salvage value. Here I find that the Omani listed firms are again superior to firms in developed markets. For example, Lazaridis (2006) found that only 7 percent of firms in Greece and Cyprus compare actual and forecasted salvage values. The great emphasis is only given to the operating cash flows.

Therefore, further analysis was undertaken to identify any differences between these

types of cash flows among the different firms and CEO characteristics. The results presented in table 5.12, show that large firms in terms of total assets tend to focus more on comparing actual and forecasted operating cash flow than small firms, with a mean rating of 4.35 versus 3.71 that is statistically significant at 5 percent. However, firms with high ROE tend to compare all of the three types of cash flows more than firms with low ROE, but at a different level of significance. The highest is the project salvage value, with a mean rating of 4.21 versus 3.45 that is statistically significant at 1 percent.

Figure 5.22: Responses to the Questions Inquiring About the Existence of Formal Procedures for Evaluating the Performance of Projects



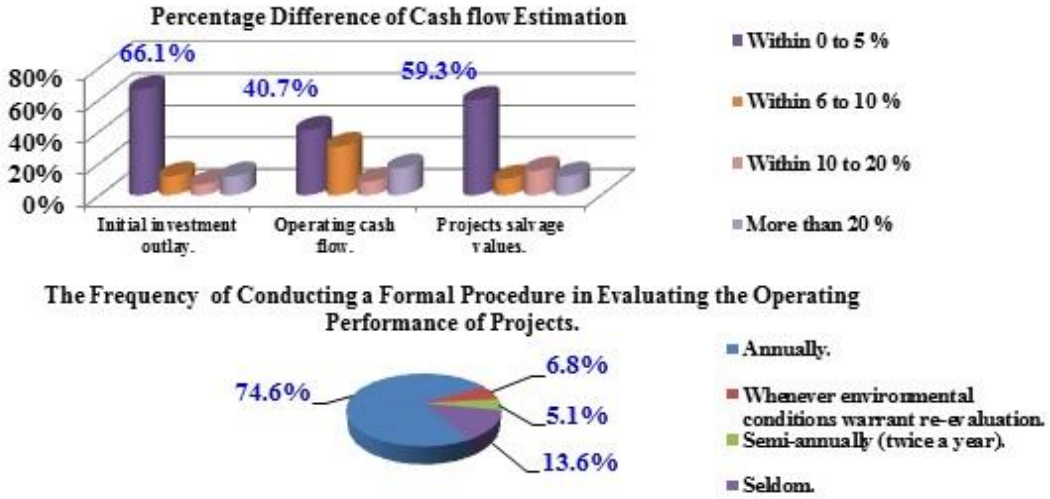
These results indicate that a large amount of attention is given to all types of cash flows, but as firms increase in size further attention is given to day-to-day operating cash flows. This is reasonable to a certain extent because there is usually a long amount of time between the implementation of the project and its abandonment, in which case several events can interfere and hence deteriorate the estimation. Therefore, relatively less attention is given to initial investment and the salvage value. The results also indicate that a large amount of attention is given to all types of cash flows by high-performing firms, which implies a link between sophisticated capital budgeting practices and firms' performance.

Thus, the overall trend of the Omani listed firms is to give reasonable attention to all of the essential cash flows. This is supported by the results (Figure 5.23) because most of the sample firms obtain a difference of 0 to 5 percent between the estimated and forecasted cash flows. Moreover, the majority (74.6 percent) of the Omani listed firms indicated that they annually conduct a formal procedure for evaluating the operating performance of all projects.

The survey ended by asking about the most difficult stage of capital budgeting practices faced by the Omani listed firms. The results (Figure 5.24) show that most of

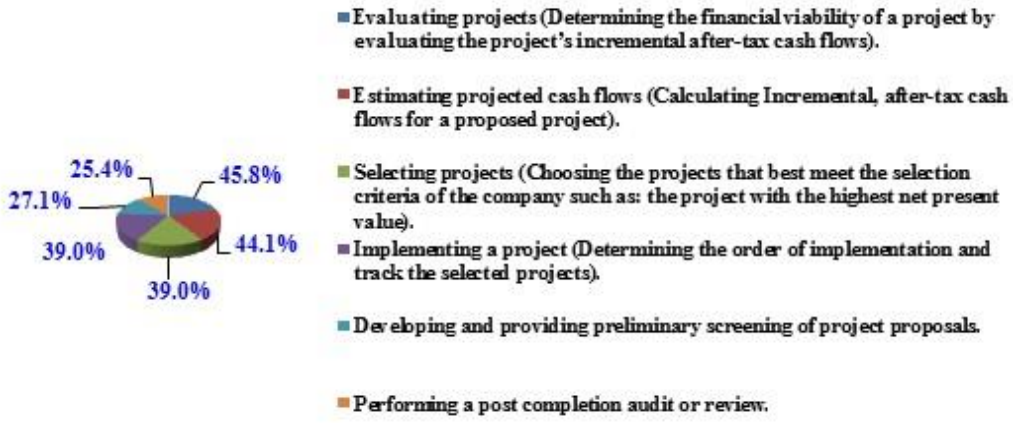
the respondents indicated that the least difficult stages of capital budgeting practices are the post-completion review stage and the screening of investment ideas stage (25.4 and 27.1 percent, respectively).

Figure 5.23: Responses to the Questions Inquiring About the Percentage Difference of Cash Flow Estimations and the Frequency of Conducting a Formal Procedure for Evaluating the Performance of Projects.



The other stages are found to be more difficult, but with almost the same level of difficulty (between 39 and 45.8 percent). Therefore, further analysis was undertaken to identify any differences in the difficulties of these stages among the different firms and CEOs characteristics. However, I find no remarkable differences as shown in table 5.13.

Figure 5.24: Responses to the Question Inquiring About the Level of Difficulty in Conducting Capital Budgeting Procedures



5.6. Conclusion

This chapter extends the existing literature relating to capital budgeting practices in three dimensions. The first dimension is the investigation of a new market that has not yet been explored, namely the Omani market. The second dimension is coverage of a

wide set of such practices from a single market in order to compare it with the existing findings in developed markets. Researchers have tended to emphasize specific elements of the selection stage, namely the selection methods and cost of capital methods. Therefore, caused a need to investigate other aspects of capital budgeting practices, including the screening of investment ideas, cash flow practices, the use of real options analysis for selecting projects, the existence of and reasons for capital rationing, the existence of post-completion review, and the most difficult stage of these practices. The third dimension is the examination of new demographic variables to improve understanding of the variances in the application of capital budgeting practices, namely the size of firms based on sales revenue, capital budget, and total assets, in addition to the performance of firms (represented by ROE) as well as the firm's ownership type and sector.

Hence, the findings in this chapter should help both researchers and investors. For researchers, the findings reveal a wide set of capital budgeting practices in the Omani market, which serves as a model of the GCC markets. Investors can rest assured that generally the investment decision making of firms in these markets is best practice according to corporate finance science.

This is because the findings generally show that the Omani listed firms do apply capital budgeting practices for almost all types and sizes of projects. Moreover, they follow regular approaches to generate cash flow information, and they incorporate the inflation effect in their estimation by using mostly sophisticated approaches, namely the gross profit per unit and real cash flow approach. Likewise, the majority of the firms give the responsibility of evaluating and selecting projects to their finance and accounts departments.

This investigation also reveals that in general the Omani listed firms use DCF methods, namely the NPV and the IRR, as well as the PP, which is considered normal practice because this can be used as supplementary method for choosing proposed projects. Moreover, the investigation provides new insights about the selection methods, in particular real options analysis, which is not used at all among the Omani listed firms, and the main reason for not using this method is its complexity in practice.

Similarly, the investigation reveals that sophisticated methods are used for the calculation of cost of capital, namely the WACC, and the interference of qualitative methods such as rule of thumb and whatever investors require, is almost ignored. Likewise, quantitative methods are used for risk assessment, namely scenario and sensitivity analysis. Moreover, capital rationing has a strong presence in the Omani market, but reasons behind it is spreads and the interference of internal management is relatively less than has been found in other markets.

In addition, the investigation reveals that the majority of the Omani listed firms do conduct a post-completion review of the implemented projects and they emphasize comparing actual and forecasted cash flows (operating, initial investment, and salvage values). The majority obtain an accurate forecast, because most of them indicate that they usually obtain 0 to 5 percent accuracy level. The Omani listed firms consider the development and the selections stages to be more difficult than the idea screening and the post-completion review stages. Nonetheless, all stages are ranked with a difficulty of below 50 percent.

However, the investigation found some abnormalities in the application of capital budgeting practices by the Omani listed firms. First, the high use of qualitative methods, namely management subjective estimates, in parallel with quantitative methods, namely scenario and sensitivity analysis, for cash flow estimation and risk assessment. However, it is logical to judge the outcome of financial tools based on reality. Second, a notable proportion of the Omani listed firms use the book value weight when calculating the WACC, and cost of equity methods are used less. However, this is predicted to be normal because of the high reliance of the firms on bank borrowing, and this source of finance is not volatile because the interest rates are fairly stable within the rest of the GCC countries. Therefore, depending mainly on bank borrowing allows these firms to maintain a fixed leverage ratio, and hence it is logical for them to use the book value weight to determine their WACC. This reliance and the lack of benchmark for the risk-free rate within the Omani market makes the frequency of using cost of equity methods relatively less frequent.

The tested demographic variables provide a good understanding of the variance in the use of capital budgeting practices among the Omani listed firms. For example, the investigation predicted that government ownership of firms may adversely affect the quality of capital budgeting practices, but the findings reveal the opposite in terms of

the selection methods because government-owned firms are in fact the lowest users of unsophisticated methods. Moreover, two out of the three newly introduced variables, namely the ROE and the firm size according to total assets, ensure that as firms grow in size and performance the more likely it is that they will use more sophisticated capital budgeting practices. Similarly, as CEOs age and their tenure advances, the more likely that they will follow more sophisticated capital budgeting practices.

Finally, the limitation of this investigation is in the administration of the survey, which is generally similar to that of other survey studies. Regardless of efforts to reduce the non-response rate, such as shortening the questionnaire as much as possible, sending the questionnaire twice by mail, assuring participants highest confidentiality, and phoning and visiting firms to encourage them to complete the questionnaire, non-response bias may still affect the results. Moreover, this investigation shows that the capital budgeting practices of the Omani listed firms are in line with the best practices in most cases and differ only slightly from the trend followed by developed markets. It will be interesting to investigate the capital budgeting practices of SMEs within the GCC markets. This is because publicly listed firms are regulated by the capital market authorities of the GCC countries and are therefore being observed and obliged to follow international standards on investment decision making and disclosure, but this is not the case with SMEs. Such research would be beneficial to the governments of GCC countries because they are currently providing large incentives such as funding and tax exemptions to expand their SME sector. Therefore, investigating the capital budgeting practices of the SME sector should reassure authorities about the sophistication of investment decision making and that they are not simply making investment decisions randomly.

Chapter 6: Concluding Remarks

This thesis makes various contributions to the corporate finance literature. The literature on long-term and short-term investments of firms is narrow, in the sense that few attempts have been made to investigate them, and most of these have focused on developed markets. The literature on capital budgeting practices is extensive, but again the international trend has emphasized investigating this subject in developed markets, and evidence from emerging markets is scarce. Moreover, almost all of these investigations have focused on a particular element of capital budgeting practices, namely the selection methods and the measurements of cost of capital.

Therefore, in this thesis I completed three investigations to extend the corporate finance literature by exploring the determinants of firms' long-term investment, the determinants of firms' short-term investment, and capital budgeting practices – all within the GCC markets. These markets serve as a model of emerging economies with a single source of income, which to a certain extent is accused of influencing firm's investments. Hence, I used pooled OLS regression for the panel data set covering the period from 2000 to 2014. I documented the factors that influence firms' investments in the GCC markets. These factors are divided into three categories: firms' external financing factors, firms' internal financing factors, and macroeconomic factors. I also used a survey questionnaire containing 23 questions to document a wide set of capital budgeting practices followed by firms listed in the Omani market, which serves as a model of the other GCC markets. The three main investigations of this thesis revealed the following key findings:

Chapter 3 found that internal financing factors are the most notable determinants of GCC firms' long-term investments, in particular the return on common equity, the volume of free cash flow, the level of depreciation, and the level of corporate tax. This is followed by external financing measures, namely the volume of equity issuing, the percentage of rate of return, and the level of financial leverage. Moreover, there is a notable positive influence of macroeconomic factors on firms' long-term investments, namely government expenditures, oil prices, and level of trade. However, the influences of macroeconomic factors are more severe on services firms than on industrial firms.

Chapter 4 found that existing studies of the determinants of firms' short-term

investments had mainly confused working capital requirements and management. Hence, this chapter defined an accurate measure of working capital requirements and provided more reliable results. However, unlike Chapter 3, the results showed that external financing measures are the most influential variables to GCC firms' short-term investment, namely the volume of equity issuing, the percentage of rate of return, the level of financial leverage, and the firm's value. This was followed by internal financing factors, namely the cash conversion cycle, free cash flow, net capital expenditures, return on assets, and growth of sales. Moreover, there is a notable positive influence of macroeconomic factors on firms' short-term investments, namely government oil revenue and the level of trade. Similarly, this chapter found that the influences of macroeconomic factors are more severe on services firms than on industrial firms.

Chapter 5 found that Omani listed firms do apply capital budgeting practices for almost all types and sizes of proposed projects. They also follow standard approaches to generate cash flow information, and they incorporate the inflation effect in their estimations by using mostly sophisticated approaches. The majority of the Omani listed firms give the responsibility of evaluating and selecting projects to their finance and accounts departments.

Chapter 5 also found that the Omani listed firms mostly use DCF methods and the PP. It also provided new insights into the selection methods, namely real options analysis, because this method was found to not be used at all among the Omani listed firms. Their main reason for not using this method is its complexity in practice. Similarly, the chapter found that sophisticated methods are used for the calculation of cost of capital, namely the WACC, and the interference of qualitative methods such as rule of thumb and whatever investors require is almost ignored. Likewise, quantitative methods are used for risk assessment, namely scenario and sensitivity analysis, in parallel with qualitative methods, namely management subjective estimation.

Chapter 5 further revealed that capital rationing has a strong presence in the Omani market, but reasons behind it is spread and the interference of internal management is relatively less than that found in developed markets. In addition, the mainstream of the Omani listed firms do conduct a post-completion review on an annual basis and they place great emphasis on comparing actual and forecasted cash flows. The Omani listed

firms consider the development and the selection stages to be more difficult than the screening of ideas and the post-completion review stages.

Chapter 5 also found that the tested demographic variables provided a good understanding of the variance in the use of capital budgeting practices among the Omani listed firms. For example, the results revealed an opposite outcome to that expected by the government ownership of firms, because in fact government-owned firms were found to be the lowest users of unsophisticated methods. Moreover, two out of the three newly introduced variables, namely the ROE (representing firm performance) and the firm size according to total assets, provide reassurance that as firms grow in size and performance the more likely they are to use sophisticated capital budgeting practices. Similarly, as CEOs age and their tenure advances the more likely they are to follow sophisticated capital budgeting practices.

Hence, the findings of this thesis are generally in line with the existing findings in other markets. The notable differences are as follows:

Chapter 3 found that the influence of dividends is not as severe on GCC firms' long-term investments compared with the documented influence in the US. Moreover, the chapter revealed that government expenditures and level of trade positively influence GCC firms' long-term investments compared with the negative influence documented in the Bangladeshi market.

Chapter 4 found that the market value (represented by Tobin's q) positively affects GCC firms' short-term investments compared with that documented in Canada. Moreover, the chapter found that the cash conversion cycle negatively affects GCC firms' short-term investments compared with that documented in Canada.

Chapter 5 found that a notable proportion of the Omani listed firms use the book value weight when calculating the WACC, and the use of cost of equity methods is relatively low. These findings contradict those documented in the US market.

However, all of these differences are explainable, and hence the contributions of this thesis provide important implications to investors, governments, finance professionals, decision makers and researchers.

Potential investors in emerging markets with a single source of income should not withhold from investing in these markets based on the idea that such markets cannot be sustained. This thesis documents a notable effect between GCC firms' investments

and oil-related factors such as government expenditures, government revenue, oil prices, and level of trade. The effect is mainly positive, but is not spread in all the market sectors. For instance, the long-term and short-term investments of GCC industrial firms are found to be mainly influenced by their external and internal financing factors. Hence, their investments are mainly influenced based on the financing strategies of the firms' decision makers, rather than on macroeconomic factors. Moreover, the firms are found to implement investment procedures mainly in a sophisticated manner and in line with the practices followed in developed markets, particularly the US market.

The governments of countries with a single source of income should assess the strengths and weakness of their economic sectors. Such assessment will help them to better understand which sectors are affected by the macroeconomic factors related to their single source of income. This thesis provides evidence that the GCC governments' efforts to diversify their economies have succeeded to a certain extent, but further attention is required for the services sector. This thesis shows that the long-term and short-term investments of GCC services firms are influenced severely by the macroeconomic factors related to their national income. For their long-term investments, the influence of government expenditures (representing fiscal policy), oil prices, and level of trade is strong. For their short-term investments, the influence of government revenues (representing monetary policy) and level of trade is also strong.

All of these factors indicate that services firms depend on local markets to conduct their business. For instance, an increase in government expenditures provides more domestic projects, and firms will invest more in their assets to deliver them. An appreciation in oil prices relatively depreciates the GCC currencies, and hence the services provided by firms become relatively more marketable and exportable. This will raise the firm's revenues and hence allows investment in long-term assets. Moreover, an increase in government revenues reduces the interest rates, which enable firms to finance short-term investments more cheaply. However, the fluctuation in government revenues creates a fluctuation in interest rates, and hence may affect the firm's desire to finance short-term investments.

Therefore, GCC authorities should provide more facilities to encourage their services firms to export their services rather than depending on domestic projects, which are mainly created by the governments. More stable lending facilities are also required to

stabilize services firms that are financing short-term investments. Implementing these propositions should reduce the dependency of the services sectors on domestic markets and create a non-oil dependent economy.

Finance professionals and decision makers in the GCC markets should use the findings of this thesis as a guide for the most influential factors that affect firms' long-term and short-term investments. The demographic factors also indicate the sophistication and experiences of conducting capital budgeting practices. Accordingly, both investment decisions and financing decisions can be set to achieve firms' main goal, which is to maximize shareholders' wealth.

Finally, this thesis is one of the rare studies to investigate the factors that influence firms' long-term and short-term investments as well as the procedures used to assess and implement these investments in the GCC region. However, it faces some limitations, which mainly pertain to the unavailability of data. The scarcity of macroeconomic data means that it was not possible to investigate other important variables predicted to affect firms' long-term and short-term investments, namely the level of education and the level of institutional effect. Moreover, the scarcity of firm level data means that it was not possible to investigate other important variables predicted to affect firms' capital budgeting practices, namely the size of the board of directors and CEO duality.

When these data become available, researchers should use the limitations of this thesis as a route for further research. It would also be interesting to investigate the determinants of SMEs' long-term and short-term investments and their capital budgeting practices across the GCC markets. This is because publicly listed firms are regulated by the capital market authorities of the GCC countries, and hence, they are being observed and obliged to follow international standards with regard to investment decision making and disclosure, which is not the case with SMEs.

Such an investigation would be beneficial to both governments and SMEs' decision makers in the GCC countries because the GCC governments currently provide large incentives such as funding and tax exemptions to expand their SME sector. Therefore, investigating these aspects of corporate finance should reassure authorities about the level of sophistication of SMEs' investment decision making and that they do not simply make random decisions. It should also provide a guide for SMEs decision

makers about the most influential factors that affect their long-term and short-term investments and the most suitable procedures to conduct sophisticated investment assessments and selections.

Appendixes

Appendix I: A Presentation of Survey Studies on Capital Budgeting Practices in Developed and Emerging Markets.

Table 5.1: The Survey Studies Of Capital Budgeting Practices in Developed and Emerging Markets.

Panel (A): Capital Budgeting Surveys in Developed Markets.

Survey Year	Survey Author(s)	Method	Responses	Country	The Sample Origin
1959	Istvan (1961)	Interview	48	U.S	67 percent from large industrials.
1969	Williams (1970)	Questionnaire	100	U.S	Fortune 500 and 29 small manufacturing firms.
1959, 64, and 70	Klammer (1972)	Questionnaire	184	U.S	Compustat large industrial firms.
Early 1970s	Petty, Scott, and Bird (1975)	Questionnaire	109	U.S	Fortune 500.
1971	Fremgen (1973)	Questionnaire	177	U.S	Dun & bradstreet reference book.
1972	Brigham and Pettway (1973)	Questionnaire	53	U.S	Compustat public utilities.
1976	Gitman and Forrester (1977)	Questionnaire	103	U.S	74 percent from large industrial firms.
1975 and 79	Kim and Farragher (1981)	Questionnaire	200	U.S	Fortune 1000.
1980	Scapens and Sale (1981)	Questionnaire and Interviews	205	U.S	Fortune 500.
1980	Gitman and Mercurio (1982)	Questionnaire	177	U.S	Fortune 500.
1982	Stanley and Block (1984)	Questionnaire	121	U.S	Fortune 1000 multinationals.
1983	Farragher (1986)	Questionnaire	149	U.S	Fortune service 500 directory.
1985	Kim, Crick, and Kim (1986)	Questionnaire	367	U.S	Fortune 1000
1985	Mukherjee (1988)	Capital budgeting Manuals	60	U.S	Fortune 500.
1986	Pohlman et al (1988)	Questionnaire	252	U.S	Fortune 500.
1988	Gordon and Myers (1991)	Questionnaire	282	U.S	Executives and directors of large industrial firms.
1992	Shao and Shao (1996)	Questionnaire	188	U.S	Directors of foreign subsidiaries of industrial firms.
1992	Trahan and Gitman (1995)	Questionnaire	84	U.S	Fortune 500 CFOs plus Forbes 200 CFOs.
1992	Burns and Walker (1997)	Questionnaire	180	U.S	Fortune 500.
1996-97	Bruner et al (1998)	Phone survey	44	U.S	CFOs and financial advisors.
1992-93	Mukherjee and Hingorani (1999)	Questionnaire	102	U.S	Fortune 500 CFOs.

Continued Panel (A): Capital Budgeting Surveys in Developed Markets.

Survey Year	Survey Author(s)	Method	Responses	Country	The Sample Origin
1999	Graham and Harvey (2001)	Questionnaire	392	U.S	Executives Institute corporations.
1999	Triantis and Borison (2001)	Interviews	39	U.S	Executives of large firms.
1999	Ryan and Ryan (2002)	Questionnaire	205	U.S	CFOs of fortune 1000.
Not Available	Apap and Masson (2005)	Questionnaire	44	U.S	207 Utility Firms listed in Value Line.
2003	Meier and Tarhan (2007)	Questionnaire	127	U.S	CRSP and Compustat data.
2005	Block (2007)	Questionnaire	40	U.S	Fortune 1000.

Panel (B): Capital Budgeting Surveys in Emerging Markets.

Survey Year	Survey Author(s)	Method	Responses	Country	The Sample Origin
1996	George and Chong (1998)	Questionnaire	54	Singapore	211 listed firms in the stock exchange of Singapore.
Not Available	Anand (2002)	Questionnaire	81	India	525 manufacturing firms.
Not Available	Pereiro (2006)	Questionnaire	55	Argentina	62 firms across the Argentinean economy
Not Available	Verma et al.(2009)	Questionnaire	15	India	100 manufacturing firms which operates in different cities in India.
2008	Al Mutairi et al, (2009)	Questionnaire	80	Kuwait	Listed firms in the stock exchange of Kuwait.
2006	Khamees, et al (2010)	Questionnaire and interview	53	Jordan	81 industrial corporations in Jordan.
Not Available	Abdelaziz, et al (2010)	Questionnaire	38	GCC	479 listed firms across the GCC markets.
2010	Dangol et al. (2011)	Questionnaire	40	Nepal	67 Nepali manufacturing firms.
Not Available	Singh et al. (2012)	Questionnaire	8	India	166 non-financial companies of the BSE 200 index.
Not Available	Tufuor and Doku (2013)	Questionnaire and interview	8	Ghana	20 listed Ghanaian firms.
Not Available	Mbabazize and Daniel (2014)	Questionnaire	30	Rwanda	30 firms of both public and private sectors.
Not Available	Koralalage (2014)	Questionnaire	50	Sri Lanka	100 leading business organizations in Sri Lanka

Panel (A) provides a list of survey studies of capital budgeting practices of U.S firms and panel (B) provides a list of survey studies of capital budgeting practices in different emerging markets. The surveys years differs from the publication year of the survey. However, most of the surveys conducted in emerging markets didn't mention the year of the survey. The responses reported as the number of firms and not the percentage of sample size. Finally, some of the source of information on panel (A) is based on (Haka, 2007:706) and (Burns and Walker, 2009: 81).

Appendix II: A Presentation of Survey Studies in Emerging Markets that illustrate their Investigated Capital Budgeting Stages.

Table 5.2: Indicating The Capital Budgeting Surveys According To Its Four Stages In Emerging Markets.

	Authors of Survey Studies Of Capital Budgeting Practices In Emerging Markets											
	George and Chong (1998)	Anand (2002)	Pereiro (2006)	Verma, et al (2009)	Al Mutairi, et al (2009)	Abdelaziz, et al (2010)	Khamees, et al (2010)	Dangol et al. (2011)	Singh et al. (2012)	Tufuor and Doku (2013)	Mbabazize and Daniel (2014)	Koralalage (2014)
Capital Budgeting Stages:												
I- The Identification Stage:												
A: Source of Ideas Origination							✔		✔			
B: Reasons for Ideas Origination												
C: Process of Submission												
D: The Outline of Origination												
II- The Development Stage:												
A:The responsibility of Screening												
B: Screening Process & Cash flow Estimation							✔	✔		✔	✔	
C: Responsibility of this stage												
II- The Selection Stage:												
A: Classification of Projects												
B:The Personnel Responsible												
C: Selection Methods Used	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
D:Reasons for using Methods												
E: Risk Recognition.												
F: Risk Assessment Methods.	✔			✔			✔	✔		✔		
G: Risk Adjustment												
H: Extent of Capital Rationing	✔							✔	✔			
I: Capital Rationing Rationale												
J: Capital Rationing Methods.												
K: cost of capital Methods	✔	✔	✔	✔	✔	✔		✔		✔	✔	
L:Project Approval												
III- Post Completing Audit:												
A: The Extent of Post Audit.								✔				
B: Personnel Involved.												
C: Performance Measurements.												
D: Punishment & Reward System.												
IV-The Most Difficult Stage:												

The table provide information about the studies conducted in emerging markets with an objective to investigate the capital budgeting practices. The four stages are listed and their sub-procedures. The illustration of this information shows that the emphasis of past studies are mainly on the selection stage of capital budgeting, precisely the selection methods and the methods of calculating cost of capital.

Appendix III: A Sample of the English and Arabic Versions of the Questionnaire and the Enclosed Documents:

THE QUESTIONNAIRE COVERING LETTER

To The Attention of: Chief Executive Officer

Dear Sir or Madam

Subject: An Invitation to Participate In a Survey Study.

Due to the significant role played by the private sector in any economy and to the important role played by the investment process in contributing to the firm overall success, there is a continues research interest to examine the investment decision process among different firms in different countries. This research interest emerged from the desire to explore whether differences in capital budgeting practices exist and to explore its determinants.

Therefore, I would like to invite you to participate in a study that aims to explore the current capital budgeting practices within the Omani listed firms. The results will enable us to confront theories with practices as well as comparing them with results from different markets.

This survey is a part of a PhD project titled: (An Investigation of Capital Budgeting Practices: Evidence from the Sultanate of Oman). The undersigning assures you that all data will be processed on an ANONYMOUS basis and responses will be treated STRICTLY CONFIDENT, and NO details of any individual or organization will be available to any other party.

Finally, I enclose for your kind attention the questionnaire and a returned paid envelope, with a hope to receive your feedback by.../.../2014

Please do not hesitate to contact me if you require any further information or have any query about the survey.

Yours sincerely,

Mahmood Ali Khalfan Al Wahaibi
Economics and Finance PhD Candidate
GSM: 00968 99341750/00447767991617
Email: Mahmood.Al-Wahaibi@brunel.ac.uk

□ Copies of the study detailing the full results of the survey will be sent free of charge to participants, please tick this box if you wish to get one and write your postal address:

_____.

1. **Which of the following circumstances requires your firm to use capital budgeting practices? You may choose more than one answer.**

   - ◻ Acquiring a new Business or Asset.
   - ◻ Research and Developments Plans.
   - ◻ Expansion of an Existing Business.
   - ◻ Replacement projects.
   - ◻ Leasing.
   - ◻ Abandonment.
   - ◻ Foreign operations.
   - ◻ Others, please specify _____.

2. **Does your firm conduct a formal quantitative analysis for EVERY proposed capital investment project?**

   ◻ Yes ◻ No

   - **If you chose (Yes), then kindly proceed to question number 3.**
   - **If you chose (NO), what is the value of the project size that requires a formal quantitative analysis in your firm? You may choose more than one answer.**

     (Numbers are in thousands OMR)

     ◻ between 0 to 49
     ◻ between 50 to 99
     ◻ between 100 to 499
     ◻ between 500 to 999
     ◻ between 1,000 to 4,999
     ◻ Greater than 5,000

3. **Which departments or divisions are responsible for the evaluation of a proposed capital investment project? You may choose more than one.**

   ◻ Accounting Department. ◻ Research and Development Department. ◻ Strategic Management Department.
   ◻ Finance Department. ◻ Operations Department. ◻ External Consultants.
   ◻ Marketing Department. ◻ Dedicated Team. ◻ Other, please specify _____.

4. **Which departments or divisions are responsible for the selection of a proposed capital investment project? You may choose more than one.**

   ◻ Accounting Department. ◻ Research and Development Department. ◻ Strategic Management Department.
   ◻ Finance Department. ◻ Operations Department. ◻ External Consultants.
   ◻ Marketing Department. ◻ Dedicated Team. ◻ Other, please specify _____.

5. **Which of the following best describe your firm's procedures for generating information about its future cash flows? You may choose more than one.**

   ◻ The company provides a standard procedure for estimating items like taxes, depreciation and salvage values.
   ◻ The company has standard forms to collect cash flows data and other investment information.
   ◻ The company requires the use of a standard model for forecasting cash flows.
   ◻ The company does not have any standard procedure for generating cash flow information.
   ◻ Other, please specify _____.

6. **How frequently does your firm use the following forecasting methods to generate cash flow estimates? On a scale of 1 to 5, where 1= Never (0%), 2= Usually Never (25%), 3= Occasionally (50%), 4= Almost Always (75%) and 5= Always (100%).**

1	2	3	4	5	
◻	◻	◻	◻	◻	Management's subjective estimates.
◻	◻	◻	◻	◻	Consensus of expert's opinion.
◻	◻	◻	◻	◻	Computer simulation.
◻	◻	◻	◻	◻	Scenario analysis.
◻	◻	◻	◻	◻	Sensitivity analysis.
◻	◻	◻	◻	◻	Probability analysis.
◻	◻	◻	◻	◻	Other, please specify _____.

7. **While conducting capital expenditure proposals, do you adjust projected cash flows for inflation?** □Yes □ No

- **If you chose (No), then kindly proceed to question number 8.**
- **If you chose (Yes), how frequently are the following methods used by your firm in adjusting cash flow estimates for inflation?**
  On a scale of 1 to 5, where 1= Never (0%), 2= Usually Never (25%), 3= Occasionally (50%), 4= Almost Always (75%) and 5= Always (100%).

1	2	3	4	5	
□	□	□	□	□	Gross Profit per Unit Approach.
□	□	□	□	□	Nominal Cash Flow Approach.
□	□	□	□	□	Real Cash Flow Approach.
□	□	□	□	□	Other, please specify _____.

8. **Once the capital expenditure proposals are implemented, do you normally compare the actual with the forecasted cash flows?** □Yes □No

- **If you choose (NO), then kindly proceed to question number 9.**
- **If you choose (Yes), how frequently are the following actual and estimated cash flows are compared?**
  On a scale of 1 to 5, where 1= Never (0%), 2= Usually Never (25%), 3= Occasionally (50%), 4= Almost Always (75%) and 5= Always (100%).

1	2	3	4	5	
□	□	□	□	□	Initial investment outlay.
□	□	□	□	□	Operating cash flow.
□	□	□	□	□	Projects salvage values.
□	□	□	□	□	Other, please specify _____.

- **What is the percentage difference usually arising when comparing the following cash flow components in your firm? Please choose one per each cash flow.**

Within 0 to 5 %	Within 6 to 10 %	Within 10 to 20 %	More than 20 %	
□	□	□	□	Initial investment outlay.
□	□	□	□	Operating cash flow.
□	□	□	□	Projects salvage values.
□	□	□	□	Other, please specify _____.

9. **How frequently does your firm conduct a formal procedure in evaluating the operating performance of all existing projects?** You may choose more than one.

- □ Annually.
- □ Whenever environmental conditions warrant re-evaluation.
- □ Semi-annually (twice a year).
- □ Seldom.

10. **How frequently are the following techniques used when deciding which projects or acquisitions to pursue by your firm?**
  On a scale of 1 to 5, where 1= Never (0%), 2= Usually Never (25%), 3= Occasionally (50%), 4= Almost Always (75%) and 5= Always (100%).

1	2	3	4	5	
□	□	□	□	□	Net Present Value (NPV)
□	□	□	□	□	Internal Rate of Return (IRR)
□	□	□	□	□	Modified Internal Rate of Return (MIRR)
□	□	□	□	□	Accounting Rate of Return.
□	□	□	□	□	Payback Period.
□	□	□	□	□	Discounted Payback Period.
□	□	□	□	□	Adjusted present Value.
□	□	□	□	□	Profitability Index.
□	□	□	□	□	Real Options Analysis.
□	□	□	□	□	Other, please specify _____.

11. **Does your firm use the real options technique when deciding which projects or acquisitions to pursue by your firm?** □Yes □No

- **If you chose (Yes), then kindly proceed to question number 12.**
- **If you chose (No), then kindly proceed to question number 13.**

12. **Please choose the reasons for using the real options analysis when deciding which projects or acquisitions to pursue by your firm? You may choose more than one.**

- □ Provides a management tool to help form a strategic vision.
- □ Incorporates managerial flexibility into the analysis.
- □ Provides a way of thinking about uncertainty and its effect on valuation over time.
- □ Complements traditional capital budgeting techniques.
- □ Provides an analytical tool to deal with uncertainty.
- □ Provides a long-term competitive advantage through better decision making.
- □ Others, please specify _____.

13. **Please select the reasons for NOT using the real options analysis when deciding which projects or acquisitions to pursue by your firm? You may choose more than one.**

- □ Lack of expertise or knowledge.
- □ Too complex to apply in practice.
- □ Lack of applicability to our business.
- □ Difficulty of estimating inputs.
- □ Requires unrealistic assumptions.
- □ Does not help managers make better decisions.
- □ Limited support for real-world applicability of real options models.
- □ Requires many internal resources.
- □ Other, please specify _____.

14. **How frequently are the following techniques used by your firm when determining its cost of capital?**

On a scale of 1 to 5, where 1= Never (0%), 2= Usually Never (25%), 3= Occasionally (50%), 4= Almost Always (75%) and 5= Always (100%).

1	2	3	4	5	
□	□	□	□	□	Whatever our investors require.
□	□	□	□	□	Role of thumb.
□	□	□	□	□	Weighted Average Cost of Capital (WACC).
□	□	□	□	□	Cost of Debt.
□	□	□	□	□	Earnings yield
□	□	□	□	□	Capital Assets Pricing Model (CAPM).
□	□	□	□	□	Average Historical return on common stock.
□	□	□	□	□	Dividend yield
□	□	□	□	□	Other, please specify _____.

15. **Does your firm use the WACC to calculate your firm cost of capital?** □Yes □No

- **If you chose (Yes), then kindly proceed to question number 16 and 17.**
- **If you chose (No), then kindly proceed to question number 18.**

16. **How frequently are the following tax rates used when calculating your firm after tax cost of debt?**

On a scale of 1 to 5, where 1= Never (0%), 2= Usually Never (25%), 3= Occasionally (50%), 4= Almost Always (75%) and 5= Always (100%).

1	2	3	4	5	
□	□	□	□	□	Current Statutory tax rate.
□	□	□	□	□	Minimum alternative tax.
□	□	□	□	□	Other, please specify _____.

17. **How frequently are the following weights used when calculating your firms WACC?**

On a scale of 1 to 5, where 1= Never (0%), 2= Usually Never (25%), 3= Occasionally (50%), 4= Almost Always (75%) and 5= Always (100%).

1	2	3	4	5	
□	□	□	□	□	Book value weights.
□	□	□	□	□	Market value weights.
□	□	□	□	□	Target capital structure weights.
□	□	□	□	□	Other, please specify _____.

18. **How frequently are the following risk analysis techniques used by your firm when deciding which projects or acquisitions to pursue?**

On a scale of 1 to 5, where 1= Never (0%), 2= Usually Never (25%), 3= Occasionally (50%), 4= Almost Always (75%) and 5= Always (100%).

1	2	3	4	5	
□	□	□	□	□	Sensitivity Analysis.
□	□	□	□	□	Based on management judgements.
□	□	□	□	□	Scenario Analysis.
□	□	□	□	□	Shorter Payback period.
□	□	□	□	□	Decision Tree Analysis.
□	□	□	□	□	Monte Carlo Simulation.
□	□	□	□	□	Risk Adjusted Discount Rate.
□	□	□	□	□	Other, please specify_____.

19. **Does your firm place a limit on the size of its annual capital budget?** □ **Yes** □ **No**

- **If you chose (Yes), then kindly proceed to question number 20.**
- **If you chose (NO), then kindly proceed to question number 22.**

20. **In your experience, has the supply of funds been sufficient to finance all the acceptable proposals submitted for consideration within your firm? Please choose one answer.**

□ Always sufficient funds available for proposals.

□ Occasionally capital funds not sufficient for proposals.

□ Never sufficient funds for all proposals selected.

21. **How frequently the following reasons could apply for not financing an acceptable proposal submitted for consideration?**
On a scale of 1 to 5, where 1= Never (0%), 2= Usually Never (25%), 3= Occasionally (50%), 4= Almost Always (75%) and 5= Always (100%).

1	2	3	4	5	
□	□	□	□	□	Debt limit imposed by outside agreement.
□	□	□	□	□	Debt limit imposed by external management to the organisation (e.g. if the respondent is a subsidiary company).
□	□	□	□	□	Debt limit imposed by internal management.
□	□	□	□	□	Restrictive policy imposed on the payment of cash dividend.
□	□	□	□	□	Need to maintain a target earning per share or price earnings ratio.
□	□	□	□	□	Other, please specify _____.

22. **How frequently are the following capital budgeting procedures considered difficult to conduct at your firm?**
On a scale of 1 to 5, where 1= Never (0%), 2= Usually Never (25%), 3= Occasionally (50%), 4= Almost Always (75%) and 5= Always (100%).

1	2	3	4	5	
□	□	□	□	□	Developing and providing preliminary screening of project proposals.
□	□	□	□	□	Estimating projected cash flows (Calculating Incremental, after-tax cash flows for a proposed project).
□	□	□	□	□	Evaluating projects (Determining the financial viability of a project by evaluating the project's incremental after-tax cash flows).
□	□	□	□	□	Selecting projects (Choosing the projects that best meet the selection criteria of the company such as; the project with the highest net present value).
□	□	□	□	□	Implementing a project (Determining the order of implementation and track the selected projects).
□	□	□	□	□	Performing a post completion review.

Please provide a brief comment stating the reason behind the difficulties you stated above:-

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23. **Please tick one box from each of the following categories that best describes your firm:**

The Last Year Sales Revenue (Thousands OMR)

- ☐ Less than 100
- ☐ 100 – 499
- ☐ 500 – 999
- ☐ 1,000 – 9,999
- ☐ 10,000 – 49,999
- ☐ 50,000 – 99,999
- ☐ 100,000 – 499,999
- ☐ 500,000 – 1,000,000
- ☐ Greater than 1billion

The Last Year Annual Capital Budget (Thousands OMR)

- ☐ Less than 100
- ☐ 100 – 499
- ☐ 500 – 999
- ☐ 1,000 – 9,999
- ☐ 10,000 – 49,999
- ☐ 50,000 – 99,999
- ☐ 100,000 – 499,999
- ☐ 500,000 – 1,000,000
- ☐ Greater than 1billion

Ownership

- ☐ Government.
- ☐ Private.
- ☐ Both

CEO tenure (time at the current job)

- ☐ 4 years or less
- ☐ 4 to 9 years
- ☐ More than 9 years

Age of CEO

- ☐ Less than 40 years
- ☐ 40 to 49 years
- ☐ 50 to 59 years
- ☐ 60 years or Greater.

CEO Education Level

- ☐ Below University.
- ☐ University Level.
- ☐ Postgraduate Level.
- ☐ Other, please specify _____.

The Last Year Total Assets (Thousands OMR)

- ☐ Less than 100
- ☐ 100 – 499
- ☐ 500 – 999
- ☐ 1,000 – 9,999
- ☐ 10,000 – 49,999
- ☐ 50,000 – 99,999
- ☐ 100,000 – 499,999
- ☐ 500,000 – 1,000,000
- ☐ Greater than 1billion

Age of the firm

- ☐ Less than 5 years
- ☐ 5 to 9 years
- ☐ 10 to 15 years
- ☐ 16 to 19 years
- ☐ 20 to 25 years
- ☐ More than 25 years

The Last Year Return on Equity (ROE)

- ☐ 0-9 %
- ☐ 10 -14 %
- ☐ 15 – 19 %
- ☐ 20 – 24 %
- ☐ 25 % or Greater.

Sector

- ☐ **Financial.**
- ☐ **Services.**
- ☐ **Industrial.**

The Survey Ticker Job Title

- ☐ **CEO** ☐ **CFO**
- ☐ **Other, please specify**_____.

THANK YOU for completing this survey!

Kindly return the responses by.../../2014 via any of the following methods:-

- **By Post:** .....
- **By Email:** .....
- **By Fax:** .....

بسم الله الرحمن الرحيم

لعناية: المديـــــر التنفيـــــذي الـمحترم،،،

تحيـــة طيبـــة... وبعـــد،،،

الموضوع: دعوة للمشاركة في دراسة مسحية.

من منطلق الدور الكبير الذي تقوم به القطاعات الخاصة في نمو الإقتصاديات بشكل عام، وإلى الدور الهام الذي تسهم به عملية الإستثمارات في نجاح الشركات بشكل خاص، نشأت هنالك أهتمامات بحثية عدة حول العالم لدراسة عملية أتخاذ القرارات الإستثمارية المتبعة لدى الشركات، وعلى وجه الخصوص تلك القرارات المتعلقة بالإستمارات طويلة الأمد.

وبناءً على ما تقدم، أود أن أدعوكم للمشاركة في دراسة مسحية تهدف إلى أستطلاع الممارسات المتبعة من قبل الشركات العمانية في إعداد مقترحاتها الإستثمارية للمشروعات طويلة الأمد أو المشروعات الرأس مالية، وذلك من خلال تعبئة الأستبيان المرفق طي هذه الرسالة.

ومن خلال مساهمتكم في هذه الدراسة، سوف يتمكن الباحث الموقع أدناه من جمع البيانات المطلوبة وتحليلها، ومن ثم إعداد ملخص بالنتائج التي سوف تظهر نوعية الممارسات المتبعة من قبل الشركات العمانية في إعداد مقترحاتها الإستثمارية الرأس مالية، ومقارنتها بالنظريات العلمية المتعلقة بها، وكذلك الممارسات المتبعة لدى الأسواق العالمية الأخرى، وعليه سوف تظهر هذه الدراسة الآليات والإجراءات المتبعة في هذا الخصوص لكل قطاعات السوق العمانية، بحيث تعود بالنفع على المختصين بإجراء المقترحات الإستثمارية لدى الشركات العمانية من خلال الإطلاع على النهج العام المتبع في إعداد المقترحات الإستثمارية سواء في القطاع التي تنتمي إليه شركتهم في السوق العمانية أو الممارسات المتبعة في الأسواق العالمية الأخرى.

كما أود أن أؤكد لكم بأنه سوف يتم معاملة كافة الردود والبيانات المتعلقة بها بسرية تامة، ولن يتم إتاحة أية تفاصيل خاصة بأي فرد أو شركة لأي طرف آخر عدا الباحث الموقع أدناه ولغرض الدراسة المذكورة أعلاه، والتي تعتبر جزء من مشروع رسالة دكتوراة بعنوان (أستطلاع الممارسات المتبعة في إعداد المقترحات الإستثمارية الرأس مالية: أدلة من سلطنة عمان).

وأخيرًا، أرفق لحضرتكم رسالة تزكية من الملحق الثقافي العماني بسفارة سلطنة عمان في المملكة المتحدة والإستبيان المراد تعبئته من قبلكم، أملاً الحصول على ردكم بتاريخ أقصاه يوم 15 مايو 2014م، وكما أرجوا عدم التردد في التواصل مع الموقع أدناه في حالة رغبتكم الحصول على مزيد من المعلومات.

وتفضلـــوا بقبـــول فائـــق الاحتـــرام والتقديـــر،،،

مـحمـــــود بـــن علـــي بـــن خلفـــان الـــوهـيبـي،
طـــــالب بمرحلة الـدكتوراة – قسم الإقتصاد والتمويل
جـــــامعـــة بـــروتيـل – كلية العـــلوم الإجتماعيـــة
الهاتـــــف: 0044776799161 7-00968993417 50
البريد الإليكتروني: Mahmood.Al-Wahaibi@Brunel.ac.uk

يرجى كتابة البريد الإلكتروني في حال رغبتكم الحصول على نسخة من الدراسة ونتائجه:

.....

1. أي من الظروف التالية تتطلب من شركتكم الإستعانة بممارسات الميزانية الرأسمالية؟ يمكنك إختيار أكثر من إجابة واحدة.

□ الإستحواذ على شركة أو أصول جديدة.
□ خطط الأبحاث والتطويرات.
□ التوسع في الأعمال التجارية القائمة.
□ مشاريع الإحلال.
□ التأجير.
□ إغلاق مشاريع.
□ العمليات الخارجية.
□ يرجى ذكر أية ظرف لم يذكر أعلاه: _____.

2. هل يتم إعداد تحليل كمي أو دراسة جدوى لكل مشروع إستثماري رأس مالي مقترح لدى شركتكم ؟ □ نعم □ لا

• إذا اخترت (نعم)، يرجى الانتقال إلى السؤال رقم 3.

• إذا اخترت (لا)، ما هي قيمة المشروع الذي يتطلب تحليلاً كميًا أو دراسة جدوى لدى شركتكم؟ يمكنك إختيار أكثر من إجابة واحدة.

(أرقام بآلاف الريال العماني)

□ من 0 إلى 49 □ من 500 إلى 999
□ من 50 إلى 99 □ من 1,000 إلى 4,999
□ من 100 إلى 499 □ أكثر من 5,000

3. أي من الإدارات أو الأقسام التالية تُعنى بمسؤولية تقييم المشاريع الإستثمارية الرأس مالية مقترحة لدى شركتكم؟ يمكنك إختيار أكثر من إجابة واحدة.

□ دائرة المحاسبة. □ دائرة البحوث والتنمية. □ قسم الإدارة الإستراتيجية.
□ دائرة التمويل. □ دائرة العمليات. □ أستشاريون من خارج الشركة.
□ دائرة التسويق. □ فريق متخصص. □ يرجى ذكر أية جهة لم تذكر من ضمن الخيارات _____.

4. أي الإدارات أو الأقسام التالية يُعنى بمسؤولية اختيار المشاريع الإستثمارية الرأس مالية مقترحة لدى شركتكم ؟ يمكنك إختيار أكثر من إجابة واحدة.

□ دائرة المحاسبة. □ دائرة البحوث والتنمية. □ قسم الإدارة الإستراتيجية.
□ دائرة التمويل. □ دائرة العمليات. □ أستشاريون من خارج الشركة.
□ دائرة التسويق. □ دائرة مخصص. □ يرجى ذكر أية جهة لم تذكر من ضمن الخيارات _____.

5. أي مما يلي يُعد من الإجراءات المتبعة لدى شركتكم في تجميع المعلومات اللازمة حول إعداد كشوفات التدفقات النقدية التقديرية؟ يمكنك إختيار أكثر من إجابة واحدة.

□ تتبع الشركة إجراءات موحدة لتقدير بنود مثل الضرائب والإهلاك وقيم الخردة.
□ لدى الشركة استمارات موحدة لجمع البيانات والمعلومات المتعلقة بالتدفقات النقدية والاستثمارات الأخرى.
□ تتطلب الشركة استخدام نموذج قياسي للتنبؤ بالتدفقات النقدية.
□ لا تتبع الشركة أي إجراء لجمع معلومات عن التدفقات النقدية.
□ برجاء تحديد إن كانت هناك إجراءات أخرى لم يتم ذكرها أعلاه، _____.

6. أي من الطرق أو الأدوات التالية يتم الإستعانة بها عادة من قبلكم للتنبؤ بالتدفق النقدي الناشئة من مشروع إستثماري رأس مالي مقترح لدى شركتكم؟

بمقياس من 1 إلى 5، حيث 1 = أبدًا (0٪)، 2 = عادة أبدًا (25٪)، 3 = أحيانًا (50٪)، 4 = في العادة دائمًا (75٪) و 5 = دائمًا (100٪)

	1	2	3	4	5
تقديرات مستندة على خبرة الدراء.	□	□	□	□	□
تقديرات مستمدة من آراء الخبراء.	□	□	□	□	□
تقديرات مستنتجة عن طريق إستخدام تقنية محاكاة الكمبيوتر(Computer Simulation).	□	□	□	□	□
تقديرات مستنتجة عن طريق إستخدام تحليل السيناريو (Scenario Analysis) .	□	□	□	□	□
تقديرات مستنتجة عن طريق إستخدام تحليل الحساسية (Sensitivity Analysis) .	□	□	□	□	□
تقديرات مستنتجة عن طريق إستخدام تحليل الاحتمالات (Probability Analysis).	□	□	□	□	□
برجاء ذكر أية طرق أو أدوات تستخدم بشركتكم لنفس الغاية ولم يتم ذكرها أعلاه، _____.	□	□	□	□	□

7. هل يتم تضمين عنصر التضخم عند عملية إعداد التدفقات النقدية المتوقعة للمقترحات الإستثمارية الرأسمالية لدى شركتكم؟ □ نعم □ لا

• إذا اخترت (لا)، يرجى الانتقال إلى السؤال رقم 8.

• إذا اخترت (نعم)، أي من الاساليب التالية يتم الإستعانة بها عادة لتعديل او تضمين عنصر التضخم في تقديرات التدفقات النقدية ؟

بمقياس من 1 إلى 5، حيث 1 = أبدًا (0٪)، 2 = عادة أبدًا (25٪)، 3 = أحيانًا (50٪)، 4 = في العادة دائمًا (75٪) و 5 = دائمًا (100٪).

	1	2	3	4	5
منهجية الربح الإجمالي لكل وحدة.	□	□	□	□	□
منهجية التدفقات النقدية الاسمية.	□	□	□	□	□
منهجية التدفقات النقدية الفعلية.	□	□	□	□	□
برجاء ذكر أية طرق أو منهجيات أخرى تستخدم بشركتكم لنفس الغاية ولم يتم ذكرها أعلاه، _____.	□	□	□	□	□

8. بمجرد تنفيذ مقترحات التدفقات الرأسمالية، هل تقوم عادة بمقارنة التدفقات النقدية الفعلية بالتدفقات النقدية المتوقعة؟

□ نعم □ لا

• إذا اخترت (لا)، يرجى الانتقال إلى السؤال رقم 9.

• إذا اخترت (نعم)، أي من عناصر التدفقات النقدية التالية يتم مقارنة الفعلية منها مع المقدرة لدى شركتكم ؟

بمقياس من 1 إلى 5، حيث 1 = ابدا (0٪)، 2 = عادة ابدا (25٪)، 3 = احيانا (50٪)، 4 = في العادة دائما (75٪) و 5 = دائما (100٪)

	1	2	3	4	5
نفقات الاستثمار الأولية.	□	□	□	□	□
التدفقات النقدية التشغيلية.	□	□	□	□	□
قيم الأصول المتهالكة.	□	□	□	□	□
برجاء ذكر أية عناصر لم يتم ذكرها أعلاه، _____.	□	□	□	□	□

• ما هو الفرق في النسبة المئوية الذي عادة ما ينشأ عند مقارنة عناصر التدفقات النقدية التالية في شركتك؟ يرجى إختيار إجابة واحدة لكل تدفق نقدي.

	لا تتعدى 5 %	من 6 % إلى 10%	من 10% إلى 20 %	أكثر من 20 %
نفقات الاستثمار الأولية.	□	□	□	□
التدفقات النقدية التشغيلية.	□	□	□	□
قيم الأصول المتهالكة.	□	□	□	□
برجاء ذكر أية عناصر لم يتم ذكرها أعلاه، _____.	□	□	□	□

9. ما هي الفترة التي تقوم فيها الشركة إجراء رسمي لتقييم الأداء التشغيلي لجميع المشاريع القائمة؟ يمكنك إختيار أكثر من إجابة واحدة.

□ سنويًا.
□ كلما أتاحت الظروف لإجراء إعادة التقييم.
□ نصف سنوي (مرتين في السنة).
□ نادرًا.

10. أي من الطرق أو الأدوات التالية يتم الإستعانة بها عادتة من قبلكم عند البت وأختيار المشاريع الإستثمارية المقترحة لدى شركتكم؟

بمقياس من 1 إلى 5، حيث 1 = أبدًا (0٪)، 2 = عادة أبدًا (25٪)، 3 = أحيانًا (50٪)، 4 = في العادة دائمًا (75٪) و 5 = دائمًا (100٪)

	1	2	3	4	5
صافي القيمة الحالية (NPV)	□	□	□	□	□
معدل العائد الداخلي (IRR)	□	□	□	□	□
معدل العائد الداخلي المعدّل (MIRR)	□	□	□	□	□
معدل العائد المحاسبي (Accounting Rate of Return)	□	□	□	□	□
فترة الاسترداد(Payback Period) .	□	□	□	□	□
فترة الاسترداد المخصومة (Discounted Payback) .	□	□	□	□	□
القيمة الحالية المعدلة (Adjusted Present Value) .	□	□	□	□	□
مؤشر الربحية (Profitability Index)	□	□	□	□	□
الخيارات الفعلية (Real Option) .	□	□	□	□	□
برجاء ذكر أية طرقة أو أداه أخرى تستخدم منقبلكم لنفس الغاية ولم يتم ذكرها أعلاه، _____.	□	□	□	□	□

11. هل تستخدمون أسلوب الخيارات الفعلية (Real Option Analysis) عند البت وأختيار المشاريع الإستثمارية المقترحة لدى شركتكم ؟

□ نعم □ لا

- إذا اخترت (نعم)، يرجى الانتقال إلى السؤال رقم 12.
- إذا اخترت (لا)، يرجى الانتقال إلى السؤال رقم 13.

12. يرجاء اختيار أسباب استخدام الخيارات الفعلية (Real Option Analysis) عند البت وأختيار المشاريع الإستثمارية المقترحة لدى شركتكم ؟ يمكنك اختيار أكثر من إجابة واحدة.

□ لأنها توفر أداه للمساعدة في تشكيل الرؤية الإستراتيجية.
□ لأنها تتيح دمج المرونة الإدارية في التحليل.
□ لأنها توفر وسيلة للتفكير في عدم اليقين وأثره على التقييم بمرور الوقت.
□ لأنها تعتبر كأداه مكملة للأدوات التقليدية التي تستخدم للبت وأختار المشاريع الإستثمارية المقترحة.
□ لأنها توفر أداة تحليلية للتعامل مع حالة عدم اليقين.
□ لأنها توفر ميزة تنافسية على المدى الطويل من خلال اتخاذ القرارات على نحو أفضل.
□ برجاء ذكر أية أسباب أخرى لم تذكر أعلاه وتعتبر سبب في أستخدامكم لهذا الأسلوب أو النوذج _____.

13. يرجاء اختيار أسباب عدم استخدام الخيارات الفعلية (Real Option Analysis) عند البت وأختيار المشاريع الإستثمارية المقترحة لدى شركتكم ؟ يمكنك اختيار أكثر من إجابة واحدة.

□ نقص الخبرة أو المعرفة.
□ معقدة للغاية ليتم تطبيقها في الممارسة العملية.
□ عدم قابلية التطبيق على أعمالنا.
□ صعوبة تقدير المدخلات.
□ تتطلب افتراضات غير واقعية.
□ عدم فعاليتها في مساعدة المدراء على اتخاذ قرارات أفضل.
□ عدم قابلية تطبيقها في العالم الحقيقي.
□ تتطلب العديد من الموارد الداخلية.
□ برجاء ذكر أية أسباب أخرى لم تذكر أعلاه وتعتبر سبب لعدم إستخدامكم لهذا الأسلوب أو النوذج _____.

14. أي من الطرق أو الأدوات التالية يتم الإستعانة بها لتحديد وحساب تكلفة رأس المال لدى شركتكم؟
بمقياس من 1 إلى 5، حيث 1 = أبدًا (0٪)، 2 = عادة أبدًا (25٪)، 3 = أحيانًا (50٪)، 4 = في العادة دائمًا (75٪) و 5 = دائمًا (100٪).

	1	2	3	4	5
أيًا ما يطلبه المستثمرون لدينا.	□	□	□	□	□
حكم يعتمد على الخبرة.	□	□	□	□	□
متوسط تكلفة رأس المال (WACC).	□	□	□	□	□
تكلفة الدين (Cost of Debt).	□	□	□	□	□
عائد من السهم (Earning yield).	□	□	□	□	□
نموذج تسعير الأصول الرأسمالية (CAPM).	□	□	□	□	□
متوسط العائد التاريخي على الأسهم العادية.	□	□	□	□	□
عائد من أرباح الأسهم (Dividend yield)	□	□	□	□	□
برجاء ذكر أية أداة أخرى لم تذكر أعلاه، _____.	□	□	□	□	□

15. هل تستخدمون معادلة متوسط تكلفة رأس المال (WACC) لحساب تكلفة رأس المال لشركتكم؟ □ نعم □ لا

- إذا اخترت (نعم)، يرجى الانتقال إلى السؤال رقم 16 و17
- إذا اخترت (لا)، يرجى الانتقال إلى السؤال رقم 18.

16. أي من المعدلات الضريبية التالية يتم أحتسابها عادة عند حساب تكلفة الدين ما بعد الضريبة لشركتكم؟

بمقياس من 1 إلى 5، حيث 1 = أبدًا (0٪)، 2 = عادة أبدًا (25٪)، 3 = أحيانًا (50٪)، 4 = في العادة دائمًا (75٪) و 5 = دائمًا (100٪).

5	4	3	2	1	
□	□	□	□	□	معدل الضريبة القانوني الحالي.
□	□	□	□	□	الحد الأدنى للضريبة البديلة.
□	□	□	□	□	برجاء ذكر أي معدلات أخرى لم يتم ذكرها أعلاه، _____.

17. أي من الأوزان التالية تستخدم عادةً عند حساب متوسط تكلفة رأس المال WACC لشركتكم؟

بمقياس من 1 إلى 5، حيث 1 = أبدًا (0٪)، 2 = عادة أبدًا (25٪)، 3 = أحيانًا (50٪)، 4 = في العادة دائمًا (75٪) و 5 = دائمًا (100٪).

5	4	3	2	1	
□	□	□	□	□	أوزان القيمة الدفترية.
□	□	□	□	□	أوزان القيمة السوقية.
□	□	□	□	□	أوزان هيكل رأس المال المستهدف.
□	□	□	□	□	برجاء ذكر أي وزن أخر لم يتم ذكره أعلاه، _____.

18. أي من تقنيات تحليل المخاطر التالية تستخدم عادةً من قبلكم عند البت وأختيار المشاريع الإستثمارية المقترحة لدى شركتكم؟

بمقياس من 1 إلى 5، حيث 1 = أبدًا (0٪)، 2 = عادة أبدًا (25٪)، 3 = أحيانًا (50٪)، 4 = في العادة دائمًا (75٪) و 5 = دائمًا (100٪).

5	4	3	2	1	
□	□	□	□	□	تحليل الحساسية.
□	□	□	□	□	بناء على تقديرات الإدارة.
□	□	□	□	□	تحليل السيناريو.
□	□	□	□	□	فترة الاسترداد الأقصر.
□	□	□	□	□	تحليل شجرة القرار.
□	□	□	□	□	محاكاة مونت كارلو.
□	□	□	□	□	سعر الخصم المعدل في ضوء المخاطر.
□	□	□	□	□	برجاء ذكر أية تقنيات أخرى لم يتم ذكرها أعلاه، _____.

19. هل تضع شركتكم حدًا على حجم الموازنة الرأسمالية السنوية؟ □ **نعم** □ **لا**

- **إذا اخترت (نعم)، يرجى الانتقال إلى السؤال رقم 20**
- **إذا اخترت (لا)، يرجى الانتقال إلى السؤال رقم 22.**

20. وفقًا لتجربتكم، هل كانت مصادر التمويل المتاحة لشركتكم كافية لتمويل جميع الإقتراحات الإستثمارية المقبولة أو المربحة المقدمة للدراسة داخل شركتكم؟ يرجى إختيار إجابة واحدة فقط.

□ دائمًا ما تتوفر أموال كافية لتنفيذ المقترحات الإستثمارية.

□ في بعض الأحيان، لا تتوفر أموال كافية لتنفيذ المقترحات الإستثمارية.

□ لا تتوفر الأموال اللازمة لجميع المقترحات المختارة.

21. أي من الظروف التالية تعتبر عادةً سبب لعدم تمويل المشاريع الإستثمارية المقترحة لدى شركتكم ؟

بمقياس من 1 إلى 5، حيث 1 = ابدا (0٪)، 2 = عادة ابدا (25٪)، 3 = احيانا (50٪)، 4 = في العادة دائما (75٪) و 5 = دائما (100٪).

5	4	3	2	1	
□	□	□	□	□	سقف الديون المفروضة نتيجة لاتفاق خارجي.
□	□	□	□	□	سقف الديون المفروض من قبل الإدارة الخارجية للشركة (على سبيل المثال إذا كانت شركتكم عبارة عن شركة تابعة).
□	□	□	□	□	سقف الديون المتاح نتيجة لقرارات الإدارة الداخلية.
□	□	□	□	□	فرض سياسة تقييدية على دفع أرباح نقدية.
□	□	□	□	□	الحاجة للحفاظ على المكاسب المستهدفة للسهم الواحد أو نسبة أرباح السعر.
□	□	□	□	□	برجاء ذكر أية أسباب أخرى لم تذكر أعلاه، _____.

22. أي من الإجراءات التالية عادة ما توجهون صعوبة في إعدادها لدى شركتكم؟

بمقياس من 1 إلى 5، حيث 1 = أبدًا (0٪)، 2 = عادة أبدًا (25٪)، 3 = أحيانًا (50٪)، 4 = في العادة دائمًا (75٪) و 5 = دائمًا (100٪).

5 4 3 2 1

□□ □ □ □ تطوير وتوفير الفحص الأولي لمقترحات المشاريع.

□□ □ □ □ تقدير التدفقات النقدية المتوقعة (حساب التدفقات النقدية التزايدية والتدفقات النقدية بعد خصم الضرائب لمشروع مقترح).

□□ □ □ □ تقييم المشاريع (تحديد الجدوى المالية للمشروع من خلال تقييم التدفقات النقدية الإضافية للمشروع بعد خصم الضرائب).

□□ □ □ □ اختيار المشاريع (اختيار المشاريع التي تلبي أفضل معايير الاختيار للشركة مثل: المشروع ذو أعلى صافي قيمة حالية).

□□ □ □ □ تنفيذ المشاريع (ترتيب وتنفيذ ومتابعة المشاريع التي تم اختيارها).

□□ □ □ □ إجراء التدقيق أو الاستعراض ما بعد التنفيذ.

يرجى تقديم تعليق موجز يوضح السبب وراء الصعوبات التي ذكرتها أعلاه: -

23. يرجى وضع علامة لعنصر واحد من العناصر التالية والذي ينطبق على شركتكم:

إيرادات المبيعات للسنة الماضية (آلاف ريال عماني)	الموازنة الرأس مالية للسنة الماضية (آلاف ريال عماني)	الملكية	المدة عمل المدير التنفيذي بالشركة
☐ أقل من 100	☐ أقل من 100	☐ الحكومة	☐ أقل من 4 سنوات.
☐ 100 - 499	☐ 100 - 499	☐ القطاع الخاص	☐ من 4 إلى 9 سنوات
☐ 500 - 999	☐ 500 - 999	☐ كلاهما، يرجى تحديد النسبة المئوية لكل مالك:	☐ أكثر من 9 سنوات
☐ 1,000 - 9,999	☐ 1,000 - 9,999	☐ الحكومة = ___٪ القطاع الخاص = ___٪	
☐ 10,000 - 49,999	☐ 10,000 - 49,999		
☐ 50,000 - 99,999	☐ 50,000 - 99,999		
☐ 100,000 - 499,999	☐ 100,000 - 499,999		
☐ 500,000 - 1,000,000	☐ 500,000 - 1,000,000		
☐ أكثر من 1,000,000	☐ أكثر من 1,000,000		

عمر المدير التنفيذي	المستوى التعليمي للمدير التنفيذي
☐ أقل من 40 سنة	☐ أقل من الدرجة الجامعية.
☐ من 40 إلى 49 سنة	☐ حاصل على درجة جامعية.
☐ من 50 إلى 59 سنة	☐ حاصل على الدراسات العليا.
☐ 60 سنة أو أكثر	☐ يرجاء ذكر أي مؤهلات أخرى لم تذكر أعلاه_____:

إجمالي الأصول في السنة الماضية (آلاف ريال عماني)	عمر الشركة	العائد على حقوق الملكية للسنة الماضية (ROE)
☐ أقل من 100	☐ أقل من 5 سنوات.	☐ 0- 9 %
☐ 100 – 499	☐ من 5 إلى 9 سنة	☐ 10 -14 %
☐ 500 – 999	☐ من 10 إلى 15 سنة	☐ 15 – 19 %
☐ 1,000 – 9,999	☐ من 16 إلى 19 سنة	☐ 20 – 24 %
☐ 10,000 – 49,999	☐ من 20 إلى 25 سنة	☐ أكثر من 25%
☐ 50,000 – 99,999	☐ أكثر من 25 سنة	
☐ 100,000 – 499,999		
☐ 500,000 – 1,000,000		
☐ أكثر من 1,000,000		

المسمى الوظيفي للقلم بتعبئة الإستبيان

- ☐ المدير التنفيذي
- ☐ المدير المالي
- ☐ مسمى آخر، يرجى التحديد: _____.

القطاع الذي تنتمي إليه الشركة

- ☐ المالي
- ☐ الخدمات
- ☐ الصناعية

يرجى تحديد الفرع الذي تعمل فيه الشركة من القطاع المختار (بمعنى: إذا تم اختيار القطاع المالي، فقلي أي مجال تعمل مؤسستكم، البنوك أو التمويل أو التأمين؟_____.

شكرًا لك لإكمال هذا الإستبيان!

يرجى إرسال الردود بحلول يوم ../../2014 عبر أي من الطرق التالية:

- **البريد:** .....
- **البريد الإلكتروني:** .....
- **الفاكس:** .....

Embassy of the Sultanate of Oman

The Office of Cultural Attaché

سفارة سلطنة عمان

الملحقية الثقافية-لندن

To Whom It May Concern

I would like to confirm that **Mr. Mahmood Ali Khalfan Al Wahaibi** is a PhD researcher at Brunel University and currently embarking on his dissertation titled: An Investigation of Capital Budgeting Practices: Evidence from the Sultanate of Oman

The above mentioned study as I understand it is an exploratory research that requires distributing a questionnaire to collect the required data. Therefore, we do encourage participants to cooperate with the researcher.

The data will be will be treated and used only for research purposes

Any assisted given to him will be highly appreciated

You're sincerely,

Dr. Mohamed Al Bandari

The cultural attaché

64 Ennismore Gardens, London SW7 1NH
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www.omancao.com

Sultanate of Oman
Capital Market Authority

سلطنة عمان
الهيئة العامة لسوق المال

CMA/2929/2014
2ND January 2014

To/ Whom It May Concern,

Subject: Providing a Support for Mr. Mahmood Ali Khalfan Al Wahaibi.

With reference to the above subject, We have been approached by Mr. Mahmood Ali Al-Wahaibi (PHD researcher at Brunel University) requesting to facilitate disturbing a questionnaire to the public listed companies in the Muscat Securities Market.

Stemming from the Capital Market Authority's objective to support Omani students and researchers, we would like to inform you that the Capital Market Authority stands ready to provide assistance to the researcher mentioned above for the distribution of his questionnaire.

Your sincerely,

Talal Said Abdullah Al-Kiyumi
Vice President Of Administration and Financee Affairs

الهيئة العامة لسوق المال
Capital Market Authority

Appendix IV: The Evaluation Sheet Used for the Questionnaire Pilot Test:

Participant Information

Please tick on of the following categories that best describe your status:

□ Postgraduates Student □ Member of Staff (e.g. Professors or Lecturers) □ Employee

Kindly answer the following questions (where 1 means "strongly disagree", 2 means "disagree", 3 means "undecided", 4 means "agree" and 5 means "strongly agree").

Questionnaire Objective

The objective of the questionnaire are stated clearly:

	1	2	3	4	5	
Strongly Disagree	□	□	□	□	□	Strongly Agree

The objective of the questionnaire is relevant to capital budgeting practices:

	1	2	3	4	5	
Strongly Disagree	□	□	□	□	□	Strongly Agree

The questionnaire is sufficient to measure the capital budgeting practices.

	1	2	3	4	5	
Strongly Disagree	□	□	□	□	□	Strongly Agree

Questionnaire Content

The questionnaire content is clear:

	1	2	3	4	5	
Strongly Disagree	□	□	□	□	□	Strongly Agree

The content of the questionnaire is easy and understandable:

	1	2	3	4	5	
Strongly Disagree	□	□	□	□	□	Strongly Agree

The questionnaire content covers important areas of capital budgeting practices:

	1	2	3	4	5	
Strongly Disagree	□	□	□	□	□	Strongly Agree

Questionnaire Design

The questionnaire's design is flexible enough for you to go back to where you left:

	1	2	3	4	5	
Strongly Disagree	□	□	□	□	□	Strongly Agree

The sequence of questionnaire is well-structured:

	1	2	3	4	5	
Strongly Disagree	□	□	□	□	□	Strongly Agree

The instructions in the questionnaire are easy to follow:

	1	2	3	4	5	
Strongly Disagree	□	□	□	□	□	Strongly Agree

The questionnaire is visually appealing :

	1	2	3	4	5	
Strongly Disagree	□	□	□	□	□	Strongly Agree

The questionnaire is too lengthy:

	1	2	3	4	5	
Strongly Disagree	□	□	□	□	□	Strongly Agree

Overall

What additional content would you like to see developed in this questionnaire?

---.

Do you have any comments or suggestions you would like to raise regarding this questionnaire?

---.

Appendix V: The Analysis of the Pilot Test.

Table 5.3: The Analysis of the Pilot Test Evaluation Sheet.

The Evaluation Statement	Number of Participants	Frequency of Agree and Strongly Agree	Percentage (%)
The objective of the questionnaire is stated clearly.	26	21	81
The objective of the questionnaire is relevant to capital budgeting practices.	26	24	92
The questionnaire is sufficient to measure the capital budgeting practices.	26	17	65
The questionnaire content is clear.	26	21	81
The content of the questionnaire is easy and understandable.	26	21	81
The questionnaire content covers important areas of capital budgeting practices.	26	22	84
The questionnaire's design is flexible enough for you to go back to where you left.	26	19	73
The sequence of questionnaire is well-structured.	26	24	92
The instructions in the questionnaire are easy to follow.	26	19	73
The questionnaire is visually appealing.	26	19	73
The questionnaire is too lengthy.	26	8	31

Appendix VI: A Presentation of the Correlation Analysis of the Demographic Variables.

Table 5.4: The Correlations of Demographic Variables.

	Firms Size According to Sales Revenue	Firms Size According to Capital Budget	Firms Size According to Total Assets	% of ROE	Ownership Type	Firm Age	Sectors	Age of CEO	CEO Education	CEO Tenure
	Small to Large	Small to Large	Small to Large	Low to High	Government, Private or Both	Young to Mature	Financial, Services and Industrial	Young to Mature	University Level to PhD	Short to Long
Sales Revenue	1									
Capital Budget	0.283**	1								
Total Assets	0.378***	0.355**	1							
% of ROE	-0.054	-0.076	0.024	1						
Ownership	0.219*	0.133	0.054	0.289**	1					
Firm Age	0.258**	0.046	0.214*	0.161	-0.046	1				
Sectors	0.221	0.465**	0.356**	0.147	0.140	0.251	1			
Age of CEO	-0.121	-0.093	-0.062	0.055	-0.223*	-0.076	0.136	1		
CEO Education	0.187	-0.083	-0.008	0.156	0.034	0.261**	0.206	-0.274**	1	
CEO Tenure	0.087	0.288*	0.191	0.166	0.250	0.165	0.105	0.222	0.120	1

This table reports a statistical test namely the index of mean square contingency or ø. This test measures the correlation of ordered groups of attributes. Cross tabulations were performed by firms size according to sales revenue (small to large), firms size according to capital budget (small to large), firms size according to total assets (small to large), the firms ROE (low to high), the type of shareholders or ownership (government, private or both), the firms age (young to mature), the sectors firms operate within (financial, services and industrial), the age of CEOs (young to mature), the education level of CEOs (university level, postgraduate level and other), and finally the CEOs tenure (short to long). ***,**,* denotes a significantly different from zero at 1%, 5% and 10% Level respectively.

Appendix VII: A Presentation of the Analysis Made to Examine the Responses Conditional on the Firms and its CEOs Characteristics:

Table 5.5: Survey responses for the question, ''How frequently does your firm use the following forecasting methods to generate cash flow estimates?''

Particulars	% of Almost Always or Always	Full Sample mean	Firms Size According to Sales Revenue		Firms Size According to Capital Budget		Firms Size According to Total Assets		% of ROE		Firms Age	
			Small	Large	Small	Large	Small	Large	Low	High	Young	Mature
Scenario analysis.	96.6%	4.15	4.15	4.16	4.13	4.27	4.17	4.15	4.29	3.96	4.25	4.13
Management's subjective estimates.	91.5%	4.29	4.45	3.95	4.34	4.00	**4.61**	**4.15***	4.46	4.04	4.50	4.22
Sensitivity analysis.	83.1%	3.85	3.93	3.68	3.91	3.55	4.06	3.76	3.77	3.96	3.92	3.80
Consensus of expert's opinion.	47.5%	3.59	3.70	3.37	3.62	3.36	3.83	3.49	3.63	3.54	3.83	3.54
Probability analysis.	25.4%	2.76	2.83	2.63	2.72	2.91	2.89	2.71	2.80	2.71	3.25	2.67
Computer simulation.	8.5%	1.75	1.78	1.68	1.77	1.64	1.89	1.68	1.69	1.83	1.92	1.70

Particulars	% of Almost Always or Always	Full Sample mean	Ownership Type		Sector			Age of CEO	
			Government	Private	Both	Financial	Services	Industrial	Younger	Mature
Scenario analysis.	96.6%	4.15	5.00	4.14	4.15	4.30	4.20	4.07	4.11	4.17
Management's subjective estimates.	91.5%	4.29	5.00	4.38	4.05	4.10	4.20	4.41	4.11	4.41
Sensitivity analysis.	83.1%	3.85	5.00	4.00	3.50	4.00	3.80	3.83	3.75	3.90
Consensus of expert's opinion.	47.5%	3.59	5.00	3.65	3.35	3.10	3.50	3.83	3.61	3.55
Probability analysis.	25.4%	2.76	4.00	2.86	2.50	2.80	2.70	2.79	2.86	2.72
Computer simulation.	8.5%	1.75	1.00	1.86	1.55	1.60	1.80	1.76	1.93	1.59

Particulars	% of Almost Always or Always	Full Sample mean	CEO Education			CEO tenure		
			University Level	Poster Level.	Other	Short	Medium	Long
Scenario analysis.	96.6%	4.15	4.20	4.13	4.00	4.25	4.11	4.16
Management's subjective estimates.	91.5%	4.29	4.40	4.24	4.00	4.50	4.11	4.42
Sensitivity analysis.	83.1%	3.85	3.95	3.79	4.00	3.75	3.71	4.11
Consensus of expert's opinion.	47.5%	3.59	3.50	3.63	4.00	3.75	3.32	3.89
Probability analysis.	25.4%	2.76	2.75	2.74	4.00	3.08	**2.39**	**3.11****
Computer simulation.	8.5%	1.75	1.70	1.71	4.00	1.58	1.61	2.05

Note: This table presents the responses by managers of Omani firms on which method they use for forecasting cash flow estimates. Respondents are asked to rate on a scale of 1 (never) to 5 (always). The overall mean is reported as well as the percentage of respondents that answered 4 (almost always) or 5 (always). ***, **, * denotes a significant difference at the 1%, 5%, and 10% level respectively.

Table 5.6: Survey responses for the question, "How frequently are the following methods used by your firm in adjusting cash flow estimates for inflation?"

Particulars	% of Almost Always or Always	Full Sample mean	Firms Size According to Sales Revenue		Firms Size According to Capital Budget		Firms Size According to Total Assets		% of ROE		Firms Age	
			Small	Large	Small	Large	Small	Large	Low	High	Young	Mature
Gross Profit per Unit Approach.	81.40%	3.88	3.78	4.11	3.87	3.91	4.06	3.80	3.80	4.00	4.08	3.83
Real Cash Flow Approach.	74.60%	3.61	3.50	3.84	3.62	3.45	3.56	3.63	3.60	3.63	3.67	3.57
Nominal Cash Flow Approach.	15.30%	1.97	2.10	1.68	2.09	1.55	2.17	1.88	1.91	2.04	2.00	1.89

Particulars	% of Almost Always or Always	Full Sample mean	Ownership Type		Sector			Age of CEO	
			Government	Private	Both	Financial	Services	Industrial	Younger	Mature
Gross Profit per Unit Approach.	81.40%	3.88	5.00	3.68	4.20	4.10	3.80	3.86	4.04	3.69
Real Cash Flow Approach.	74.60%	3.61	5.00	3.65	3.40	3.60	3.55	3.66	3.79	3.45
Nominal Cash Flow Approach.	15.30%	1.97	2.00	2.16	1.65	1.60	2.10	2.00	1.75	2.10

Particulars	% of Almost Always or Always	Full Sample mean	CEO Education			CEO tenure		
			University Level	Postgr Level.	Other	Short	Medium	Long
Gross Profit per Unit Approach.	81.40%	3.88	3.65	3.97	5.00	3.42	4.04	3.95
Real Cash Flow Approach.	74.60%	3.61	3.15	3.84	4.00	2.83	3.75	3.89
Nominal Cash Flow Approach.	15.30%	1.97	2.05	1.95	1.00	1.83	2.00	2.00

Note: This table presents the responses by managers of Omani firms on which method they use for adjusting cash flow estimates. Respondents are asked to rate on a scale of 1 (never) to 5 (always). The overall mean is reported as well as the percentage of respondents that answered 4 (almost always) or 5 (always). ***, **, * denotes a significant difference at the 1%, 5%, and 10% level respectively.

Table 5.7: Survey responses for the question, ''How frequently are the following methods used when deciding which projects or acquisitions to pursue by your firm? ''

Particulars	% of Almost Always or Always	Full Sample mean	Firms Size According to Sales Revenue		Firms Size According to Capital Budget		Firms Size According to Total Assets		% of ROE		Firms Age	
			Small	Large	Small	Large	Small	Large	Low	High	Young	Mature
Net Present Value (NPV)	89.9%	4.36	4.23	4.63*	4.36	4.27	4.33	4.37	4.26	4.50	4.33	4.37
Payback Period.	78.0%	4.07	3.95	4.32	4.06	4.00	4.06	4.07	3.94	4.25	4.25	4.04
Internal Rate of Return (IRR)	76.3%	3.66	3.62	3.74	3.74	3.18	3.78	3.61	3.46	3.96**	3.42	3.72
Accounting Rate of Return.	42.4%	3.00	2.85	3.32	3.06	2.91	2.11	2.98	2.91	2.42	2.92	3.02
Adjusted present Value.	39.0%	2.71	2.70	2.74	2.77	2.55	2.56	2.78	2.51	3.00	3.00	2.67
Profitability Index.	28.8%	2.71	2.68	2.79	2.83	2.27	2.44	2.39	2.37	2.46	2.83	2.72
Discounted Payback Period.	16.8%	2.41	2.38	2.47	2.45	2.27	1.78	1.80	1.77	1.83	2.67	2.37
Modified Internal Rate of Return (MIRR)	1.7%	1.80	1.67	2.05	1.83	1.64	2.89	3.05	3.06	2.92	1.50	1.87
Real Options.	0.0%	-	-	-	-	-	-	-	-	-	-	-

Particulars	% of Almost Always or Always	Full Sample mean	Ownership Type		Sector			Age of CEO	
			Government	Private	Both	Financial	Services	Industrial	Younger	Mature
Net Present Value (NPV)	89.9%	4.36	5.00	4.30	4.40	4.20	4.30	4.45	4.46	4.24
Payback Period.	78.0%	4.07	5.00	3.84	4.40	4.50	3.65	4.21	4.18	3.97
Internal Rate of Return (IRR)	76.3%	3.66	4.00	3.62	3.65	3.70	3.65	3.66	3.75	3.55
Accounting Rate of Return.	42.4%	3.00	1.00*	1.70	2.00	3.50	2.85	2.93	3.11	2.83
Adjusted present Value.	39.0%	2.71	1.00	2.95	3.30	2.40	3.10	2.55	2.93	2.62
Profitability Index.	28.8%	2.71	2.00	3.05	2.15	3.10	2.55	2.69	2.71	2.72
Discounted Payback Period.	16.8%	2.41	1.00	2.54	3.15	2.70	2.20	2.45	2.46	2.34
Modified Internal Rate of Return (MIRR)	1.7%	1.80	1.00	2.30	2.70	2.10	1.60	1.83	1.86	1.72
Real Options.	0.0%	-	-	-	-	-	-	-	-	-

Particulars	% of Almost Always or Always	Full Sample mean	CEO Education			CEO tenure		
			University Level	Postgr Level.	Other	Short	Medium	Long
Net Present Value (NPV)	89.9%	4.36	4.30	4.37	5.00	4.33	4.14	4.68
Payback Period.	78.0%	2.71	3.85	4.16	5.00	4.00	3.86	4.42
Internal Rate of Return (IRR)	76.3%	4.07	3.40	3.79	4.00	3.58	3.50	3.95
Accounting Rate of Return.	42.4%	3.00	2.95	3.05	2.00	3.33	3.14	2.58
Adjusted present Value.	39.0%	2.41	2.90	2.55	5.00	3.33	2.32	2.89
Profitability Index.	28.8%	1.80	2.65	2.76	2.00	3.17	2.68	2.47
Discounted Payback Period.	16.8%	2.71	2.25	2.50	2.00	2.67	2.36	2.32
Modified Internal Rate of Return (MIRR)	1.7%	3.66	1.60	1.92	1.00	1.92	1.93	1.53
Real Options.	0.0%	-	-	-	-	-	-	-

Note: This table presents the responses by managers of Omani firms on which method they use for selecting capital investment projects. Respondents are asked to rate on a scale of 1 (never) to 5 (always). The overall mean is reported as well as the percentage of respondents that answered 4 (almost always) or 5 (always). ***, **, * denotes a significant difference at the 1%, 5%, and 10% level respectively.

Table 5.8: Survey responses for the question, ''How frequently are the following methods used by your firm when determining its cost of capital? ''

Particulars	% of Almost Always or Always	Full Sample mean	Firms Size According to Sales Revenue		Firms Size According to Capital Budget		Firms Size According to Total Assets		% of ROE		Firms Age	
			Small	Large	Small	Large	Small	Large	Low	High	Young	Mature
WACC	79.7%	3.93	3.88	4.05	3.85	4.27	3.44	4.15**	3.94	3.92	3.75	3.96
Dividend yield	55.9%	3.10	3.13	3.05	3.04	3.27	3.17	3.07	3.14	3.04	3.17	3.04
CAPM	54.2%	3.15	2.85	3.79	3.11	3.18	2.67	3.37	2.94	3.46	2.92	3.24
Earnings yield	52.5%	3.31	3.13	3.68	3.19	3.64	2.56	3.63	3.11	3.58	3.08	3.37
Average Historical return on common stock	20.3%	2.22	2.13	2.42	2.13	2.55	2.00	2.32	2.06	2.46	1.75	2.33
Whatever our investors require.	8.5%	1.76	1.68	1.95	1.74	1.82	1.39	1.93	1.77	1.75	1.50	1.83
Cost of Debt.	3.4%	1.64	1.58	1.79	1.62	1.73	1.33	1.78	1.63	1.67	1.50	1.67
Role of thumb.	1.8%	1.56	1.55	1.58	1.53	1.73	1.61	1.54	1.54	1.58	1.50	1.57

Particulars	% of Almost Always or Always	Full Sample mean	Ownership Type		Sector			Age of CEO	
			Government	Private	Both	Financial	Services	Industrial	Younger	Mature
WACC	79.7%	3.93	5.00	4.11	3.55	4.00	4.45	3.55*	3.68	4.24
Dividend yield	55.9%	3.10	4.00	3.14	2.95	3.20	3.50	2.79	2.89	3.31
CAPM	54.2%	3.15	2.00	3.24	2.95	3.40	3.55	2.79	2.96	3.45
Earnings yield	52.5%	3.31	2.00	3.35	3.20	3.60	3.70	2.93	3.11	3.59
Average Historical return on common stock	20.3%	2.22	2.00	2.32	2.00	2.60	2.35	2.00	1.93	2.52
Whatever our investors require.	8.5%	1.76	1.00	1.70	1.90	2.10	1.75	1.66	1.79	1.76
Cost of Debt.	3.4%	1.64	2.00	1.68	1.55	1.70	2.05	1.34	1.39	1.90
Role of thumb.	1.8%	1.56	2.00	1.65	1.40	1.60	1.60	1.52	1.50	1.62

Particulars	% of Almost Always or Always	Full Sample mean	CEO Education			CEO tenure		
			University Level	Poster Level.	Other	Short	Medium	Long
WACC	79.7%	3.93	3.90	3.95	4.00	3.33	3.75	4.58**
Dividend yield	55.9%	3.10	3.30	2.95	5.00	2.50	3.04	3.58
CAPM	54.2%	3.15	2.85	3.29	4.00	2.83	2.96	3.63
Earnings yield	52.5%	3.31	3.30	3.34	2.00	2.58	3.36	3.68
Average Historical return on common stock	20.3%	2.22	2.00	2.34	2.00	2.08	2.36	2.11
Whatever our investors require.	8.5%	1.76	1.75	1.79	1.00	1.58	1.93	1.63
Cost of Debt.	3.4%	1.64	1.80	1.58	1.00	1.50	1.57	1.84
Role of thumb.	1.8%	1.56	1.50	1.61	1.00	1.58	1.54	1.58

Note: This table presents the responses by managers of Omani firms on which method they use for calculating their cost of capital. Respondents are asked to rate on a scale of 1 (never) to 5 (always). The overall mean is reported as well as the percentage of respondents that answered 4 (almost always) or 5 (always). ***, **, * denotes a significant difference at the 1%, 5%, and 10% level respectively.

Table 5.9: Survey responses for the question, ''How frequently are the following weights used when calculating your firms WACC?''

Particulars	% of Almost Always or Always	Full Sample mean	Firms Size According to Sales Revenue		Firms Size According to Capital Budget		Firms Size According to Total Assets		% of ROE		Firms Age	
			Small	Large	Small	Large	Small	Large	Low	High	Young	Mature
Market value weights.	81.4%	4.03	3.93	4.26	3.91	4.55	3.50	4.27	4.09	3.96	4.25	3.96
Book value weights.	67.8%	2.03	2.10	1.89	1.98	2.27	1.83	2.12	2.14	1.88	2.55	2.47
Target capital structure weights.	19.3%	2.49	2.39	2.68	2.49	2.55	2.56	2.46	2.58	2.38	2.25	1.96

Particulars	% of Almost Always or Always	Full Sample mean	Ownership Type		Sector			Age of CEO	
			Government	Private	Both	Financial	Services	Industrial	Younger	Mature
Market value weights.	81.4%	4.03	5.00	4.24	3.60	4.30	4.65	3.52**	3.64	4.48
Book value weights.	67.8%	2.49	2.00	2.60	2.35	2.78	2.60	2.32	2.23	2.76
Target capital structure weights.	19.3%	2.03	2.00	2.14	1.85	2.20	2.15	1.90	1.93	2.14

Particulars	% of Almost Always or Always	Full Sample mean	CEO Education			CEO tenure		
			University Level	Postgr Level.	Other	Short	Medium	Long
Market value weights.	81.4%	4.03	4.25	3.89	5.00	3.33	3.86	4.74
Book value weights.	67.8%	2.49	2.50	2.47	3.00	2.09	2.30	3.00
Target capital structure weights.	19.3%	2.03	2.25	1.92	2.00	2.00	2.07	2.00

Note: This table presents the responses by managers of Omani firms on which weights they used when calculating their firms cost of capital. Respondents are asked to rate on a scale of 1 (never) to 5 (always). The overall mean is reported as well as the percentage of respondents that answered 4 (almost always) or 5 (always). ***, **, * denotes a significant difference at the 1%, 5%, and 10% level respectively.

Table 5.10: Survey responses for the question, "How frequently are the following risk analysis methods used by your firm when deciding which projects or acquisitions to pursue?"

Particulars	% of Almost Always or Always	Full Sample mean	Firms Size According to Sales Revenue		Firms Size According to Capital Budget		Firms Size According to Total Assets		% of ROE		Firms Age	
			Small	Large	Small	Large	Small	Large	Low	High	Young	Mature
Scenario Analysis.	81.4%	4.24	4.10	4.53	4.30	3.91	4.56	4.10	3.86	4.79**	4.67	4.11
Based on management judgements.	74.6%	4.05	4.05	4.05	4.15	3.64	4.00	4.07	3.97	4.17	4.33	3.96
Sensitivity Analysis.	71.2%	3.95	3.90	4.05	4.02	3.64	3.83	4.00	3.80	4.17	4.17	3.87
Shorter Payback period.	55.9%	2.98	2.88	3.21	2.96	3.00	2.89	3.02	2.57	3.58	3.08	3.00
Risk Adjusted Discount Rate.	33.9%	2.59	2.43	2.95	2.68	2.36	2.50	2.63	2.60	2.58	2.00	2.76
Decision Tree Analysis.	3.4%	1.54	1.53	1.58	1.55	1.45	1.17	1.71***	1.31	1.88	1.50	1.57
Monte Carlo Simulation.	3.4%	1.31	1.20	1.53	1.36	1.09	1.11	1.39	1.23	1.42	1.25	1.33

Particulars	% of Almost Always or Always	Full Sample mean	Ownership Type			Sector			Age of CEO	
			Government	Private	Both	Financial	Services	Industrial	Younger	Mature
Scenario Analysis.	81.4%	4.24	5.00	4.03	4.55	3.40	4.55	4.31	4.25	4.17
Based on management judgements.	74.6%	4.05	5.00	4.03	4.05	3.50	4.50	3.93	4.07	3.97
Sensitivity Analysis.	71.2%	3.95	2.00	3.95	4.05	4.10	4.30	3.66	3.86	3.97
Shorter Payback period.	55.9%	2.98	3.00	2.70	3.45	2.80	3.20	2.90	3.39	2.72
Risk Adjusted Discount Rate.	33.9%	2.59	1.00	2.68	2.60	3.30	2.40	2.48	2.68	2.59
Decision Tree Analysis.	3.4%	1.54	1.00	1.51	1.60	1.40	1.75	1.45	1.71	1.41
Monte Carlo Simulation.	3.4%	1.31	1.00	1.27	1.40	1.00	1.30	1.41	1.32	1.31

Particulars	% of Almost Always or Always	Full Sample mean	CEO Education			CEO tenure		
			University Level	Poster Level.	Other	Short	Medium	Long
Scenario Analysis.	81.4%	4.24	4.00	4.54	5.00	3.33	4.54	4.37
Based on management judgements.	74.6%	4.05	3.85	4.13	5.00	3.75	4.04	4.26
Sensitivity Analysis.	71.2%	3.95	4.05	3.87	5.00	4.08	3.75	4.16
Shorter Payback period.	55.9%	2.98	2.90	2.97	5.00	2.50	3.07	3.16
Risk Adjusted Discount Rate.	33.9%	2.59	2.40	2.63	5.00	2.58	2.21	3.16*
Decision Tree Analysis.	3.4%	1.54	1.70	1.45	2.00	1.25	1.64	1.58
Monte Carlo Simulation.	3.4%	1.31	1.20	1.34	2.00	1.08	1.29	1.47

Note: This table presents the responses by managers of Omani firms on which method they use for assessing the risk of their proposed projects. Respondents are asked to rate on a scale of 1 (never) to 5 (always). The overall mean is reported as well as the percentage of respondents that answered 4 (almost always) or 5 (always). ***, **, * denotes a significant difference at the 1%, 5%, and 10% level respectively.

Table 5.11: Survey responses for the question, ''How frequently the following reasons apply for not financing an acceptable (profitable) proposal submitted for consideration?''

Particulars	% of Almost Always or Always	Full Sample mean	Firms Size According to Sales Revenue		Firms Size According to Capital Budget		Firms Size According to Total Assets		% of ROE		Firms Age	
			Small	Large	Small	Large	Small	Large	Low	High	Young	Mature
Debt limit imposed by internal management.	25.4%	2.54	2.43	2.79	2.43	3.09	2.22	2.68	2.51	2.58	2.50	2.59
Debt limit imposed by outside agreement.	17.0%	2.22	2.28	2.11	2.23	2.27	2.06	2.29	2.14	2.33	1.83	2.35
Debt limit imposed by external management to the organisation (e.g. if the respondent is a subsidiary company).	15.3%	2.15	2.23	2.00	2.21	2.00	2.11	2.17	2.00	2.38	2.00	2.22
Need to maintain a target earning per share or price earnings ratio.	13.6%	2.15	2.08	2.32	2.11	2.36	2.06	2.20	2.09	2.25	2.08	2.20
Restrictive policy imposed on the payment of cash dividend.	10.2%	2.14	1.93	2.58**	2.06	2.27	2.00	2.20	2.11	2.17	2.08	2.17

Particulars	% of Almost Always or Always	Full Sample mean	Ownership Type			Sector			Age of CEO	
			Government	Private	Both	Financial	Services	Industrial	Younger	Mature
Debt limit imposed by internal management.	25.4%	2.54	3.00	2.54	2.55	3.40	2.50	2.28	2.39	2.72
Debt limit imposed by outside agreement.	17.0%	2.22	2.00	2.24	2.25	2.80	2.15	2.07	2.25	2.24
Debt limit imposed by external management to the organisation (e.g. if the respondent is a subsidiary company).	15.3%	2.15	2.00	2.00	2.50	2.40	2.45	1.86	2.43	1.93
Need to maintain a target earning per share or price earnings ratio.	13.6%	2.15	2.00	2.19	2.10	2.80	2.00	2.03	2.18	2.17
Restrictive policy imposed on the payment of cash dividend.	10.2%	2.14	2.00	1.95	2.40	2.60	1.90	2.14	2.36	1.97

Particulars	% of Almost Always or Always	Full Sample mean	CEO Education			CEO tenure		
			University Level	Postgr Level.	Other	Short	Medium	Long
Debt limit imposed by internal management.	25.4%	2.54	2.75	2.45	2.00	2.33	2.25	3.11**
Debt limit imposed by outside agreement.	17.0%	2.22	2.05	2.32	2.00	2.33	2.07	2.37
Debt limit imposed by external management to the organisation (e.g. if the respondent is a subsidiary company).	15.3%	2.15	1.85	2.26	4.00	1.83	2.07	2.47
Need to maintain a target earning per share or price earnings ratio.	13.6%	2.15	1.95	2.26	2.00	1.92	2.00	2.53
Restrictive policy imposed on the payment of cash dividend.	10.2%	2.14	1.95	2.24	2.00	1.92	2.18	2.21

Note: This table presents the responses by managers of Omani firms on the reasons for not financing an acceptable (profitable) proposed project. Respondents are asked to rate on a scale of 1 (never) to 5 (always). The overall mean is reported as well as the percentage of respondents that answered 4 (almost always) or 5 (always). ***, **, * denotes a significant difference at the 1%, 5%, and 10% level respectively.

Table 5.12: Survey responses for the question, ''How frequently are the following actual and estimated cash flows are compared?''

Particulars	% of Almost Always or Always	Full Sample mean	Firms Size According to Sales Revenue		Firms Size According to Capital Budget		Firms Size According to Total Assets		% of ROE		Firms Age	
			Small	Large	Small	Large	Small	Large	Low	High	Young	Mature
Operating cash flow.	79.7%	4.16	4.00	4.47	4.07	4.55	3.71	4.35**	3.94	4.46*	3.64	4.29
Initial investment outlay.	71.2%	4.07	3.82	4.58	4.02	4.20	3.65	4.25	3.79	4.46**	3.64	4.20
Projects salvage values.	64.4%	3.77	3.66	4.00	3.80	3.50	3.76	3.78	3.45	4.21***	3.64	3.82

Particulars	% of Almost Always or Always	Full Sample mean	Ownership Type		Sector			Age of CEO	
			Government	Private	Both	Financial	Services	Industrial	Younger	Mature
Operating cash flow.	79.7%	4.16	3.00	4.23	4.05	4.44	4.05	4.14	3.82	4.48
Initial investment outlay.	71.2%	4.07	3.00	3.97	4.25	4.78	3.90	3.96	3.82	4.30
Projects salvage values.	64.4%	3.77	3.00	3.63	4.00	3.44	3.80	3.86	3.71	3.81

Particulars	% of Almost Always or Always	Full Sample mean	CEO Education			CEO tenure		
			University Level	Postgr Level.	Other	Short	Medium	Long
Operating cash flow.	79.7%	4.16	3.83	4.39	1.00	3.92	4.15	4.33
Initial investment outlay.	71.2%	4.07	3.67	4.34	1.00	3.92	4.07	4.17
Projects salvage values.	64.4%	3.77	3.22	4.11	1.00	3.75	3.74	3.83

Note: This table presents the responses by managers of Omani firms on which type of cash flow the usually compared. Respondents are asked to rate on a scale of 1 (never) to 5 (always). The overall mean is reported as well as the percentage of respondents that answered 4 (almost always) or 5 (always). ***, **, * denotes a significant difference at the 1%, 5%, and 10% level respectively.

Table 5.13: Survey responses for the question, "How frequently are the following capital budgeting procedures considered difficult to conduct at your firm?"

Particulars	% of Almost Always or Always	Full Sample mean	Firms Size According to Sales Revenue		Firms Size According to Capital Budget		Firms Size According to Total Assets		% of ROE		Firm Age	
			Small	Large	Small	Large	Small	Large	Low	High	Young	Old
Evaluating projects (Determining the financial viability of a project by evaluating the project's incremental after-tax cash flows).	45.8%	3.22	3.20	3.26	3.23	3.27	3.22	3.22	3.54	2.75	3.75	3.11
Estimating projected cash flows (Calculating Incremental, after-tax cash flows for a proposed project).	44.1%	3.14	3.10	3.21	3.13	3.27	3.22	3.10	3.51	2.58	3.42	3.09
Selecting projects (Choosing the projects that best meet the selection criteria of the company such as: the project with the highest net present value).	39.0%	3.02	2.95	3.16	3.00	3.09	2.94	3.05	3.14	2.83	3.17	2.93
Implementing a project (Determining the order of implementation and track the selected projects).	39.0%	3.03	2.85	3.42	3.02	3.09	2.67	3.20	3.20	2.79	3.08	3.00
Developing and providing preliminary screening of project proposals.	27.1%	2.61	2.55	2.74	2.45	3.18	2.39	2.71	2.71	2.46	3.08	2.52
Performing a postcompletion audit or review.	25.4%	2.64	2.63	2.68	2.68	2.55	2.94	2.51	2.91	2.25	3.00	2.54

Particulars	% of Almost Always or Always	Full Sample mean	Ownership Type			Sectors			Age of CEO	
			Government	Private	Both	Financial.	Services.	Industrial.	Young	Mature
Evaluating projects (Determining the financial viability of a project by evaluating the project's incremental after-tax cash flows).	45.8%	3.22	4.00	3.35	3.00	3.20	3.30	3.17	3.14	3.31
Estimating projected cash flows (Calculating Incremental, after-tax cash flows for a proposed project).	44.1%	3.14	4.00	3.27	2.90	2.90	3.10	3.24	2.96	3.31
Selecting projects (Choosing the projects that best meet the selection criteria of the company such as: the project with the highest net present value).	39.0%	3.02	4.00	3.14	2.75	2.80	2.90	3.17	3.00	2.93
Implementing a project (Determining the order of implementation and track the selected projects).	39.0%	3.03	4.00	3.03	3.00	3.10	2.70	3.24	3.21	2.79
Developing and providing preliminary screening of project proposals.	27.1%	2.61	4.00	2.65	2.40	2.60	2.60	2.62	2.54	2.69
Performing a postcompletion audit or review.	25.4%	2.64	4.00	2.65	2.60	2.20	2.40	2.97	2.43	2.79

Particulars	% of Almost Always or Always	Full Sample mean	CEO Education			CEO Tenure		
			University Level	Postgraduate Level	Other	Short	Medium	Long
Evaluating projects (Determining the financial viability of a project by evaluating the project's incremental after-tax cash flows).	45.8%	3.22	3.25	3.21	3.00	3.42	3.18	3.16
Estimating projected cash flows (Calculating Incremental, after-tax cash flows for a proposed project).	44.1%	3.14	3.15	3.11	4.00	3.50	2.93	3.21
Selecting projects (Choosing the projects that best meet the selection criteria of the company such as: the project with the highest net present value).	39.0%	3.02	2.75	3.13	4.00	3.00	3.18	2.79
Implementing a project (Determining the order of implementation and track the selected projects).	39.0%	3.03	2.80	3.16	3.00	2.92	3.07	3.05
Developing and providing preliminary screening of project proposals.	27.1%	2.61	2.65	2.58	3.00	2.42	2.32	3.16
Performing a postcompletion audit or review.	25.4%	2.64	2.55	2.71	2.00	2.67	2.61	2.68

Note: This table presents the responses by managers of Omani firms on which procedures of capital budgeting considered difficult. Respondents are asked to rate on a scale of 1 (never) to 5 (always). The overall mean is reported as well as the percentage of respondents that answered 4 (almost always) or 5 (always). ***, **, * denotes a significant difference at the 1%, 5%, and 10% level respectively.

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