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## **Capital Budgeting Practices and Political Risk**

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**Capital Budgeting Practices and Political Risk: Evidence from Lebanon**

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## Capital Budgeting Practices and Political Risk: Evidence from Lebanon

### Abstract

**Purpose:** This paper examines: (1) how capital investment projects are appraised in Lebanon; (2) whether risk is incorporated into this process by Lebanese firms; and (3) the impact of political risk on the capital budgeting process.

**Design/Methodology/Approach:** This paper uses a questionnaire survey to investigate the capital budgeting practices of companies located in Lebanon, which is a country characterised by a high level of political risk.

**Findings:** Lebanese companies tend to employ more than one method of investment appraisal and, increasingly, they are using sophisticated discounted cashflow techniques alongside the payback period. The most widely used methods to evaluate risk include scenario and sensitivity analysis. Finally, political risk plays an important role in the capital budgeting processes of Lebanese companies.

**Originality:** The paper reports on whether the methods of capital investment appraisal used throughout advanced Western economies are employed in the context of an emerging economy. In addition, Lebanon is an ideal research site to study capital budgeting as (i) the conflicts in the country of the last 50 years have required sizeable new expenditure on capital projects; (ii) the country is characterised by high levels of political risk which may lead corporate managers to use different approaches to investment appraisal; and (iv) it provides an opportunity to study capital budgeting decisions by private, unlisted firms.

Keywords: Capital Budgeting, Political Risk

JEL Codes: D22, D25, D81, G31

## 1. Introduction

Capital budgeting is a term used to refer to the process whereby optimal investment opportunities are selected for funding from amongst the many alternatives available in order to yield maximum returns for the shareholders of the company; it typically refers to situations where outcomes from investment opportunities are uncertain and resources are limited (Jain *et al.*, 2013). Thus, the appropriate use of available resources is fundamental to ensure that the company maintains its long-term viability (Froot and Stein, 1998) by investing in the most profitable investments (Viviers and Cohen, 2011). This process is an important driver of a firm's success – especially in the long-term since future profitability depends on the long-term assets which the firm invests in today (Holmes, 1998; Toit and Pienaar, 2005).

There are two main elements in the capital budgeting process: (i) the methods employed during the appraisal of suitable investment opportunities in order to determine the best option; and (ii) the cost of funding sources available to make the capital expenditure (Bierman and Smidt, 2012). It is intuitive that the opportunities available to the business for future expansion will be affected by market forces, such as the number of competitors in the industry, customer demand, and evolving technology (Norton, 1991). Similarly, funding sources will be influenced by macroeconomic indicators such as the maturity of the financial markets and the cost of debt financing in the country (Norton, 1991). Therefore, effective capital budgeting decisions are a culmination of the manager's ability to forecast future demands and address the company's short term funding needs whilst also predicting the riskiness of the future business environment in which the capital investment will yield returns (Bierman and Smidt, 2012). An unstable macroeconomic environment may prompt managers to change their capital budgeting techniques and processes in order to optimise the expected returns of the capital expenditure undertaken (Eljelly and Abuidris, 2001).

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3 This paper focuses on the capital investment appraisal techniques applied in Lebanon;  
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5 it does this for several reasons. First, corporate finance issues in developing countries such as  
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7 Lebanon are not researched in any great depth; there are very few studies about corporate  
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9 financial management in general, and capital budgeting specifically, in developing countries.  
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11 Thus, the paper reports on whether the methods of capital investment appraisal used throughout  
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13 advanced Western economies are employed in the context of an emerging economy in the  
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15 Middle East. Second, Lebanon was chosen as the research site since this country has been  
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17 influenced to a great extent by ongoing armed conflicts over the past 50 years; from the initial  
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19 Arab-Israeli outbreak of hostilities in the late 1960's to the current war in the neighbouring  
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21 country of Syria (Salem and Azoury, 2017); these conflicts have been associated with large  
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23 influxes of refugees who need housing and services as well as reconstruction within Lebanon  
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25 following bombings. Thus, Lebanon is an ideal research site to study capital budgeting since  
26  
27 the conflicts of the last 50 years have required sizeable expenditure on capital projects. Third,  
28  
29 the region is characterised by high levels of political risk which may lead corporate managers  
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31 to use different approaches to investment appraisal than those adopted in other countries.  
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33 Indeed, there has been a significant deterioration in Lebanese political stability since late 2006  
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35 and an increase in political risk (World Bank, 2018)<sup>1</sup>. How corporate managers have responded  
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37 to this high level of political risk as well as increased instability in their capital budgeting  
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39 practices is a question which the current paper addresses. Fourth, Lebanon is a developing  
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41 country with a large private sector focused primarily on services. This feature makes it a good  
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43 research site for studying capital budgeting decisions by private, unlisted firms; to date, most  
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55 <sup>1</sup> The index of political stability increased slightly from about 20 per cent in 1998 to over 30 per cent over the 2000-2004  
56 period. However, the rise in violence within the country, together with conflicts in surrounding countries, resulted in a fall in  
57 the index to below 10 per cent in 2007. The index has remained low ever since (World Bank, 2018). The high levels of political  
58 risk in Lebanon are also apparent from the recent downgrade of the country's credit rating by Moody's (Reuters, 2017).  
59 According to Euromoney (2014), Lebanon was ranked 102<sup>nd</sup> out of 163 nations whose country risk was calculated. Further,  
60 this country risk had increased by 8.61 per cent since 2010.

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3 research on capital budgeting has concentrated on the practices of large quoted companies that  
4 only represent a tiny fraction of the number of companies that exist in the world; such  
5 companies are relatively unimportant within Lebanon because the stock market is new, small  
6 and undeveloped. The presence of many small- and medium-sized private companies in  
7 Lebanon also increases the chances of obtaining responses from a segment of the population  
8 whose views are often not canvassed and whose opinions are rarely sought (Harvie and Saleh,  
9 2008).

## 2. Literature Review

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26 This section investigates the specific evidence around capital budgeting practices and processes  
27 in the Middle Eastern region. This is the region where Lebanon is located and, whilst the  
28 country itself has not been the subject of prior high-quality research, significant insight can be  
29 gained from analysing findings about other countries in the same region. In particular, there  
30 has been a significant analysis of capital budgeting in the Gulf Cooperation Council (GCC)  
31 countries of Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates. For  
32 example, Al-Musalli and Ismail (2012) analysed the financing decisions of banks in the GCC,  
33 and their influence on the capital budgeting of firms in the region. This analysis demonstrated  
34 the importance of governance characteristics in ensuring effective financing and decision-  
35 making in capital budgeting, including the board size and number of independent directors, as  
36 well as family ownership. At the same time, evidence presented by Al-Hadi *et al.* (2015)  
37 showed that the implied cost of equity capital played a significant role in capital budgeting in  
38 the region, with managers needing to manage their cost of equity capital effectively in order to  
39 ensure sufficient freedom in their capital budgeting activity to generate returns, particularly in  
40 the presence of capital rationing.  
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Others have pointed to the influence of tax and capital mobility on capital budgeting within the GCC countries. In particular, the GCC region has been shown to have a somewhat unique fiscal environment, with some degree of capital mobility across countries, but also a significant role for the State in all countries, influencing the view of companies around tax as an expense. Indeed, according to Temimi *et al.* (2016), relatively low tax rates in the GCC nations tend to influence leverage decisions whilst weakening returns on capital investments, thus having a more significant impact on capital budgeting in this context. At the same time, the presence of Islamic financial systems in these countries limits the ability of businesses to use debt-style instruments in their capital budgeting. As a result, the domestic savings rate (or the use of internally-generated funds) in the GCC context is strongly linked to the capital budgeting process, with firms funding investments from reserves of cash and retained earnings (Al-Jarrah, 2012). However, within the presence of these financial constraints on capital budgeting practices, there is evidence that “chief financial officers (CFOs) in the Middle East are acting in a manner similar to their North American and European counterparts” in terms of applying discounting techniques to the case of capital budgeting in their countries (Chazi *et al.*, 2010, p. 195). This reflects a level of financial sophistication similar to that of some developed nations; however, it is important to recognise that this sophistication may not exist in the less developed market of Lebanon.

In terms of specific studies in the GCC region, the majority of these have been carried out in Saudi Arabia, as this nation is the largest and most economically significant member of the GCC countries. However, the Saudi context is heavily influenced by the level of government involvement in the economy; in particular, the Saudi Ministry of Finance has a key influence on capital budgeting planning and execution strategies in the country (Joharji and Willoughby, 2014). In this case, the capital budgets for many companies in Saudi Arabia are heavily influenced by the government budgeting process, and the extent to which state

resources are allocated to different sectors and activities within the economy. As a result, capital budgeting is characterised by political priorities and significant inefficiencies (Joharji and Willoughby, 2014). These findings apply particularly to investment in the oil and gas industry, where capital budgeting involves NPV analyses that tend to heavily discount any future net cash flows; there is a high level of conservatism in the Saudi capital budgeting process (Pierru *et al.*, 2013). By contrast, the case of neighbouring Kuwait is different. In this case, firms have been shown to prefer IRR as a method of capital budgeting and decision-making, with firms consciously striving to maximise their levels of profits (Mutairi *et al.*, 2012). In a similar vein, AlKulaib (2016) conducted a study on 100 companies in 2016 from different sectors in Kuwait. His results showed that 40.9 per cent of companies used NPV while 38.0 per cent employed the payback technique. In addition, 37.4 per cent of the companies confirmed that they often used the real option method in evaluating capital spending. Other studies by Chazi *et al.* (2010) and Al-Ajmi *et al.* (2011) have documented that some sophisticated elements are present in the capital budgeting process within the Middle Eastern context.

Other insights from the Middle Eastern region and the capital budgeting processes applied by companies located there can be found by considering Jordan, a country which is geographically very close to Lebanon. Companies in Jordan “give almost equal importance to the discounted and undiscounted cash flow methods in evaluating capital investment projects. It appeared also that the most frequently used technique is the profitability index followed by the payback period” (Khamees *et al.*, 2010, p. 49). This study of 53 industrial Jordanian firms discovered that 67 per cent of the sample used at least one form of investment appraisal method with discounted and non-discounted techniques preferred in roughly equal measures. Capital budgeting in the country did not reflect issues of risk or the time value of money. As such, this may give some insight into the capital budgeting issues which may be observed in nearby



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3 Lebanon, which is also largely viewed as a developing nation. Other insights can be gleaned  
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5 from the similar work of Chazi *et al.* (2007), Mutairi *et al.* (2009) and Al-Ajmi *et al.* (2011),  
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7 which also demonstrated that most of the GCC countries (including Jordan) applied sensitivity  
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9 analysis as the main method of assessing risk for capital budgeting projects.  
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14 Overall, when considering how capital investment projects are appraised in the Middle  
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16 Eastern region, the evidence suggests that both discounting and non-discounting methods are  
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18 used. In addition, the use of techniques such as NPV is prevalent among those that take account  
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20 of the time value of money. Risk appears to be incorporated into the analysis in either a rational  
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22 or a behavioural manner, depending on the country, the company and the nature of the manager.  
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24 Given the political issues in Lebanon, it may be expected that political risk will have a  
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26 significant impact on the capital investment appraisal process in the country.  
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31 The literature that has investigated the impact of political risk on capital budgeting can  
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33 be divided into two strands. The first strand has attempted to analyse how political risk can be  
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35 incorporated into the capital budgeting process, while the second strand has focused on how  
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37 companies manage political risk in capital budgeting. In terms of the first strand of the  
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39 literature, Feils and Sabac (2000) studied the effect of political risk on the capital budgeting  
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41 decision of a multinational company, which was considering whether or not to invest overseas.  
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43 The authors noted that the primary method used by the firm to appraise the investment was the  
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45 NPV technique, and that the operating cash flows of the project could be altered by political  
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47 risk through, for example, discriminatory regulations.  
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52 Bekaert *et al.* (2014) contended that sovereign spreads are useful measures of political  
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54 risk. In particular, the authors have argued that the forward looking, market-determined nature  
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56 of these spreads could provide useful information on the perceived level of political risk in a  
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58 country. Moreover, using sovereign spreads, the authors developed a measure of political risk  
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3 that they argued could be used in capital budgeting. Their results indicated that political risk  
4 was sizeable, accounting for between 17 and 31 per cent of the risk that they observed during  
5 relatively stable periods. By contrast, Clark and Tunaru (2015) argued that another method of  
6 incorporating political risk in the capital budgeting process is to estimate a project's NPV in  
7 the absence of political risk and then subtract the cost of political risk that is reflected in the  
8 price of an option (to cover possible outcomes) or an insurance policy. More modern, but lesser  
9 known, methods for evaluating and incorporating political risk into the capital budgeting  
10 process involve the application of option pricing techniques. In particular, Mahajan (1990)  
11 argued that option prices can produce accurate measurements of the loss levels generated by  
12 political risk. His analysis was based on a single risk factor – that of expropriation – and he  
13 measured its cost as the value of a European style call option held by the government on a non-  
14 dividend paying investment. Clark (1997 and 1998) extended Mahajan's analysis to consider  
15 other types of political risk besides expropriation. He used an American style option framework  
16 that included dividends and measured the cost of political risk as the value of an insurance  
17 policy that pays off all losses resulting from adverse political events.

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An alternative strand of the literature has investigated how companies incorporate political risk into the capital budgeting process. For example, Holmen and Pramborg (2009) investigated the use of capital budgeting methods by Swedish companies that were considering or undertaking foreign direct investment during the period September - November 2003. In particular, a survey questionnaire was sent to the CFO's of 497 companies; the number of responses to the survey was 200<sup>2</sup>. One of the key questions in the survey concerned the management of country-specific political risk. Respondents to the questionnaire were asked to

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<sup>2</sup> Out of the 200 responses, 54 firms indicated that the questions in the survey were not relevant to them – often because the firms were not considering any international investment projects or because the decision to undertake FDI had been made some years previously. Thus, the authors received a total of 145 usable responses.

rank how often they used particular methods to manage country-specific risks. The methods specified in the questionnaire included the adjustment of cash flows and the discount rate, as well as the purchase of political risk insurance. The results showed that 66 per cent of the respondents adjusted for country-specific political risk by decreasing forecasted cash flows, shortening the payback period and increasing the hurdle rate. In addition, 43 per cent indicated that they used different decision criteria for foreign direct investment in countries with high political risk. Comments the authors received included a statement that the firm “refrains from investments in countries with high political risk”, that the firm “uses higher hurdle rates for these investments”, and that the firm “uses a shorter payback period”. This suggests that firms do consider this (mostly idiosyncratic) risk and that it is an important factor for firms making foreign investment decisions (Holmen and Pramborg, 2009). The findings from the questionnaire also revealed that the use of the NPV method to evaluate international investments decreased with the risk of expropriation. Overall, the authors concluded that, in the presence of political risk, managers were reluctant to rely on the traditional NPV method as they felt that this technique did not adequately capture political risk. Furthermore, the study found that companies tended to use the payback method for projects that were perceived to have a high level of political risk. This finding is consistent with managers being boundedly-rational decision-makers, who use simple rules of thumb when the deliberation cost is high (Boyle and Guthrie, 1997; Brigham and Ehrhardt, 2013; McDonald, 2000; Graham and Harvey, 2001; Holmen and Pramborg, 2009).

### 3. Research Method and Findings

#### 3.1 Research Method and Sample Details

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3 This paper reports the results of a questionnaire that was sent to a selection of companies in  
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5 2018. Some 225 companies were initially asked to participate in the survey<sup>3</sup>. The list of the  
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7 businesses in Lebanon was taken from the website <http://www.5index.com><sup>4</sup> and a random  
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9 sample of firms selected. The sample was chosen according to a range of criteria. First,  
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11 potential respondents were initially contacted and asked whether they would like to participate  
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13 in the survey. Only those who wished to participate were given a questionnaire. Second, firms  
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15 which recently undertook investment projects were chosen so that they had relevant experience  
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17 of project financing and issues connected with these activities. Due to difficulties with the  
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19 postal system in Lebanon, it was decided to distribute the questionnaire by electronic means.  
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21 Some 100 companies' representatives participated in the survey; most were located in Beirut  
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23 while some of them were located in other large cities of Lebanon, such as Tripoli, Zahle and  
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25 Jounieh. Thus, the respondents were distributed across a wide geographical area and drawn  
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27 from several cities. Specifically, 52 respondents were based in Beirut, 26 were located in  
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29 Tripoli, 12 were from Zahle, and 10 were based in Jounieh.  
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36 Table I shows that the respondents worked in three broad sectors: 28 were employed  
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38 by companies in the construction industry, 40 in consultancy firms and 32 in companies from  
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40 the food industry. The table also shows that 61.0 per cent of participants in this survey were  
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42 employed in analyst positions, and 39.0 per cent of respondents were owners or managers/  
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44 CEOs in their companies.  
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56 <sup>3</sup> The number of 225 was selected based on the response rate to previous surveys in this area; if 40 per cent replied,  
57 some 90 usable responses would be received.

58 <sup>4</sup> [www.5index.com](http://www.5index.com) is a comprehensive source of all commercial companies operating in Lebanon. This website  
59 is among the 500 most popular websites in the country according to the Alexa ranking. Other websites did not  
60 provide as much information on the corporate sector in Lebanon as this website.

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3 It is apparent from the results of this survey that the tenure of those employed in  
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Lebanese companies is often significant and respondents do not change jobs frequently; the most frequently observed tenure among the respondents was between five to nine years and 10-14 years. Most respondents indicated that their companies earned revenue in the ranges of \$1.0m-\$4.9m and \$5.0m-\$9.9m; both ranges accounted for 36 per cent of the whole sample. Thus, most companies where the respondents worked were fairly large within Lebanon, even though they are modest sized firms by European standards, and presumably undertook a sizeable amount of capital expenditure; as such, the views of those responding should be both authoritative and insightful. Interestingly, all 17 companies with revenue under \$1m were from the consultancy sector; none of the firms from this industry had revenue higher than \$5m. At the same time, a majority of companies from the construction and food industries had an annual revenue in excess of \$5.0m. Overall, the tenure and the position of the respondents varied as did the sectors of the companies where the respondents worked. Therefore, it was decided to examine responses by sector, by respondent position and by respondent tenure with their current organisation as well as in total. Specifically, the results are analysed (i) for three sectors (where CN refers to Construction, CS refers to consultancy and FD refers to Food); (ii) for two respondent positions (Analyst and Other (Manager/Owner)); and (iii) based on the tenure of the respondent, where "Low" is less than five years and "High" is greater than or equal to five years).

Over two-thirds of Lebanese companies from the sample responded that they have a mix of financing, using both debt and equity capital to fund investments. At the same time, 28.0 per cent of companies did not use any debt financing. There were only four companies where debt was higher than 50.0 per cent. Three of these companies operated in the construction industry while none was in the food sector. There were also sectoral differences in the percentage of companies with different levels of debt; 77.5 per cent of companies in

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3 consultancy and 68.8 per cent of companies in the food sector had a debt level which was lower  
4 than 50.0 per cent of the total capital.  
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### 10 11 **3.2 Usage and Importance of Capital Budgeting Techniques**

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14 Table II summarises the answers to a question on respondents' views about the frequency of  
15 use of six project appraisal methods, including payback (PB), discounted payback (DPB), net  
16 present value (NPV), internal rate of return (IRR), modified internal rate of return (MIRR), and  
17 the profitability index (PI). All participants reported that they either often or always use the  
18 payback period method for appraising projects, with 85.0 per cent of the respondents indicating  
19 that their firms always estimate the payback period of a capital project that they are planning.  
20 This finding did not vary according to the industry where the respondent worked. Some 93.8  
21 per cent of food companies and 89.3 per cent of construction companies employ this indicator  
22 for deciding whether or not to proceed with capital projects. The finding also did not vary  
23 according to the position and tenure of the respondent; however, respondents with five or more  
24 years of experience with their current employer indicated that their firm was more likely to  
25 always use the payback period. The discounted payback period was less often used, with 62.0  
26 per cent of firms employing it from time to time, 26.0 per cent using it rarely or never and only  
27 12.0 per cent using it on a frequent basis. Thus, the findings lend support to those of Holmen  
28 and Pramborg (2009), and suggest that in a country characterised by political risk, managers  
29 are reluctant to rely on the NPV method as they feel that it does not adequately capture political  
30 risk. Furthermore, the results indicate that Lebanese companies tend to rely on the use of the  
31 payback method. This finding is consistent with the notion that managers are rational decision-  
32 makers who use simple rules of thumb when the deliberation cost is high  
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58 <Table II here>  
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3 However, NPV appeared to be the second most popular technique for appraising  
4 projects, with 62.0 per cent of respondents claiming that their firm often or always use it; only  
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6 20.0 per cent indicated that their companies used it sometimes and 18.0 per cent claimed that  
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8 their firms were unlikely to use it at all. There were some sectoral differences in the response  
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10 to this question. In particular, the responses indicated that 17.9 and 20.0 per cent of firms from  
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12 the construction and consultancy industries, respectively, did not employ (or rarely employed)  
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14 NPV in their project evaluations. All participants from the food sector highlighted that they  
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16 used this technique at least sometimes. Moreover, the questionnaires indicated that 75.0 per  
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18 cent of respondents who worked in the food sector claimed that their firms used NPV regularly  
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20 while the equivalent figures were 57.1 and 62.5 per cent for the construction and consultancy  
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22 sectors, respectively. By contrast, there were very few differences among the answers when  
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24 the responses were analysed according to the position and tenure of the respondents. The one  
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26 exception to this generalisation is that a smaller percentage of analysts suggested that their  
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28 companies often used the NPV as compared to those firms where non-analysts worked (47.5  
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30 per cent versus 71.8 per cent).

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33 The remaining methods, including IRR, MIRR, DPB and PI, were rarely used to  
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35 evaluate capital spending proposals as the PB method in particular and NPV methods were  
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37 generally considered to be sufficient for decision-making purposes. Although there was some  
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39 variability among the responses when the answers were analysed according to the tenure of the  
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41 individual replying, with the exception of a higher proportion of those with less than five years  
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43 of experience using the PI technique more often, there was a remarkable consistency in  
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45 responses across the different sub-groups analysed. The key finding from these responses is  
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47 that companies in Lebanon rarely use sophisticated methods of project appraisal other than  
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49 NPV and often combine this with an analysis of a project's payback period.  
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Alongside a question about the frequency with which particular appraisal methods are used by respondents' companies, participants were also asked for their views on the general importance of these methods within the firms where they worked. Several conclusions emerge from an analysis of the results in this table. First, each appraisal method is rated as more important compared to the views expressed about the actual usage of these methods by the companies in Table II. This suggests that, in general, Lebanese firms understand the significance of the appraisal techniques that can be used but do not always employ them in practice, ~~possibly because of the high levels of political risk. However, the gap between respondents' perceptions about importance and their views about actual usage in practice is not very large; this means that there is no great difference between respondents' theoretical understanding of the importance of particular appraisal techniques and their practical use.~~ What is also noteworthy from the replies in Table III is that the project evaluation methods that are rarely employed by Lebanese companies, such as DPB and MIRR, are also considered to be the techniques that are less important. Thus, there is a consistency in the replies supplied by those who participated in the questionnaire.

**<Table III here>**

The third important conclusion from Table III is that there are some sectoral differences in respondents' views about the importance of different techniques within the firms where they worked. For example, the DPB method is more important according to respondents who worked in the food sector. NPV is always seen as important by more respondents in the same industry. By contrast, IRR is viewed as being rarely important by more respondents from the construction sector; over 17.0 per cent of those who replied from this sector selected the "rarely" option. A final conclusion from Table III is that when the responses are grouped according to the position of the individual supplying their views, there are a small number of instances where the importance often attached to a technique is less than the percentage who



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3 suggested that a technique is often used. For example, 71.8 per cent of the non-analyst group  
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5 indicated that their firm often used NPV while only 61.5 per cent of them thought that this  
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7 technique was often important for project appraisal; for over 10 per cent of these respondents,  
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9 NPV was often used even though it was rarely thought to be important, possibly because it was  
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11 part of a routine within a company or because it was required by funders.  
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### 21 3.3 Risk in Capital Budgeting

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24 In general, some 58.0 per cent of those consulted considered a project's risk as an important  
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26 influence on the appraisal technique used<sup>5</sup>. However, responses to this question were almost  
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28 bimodal since 40.0 per cent gave a neutral answer to this question. Risk was viewed as most  
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30 significant for those who worked in consultancy companies while fewer respondents from  
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32 construction and food firms attached the same level of importance to this aspect of a project.  
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34 This differential response may be connected to the fact that consultancy is a more heterogenous  
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36 industry with a more volatile income stream (Srinivasan, 2014). Therefore, risk has a  
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38 comparatively greater level of importance for companies in this sector as compared to the other  
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40 two areas<sup>6</sup>.  
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46 Participants were also asked about their views on how Lebanese companies evaluated  
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48 risk in a specific investment project. The four suggested methods mentioned in the question  
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53 <sup>5</sup> The details for this specific question are not reported in the paper but are available from the authors upon request.

54  
55 <sup>6</sup> The nature of the project was seen as important for 67.0 per cent of respondents. As with size, the nature of the  
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57 project was more important for those in construction and consultancy companies, with 71.50 and 70.0 per cent,  
58  
59 respectively, of these rating it as 'important'. By contrast, this feature was rated as important for only 52.60 per  
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cent of those employed by food companies. One possible explanation for this finding could be that there is a  
greater diversity of projects in these two industries and therefore companies in these sectors attach more  
importance to understanding what a project involves and its potential implications when deciding on the type of  
appraisal method to use. More information on these results is available from the authors upon request.

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3 included scenario analysis, sensitivity analysis, Monte Carlo simulation and raising the  
4 discount rate. In addition, the respondents could suggest other methods employed in their firms.  
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7 The answers indicated that most respondents believed that their firms used different approaches  
8 to evaluate a project's risk from the specific alternatives supplied in the question. In particular,  
9  
10 56.0 per cent selected the "Other" option with most of these working as "Analysts" within  
11 companies and being employed for less than five years in their current position. Moreover, a  
12 majority of the comments provided by these respondents indicated that they are prone to using  
13 intuition and mainly qualitative methods for estimating risks. These methods included some  
14 aspects of strategic analysis such as the PESTEL<sup>7</sup> or SWOT<sup>8</sup> frameworks. These frameworks  
15 scan the internal and external environment in order to identify threats which might be  
16 detrimental to the organisation or to a particular project. Thus, about one-half of the  
17 respondents' companies limit their risk assessment activities to general frameworks without  
18 estimating a quantitative measure of risk.  
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34 **<Table IV here>**  
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37 Of the remaining respondents who reported that their firms use quantitative measures  
38 of project risks, 20.0 per cent indicated a preference for sensitivity analysis, whereas scenario  
39 analysis and raising the discount rate were each used by 11.0 per cent of the sample. Monte  
40 Carlo simulation was only selected by two per cent of respondents; those who commented on  
41 this choice indicated that it was not a popular approach because of its complexity and the need  
42 to construct mathematical models. In fact, both scenario and sensitivity analysis also require  
43 specific knowledge of business processes and models; the difference is that while scenario  
44 analysis is mostly directed at modelling difficult strategic scenarios from the worst case to the  
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58 <sup>7</sup> The PESTEL framework refers to the analysis of political, economic, social, technological, environmental and  
59 legal factors that may impact on a firm or project.

60 <sup>8</sup> The SWOT framework refers to an analysis of the strengths, weaknesses, opportunities and threats of a firm or  
project.

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3 best case outcome, sensitivity analysis estimates how the output or result of the particular  
4 project may change depending on how each input is varied one at a time. Meanwhile, raising  
5 the discount rate appears to be the simplest method of evaluating risks as it implies that some  
6 risks exist in the project and the discount rate of the project has to be increased to take account  
7 of possible adverse outcomes; slack to mitigate potential negative outcomes is estimated,  
8 sometimes without modelling these risks mathematically.  
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18 One half of respondents who worked in the construction sector indicated that their firms  
19 use qualitative and intuitive methods for estimating risks. Among the remaining construction  
20 company respondents, 21.4 per cent claimed that their firms study possible scenarios, 17.9 per  
21 cent use sensitivity analysis and 10.7 per cent increase the discount rate to take account of the  
22 risks present. A majority of participants from the consultancy industry (57.5 per cent) used  
23 'other' methods, while most respondents from the food sector (59.4 per cent) stated that their  
24 firms use qualitative methods; respondents from another 15.6 per cent of firms in this industry  
25 preferred to simply raise the discount rate instead of undertaking complicated modelling.  
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### 40 **3.4 The Role of Political Risk in Investment Appraisal**

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42 The questionnaire also sought information from respondents on the attitude of their companies  
43 to political risk in Lebanon. Views were also gathered on how these risks were considered by  
44 businesses when evaluating proposed capital investments. Table V reports the general  
45 responses of participants about political risks in Lebanon. The most common reaction of  
46 business to political risk in Lebanon is that companies periodically account for these risks in  
47 their projects. This implies that, on the one hand, these risks exist and most of the respondents'  
48 companies are aware of them as they take them into account when appraising capital  
49 investments. On the other hand, these risks are not considered in every project according to a  
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3 majority (98.0 per cent) of those replying to the questionnaire. The most frequent answer given  
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5 by 66.0 per cent of respondents was that these risks are accounted for 'sometimes', while 19.0  
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7 per cent of those polled 'often' account for these risks when evaluating investments; only 11.0  
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9 per cent do it 'rarely' and two per cent "never" consider political risk. Surprisingly, none of the  
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11 respondents who worked in the construction industry suggested that their firms 'always'  
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13 accounted for these risks. However, respondents indicated that all firms in the consultancy  
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15 industry considered these risks from time to time; none of these respondents answered that they  
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17 'never' take political risk into account.  
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23 <Table V>  
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25 The same pattern can be seen in answers to the question on how often political risk  
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27 affects the investment decisions of the respondents' companies. Some 72.0 per cent of  
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29 respondents noted that these risks 'sometimes' influence project appraisals. However, this type  
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31 of risk 'often' influenced investment decisions in only five per cent of companies, while none  
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33 of the respondents indicated that political risk 'always' affects appraisal decisions. This implies  
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35 that most respondents' firms are aware of political risk in Lebanon and sometimes take it into  
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37 account when making investment decisions. Another noteworthy result in Table V is that 16.0  
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39 per cent of companies do not employ specific methods to account for political risk in project  
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41 appraisal. However, this approach varied across sectors; only 7.1 per cent of construction  
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43 companies ignore political risk when appraising projects, while 20.0 per cent of respondents in  
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45 the consultancy sector and 18.8 per cent of respondents in the food industry follow a similar  
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47 approach. An inspection of Table V reveals that 40.0 per cent of companies appear to use  
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49 methods 'other' than those listed in the questionnaire to account for political risk in their project  
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51 appraisals; most of the respondents who selected this option suggested that their firms adopt  
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53 non-quantitative approaches to account for this type of risk. They applied mostly intuitive  
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55 adjustments and subjective changes to the cash flows or the discount rate when political risk  
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3 was thought to be high. Among the quantitative methods identified by the respondents, 21.0  
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5 per cent suggested that their firm employed sensitivity analysis to consider the impact of  
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7 political risk, 12.0 per cent used scenario analysis, while the remaining 11.0 per cent increased  
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9 the discount rate when appraising investment projects that were thought to be subject to  
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11 political risk. A disaggregated analysis of the responses indicated that sensitivity analysis is  
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13 used more by construction and consultancy firms, with 21.4 and 25.0 per cent of firms,  
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15 respectively, applying this method. By contrast, only 15.6 per cent of respondents in food  
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17 companies employ this method – a similar percentage simply adjust the discount rate in their  
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19 calculations. Analysts were more likely to select the “other” option when asked how they  
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21 usually take political risk into account (42.6 per cent versus 35.9 per cent) while non-analysts  
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23 were nearly twice as likely to conduct sensitivity analysis in order to incorporate political risk  
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25 into their evaluation. Respondents with a tenure of less than five years were more than twice  
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27 as likely to ignore political risk than their more experienced counterparts (33.3 per cent versus  
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29 14.9 per cent); those with a good deal of experience seemed to recognise that this issue should  
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31 not be ignored in Lebanon.  
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39 Respondents were asked about the investment appraisal techniques that they employ  
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41 when political risk is relatively high. The results are summarised in Table VI. The table shows  
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43 that the pattern of answers was similar to that for the earlier question about the techniques used  
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45 by Lebanese companies for project appraisal. Thus, one general conclusion is that appraisal  
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47 techniques among Lebanese companies do not change when political risk is high. An  
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49 alternative explanation is that, since Lebanese companies have lived with political risk for a  
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51 long time, the earlier responses of the survey participants may have taken this factor into  
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53 account.  
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57 <Table VI>  
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3 Some 95.0 per cent of respondents reported that their firms often or always use the  
4 payback method, while all of the respondents noted that they use this method at least sometimes  
5 when appraising projects. A smaller percentage (57.0 per cent) admitted that their firms use the  
6 discounted payback period sometimes, while a sizeable minority claimed that their firms rarely  
7 or never use this technique when political risk is high. According to 28.0 per cent of the  
8 respondents, NPV is often used by their companies while only one company always employs  
9 it in situations characterised by high political risk. Some 60.0 per cent of respondents claimed  
10 that their firms sometimes use IRR whereas only 12.0 per cent rely on this technique regularly.  
11 Usage of MIRR was lower among Lebanese firms with only 15.0 per cent of respondents  
12 claiming that their firms employ it from time to time. The profitability index was employed  
13 more frequently when political risk was high; 47.0 per cent of companies claimed to use it  
14 sometimes and 34.0 per cent use it frequently. According to the respondents, construction  
15 companies tend to use the profitability index more often, with 46.5 per cent employing it on a  
16 regular basis, while 35.0 per cent of consultancy firms and 21.0 per cent of food companies use  
17 this technique to evaluate projects when political risk is high. When the responses are split  
18 according to the tenure of the respondent, a sizeable minority of those with five or more years  
19 of experience in their post (22.3 per cent) suggested that they often used an “other” technique  
20 to evaluate a capital investment when political risk was high. If these responses are compared  
21 with the results in Table II where no respondent picked this option, the findings suggest that a  
22 high level of political risk leads to changes in the capital budgeting decision making of some  
23 of the respondents.

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26 However, a majority of those who completed the questionnaire (54.0 per cent of  
27 respondents) indicated that their firms do not use any additional methods of project evaluation  
28 when political risk is high, although the remaining 46.0 per cent of respondents pointed out  
29 that their companies tend to make qualitative adjustments or alter their strategic plans in these  
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3 circumstances. In general, a majority of Lebanese companies are not prone to making  
4 significant distinctions in the use of project appraisal methods in 'usual times' and times of  
5 high political risks.  
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10 An interesting question is whether the educational background of the respondents  
11 influenced their choice of appraisal methods in conditions of high political risk. Table VII  
12 shows whether the level of education has an effect on the choice of appraisal method when  
13 political risk is high; where respondents who are highly educated hold either a PhD, Masters  
14 or Professional Qualification and the less highly educated hold a Bachelor or High School  
15 degree. The analysis in the table shows that the p-values are higher than 0.05 for all of the  
16 appraisal methods except the profitability index. This result suggests that the use of profitability  
17 index depends significantly on educational background in times of high political risk for both  
18 highly educated and less highly educated respondents. However, the table shows that the choice  
19 of the remaining variables is not affected by the educational background of the respondent.  
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34 **<Table VII>**  
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37 The respondents were also asked for two estimates of their firms' required rate of return  
38 when political risk is high and when it is low. The answers sought to examine whether  
39 respondents believed that Lebanese firms took political risk into account and adjusted the  
40 discount rates of their businesses to this type of risk. Table VIII summarises the answers to this  
41 question. The most commonly expected required rate of return on investment projects when  
42 political risk is low lay between 15.0 and 30.0 per cent, with 92.0 per cent of respondents  
43 believing that their companies anticipate that projects should deliver this level of profitability.  
44 Within the different sectors, a different spread of required returns emerged. In particular, a  
45 greater percentage of respondents from consultancy companies (32.5 per cent) expected rates  
46 of return of between 15 – 19 per cent and 25 – 29 per cent. By contrast, 50.0 per cent of  
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respondents from food companies thought that their firms had a required rate of return of between 20 – 24 per cent. However, only 17.9 per cent of respondents from construction companies and 15.6 per cent of respondents who worked in food firms expected their investment to yield a rate of return of between 25 – 29 per cent. Only 5.0 per cent of those in consultancy companies and 3.1 per cent of those in food firms believed that their companies required a rate of return of between 31 and 35 per cent from their projects; there were no respondents from the construction sector who selected this option.

<Table VII here>

In contrast with finance theory which suggests that higher (political) risk should be associated with a higher expected return, the main finding to emerge from Table VII is that the minimum required rate of return on investment projects was expected to be lower when political risk increased. In general, the range of the returns expected by Lebanese companies shifted downwards by about 5.0 per cent. Specifically, when political risk was high, 99.0 per cent of respondents expected their firms to accept a rate of return of between 10 and 24 per cent. The largest share of respondents, namely 55.0 per cent, answered that the minimum rate of return which their firms would expect was between 15 and 19 per cent. This was the case for 60.7 per cent of those who worked in construction companies and 62.5 per cent of those employed in consultancy; only 40.6 per cent of those in the food sector selected the same option. At the same time, only 25.0 per cent of those in the construction and consultancy sectors expected a rate of return on a project of between 20 to 24 per cent, while 50.0 per cent of food companies expected their investment projects to provide this level of return. One reason for this finding may be that the respondents in Lebanon were used to situations characterised by a great deal of political instability and had already factored that into their discount rate. In addition, the respondents may have adopted a pragmatic view that the actual return would be lower when the risk was higher despite the focus of finance theory.



#### 4. Conclusion and Implications

This paper has described the results of a detailed questionnaire-based study of views amongst Lebanese firms in three sectors regarding the capital budgeting process. An analysis of the questionnaire showed a wide variety of views on relevant topics including the usage and importance of various methods, the risk measurement techniques employed, and the role of political risk in the capital budgeting process.

The results highlighted a number of issues about the views of corporate firms. For instance, the results suggested that the usage of payback is the most commonly used method for evaluating investments in Lebanon; this finding is similar to those documented for firms in other developing countries. However, the finding that the payback method is used widely by Lebanese firms is in contrast to the dramatic shift away from this technique (and other less sophisticated methods) towards discounted cash-flow methods throughout the developed world over the last 20 years (AlKulaib, 2016; Szűcsné Markovics, 2016; Pike *et al.*, 2018). One potential explanation for this finding is the high deliberation costs of estimating cashflows and risk profiles that are involved in making capital budgeting decisions in countries characterised by high levels of political risk. That is, managers avoid these costs by using rules of thumb, such as the Payback method, instead of the more information intensive, and therefore costly, NPV method. Such an approach would support the theoretical concept of bounded rationality that when decision-makers face high deliberation costs, they use simple rules of thumb to approximate optimality (Holmen and Pramborg, 2009).

In terms of accounting for risk in project appraisal, most respondents revealed that their companies take risk into account when assessing investment projects. The results showed that about one-half of Lebanese companies tend to use intuition and, to a large extent, qualitative

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3 methods of assessing risks, including project and political risk. On the other hand, quantitative  
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5 methods for estimating risks, including sensitivity analysis and scenario analysis were applied  
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7 by about one-quarter of firms. This finding indicates a high level of education of specialists in  
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9 Lebanese companies and their desire to base the business on sophisticated and complex  
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11 quantitative models rather than intuition and more subjective assessments. This finding is in  
12  
13 contrast to the widespread employment of the simple payback measure documented earlier, but  
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15 it may reflect the fact that many managers of Lebanese firms have been educated according to  
16  
17 Western standards in sophisticated investment appraisal techniques that have been employed in  
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19 developed countries; or, alternatively, they may have studied US textbooks within Lebanese  
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21 universities (Mohammed, 2013) and this may have increased awareness about these techniques  
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23 and encouraged their use among Lebanese companies.

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29 One final key finding that emerged from the analysis presented in this paper indicates that political  
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31 risk is prominent in the respondents' minds in several ways, as many capital budgeting decisions are  
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33 affected by the political instability in Lebanon. Indeed, political risk has been a prominent feature of  
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35 the Lebanese environment since the end of the civil war, and it appears to affect the investment  
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37 decisions made by firms. Mao (1970) and Brigham and Ehrhardt (2013) suggest the Payback method  
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39 to be a complement to NPV because it can be used as an approximation of the riskiness of a project.  
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41 This paper found similar findings in that, when political risk is perceived to be significant, Payback is  
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43 used as a substitute for, the NPV method. One implication of this result is that political risk may be  
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45 socially costly in terms of reducing long-term investment in the country; and also that the investments  
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47 taking place will mainly be short term in nature. That is, long-term investments are avoided due to  
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49 heightened political risk, thus potentially reducing the benefits to future growth and damaging the  
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51 long-term economic prospects of a country.

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3 There are a number of important implications from this study. While the results about  
4 the usage of capital budgeting techniques are similar to findings from other Middle Eastern  
5 countries, sectoral and other differences emerge, suggesting that future investigations in this  
6 area need to take account of the tenure and position of the respondent as well as the sector in  
7 which their company is operating when looking at investment appraisal decisions. Another  
8 implication is that a mix of DCF and non-DCF methods are used by Lebanese companies to  
9 select capital projects for investment; thus, the approaches of companies in an emerging market  
10 such as Lebanon are not dissimilar from the techniques used in Western developed countries.  
11 However, what is different is the discount rate used for a NPV analysis and the relatively  
12 sophisticated and subjective approaches employed to incorporate risk into the analysis; nearly  
13 half of the respondents reported using the cost of debt or some notion of the owner's required  
14 rate of return for this purpose. Not surprisingly, in an environment characterised by a high level  
15 of risk and uncertainty, sophisticated techniques such as sensitivity and scenario analysis were  
16 employed by a sizeable minority of respondents; the usual technique of raising the discount  
17 rate that is employed in countries such as the US and the UK was not frequently employed,  
18 perhaps because discount rates were already high. Instead, most respondents indicated that they  
19 made subjective adjustments to take account of risk when appraising investments. Prolonged  
20 exposure to high levels of risk and uncertainty in a country such as Lebanon may have  
21 sharpened the expertise of the respondents in terms of being able to subjectively adjust a  
22 project's cash flows or discount rate for risk. Future research on capital budgeting in emerging  
23 market countries needs to recognise the nature of this subjective adjustment in any  
24 investigations. The final implication of this research is that political risk is an issue that needs  
25 to be specifically considered when investigating capital budgeting issues in an emerging  
26 country such as Lebanon. According to the respondents in the current analysis, such risk was  
27 influential and sometimes taken into account in the investments being evaluated. More work  
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3 on when this specific type of risk is included in the analysis and how it is incorporated into the  
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5 capital budgeting decision-making process is a topic where further work is needed.  
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**Table I: Background Information**

		Total		CN		CS		FD	
		No.	%	No.	%	No.	%	No.	%
Sample Size		100	100	28	28.0	40	40.0	32	40.0
Position	Analyst	61	61	17	27.9	26	42.6	18	29.5
	Other	39	39	11	28.2	14	35.9	14	35.9
Tenure	0-5	6	6	1	3.6	1	2.5	4	12.5
	5-9	44	44	16	57.1	17	42.5	11	34.4
	10-14	40	40	11	39.3	19	47.5	10	31.3
	15-19	7	7	0	0.0	3	7.5	4	12.5
	20+	3	3	0	0.0	0	0.0	3	9.4
Company's Revenue	<\$1m	17	17	0	0.0	17	42.5	0	0.0
	\$1m - \$4.9m	36	36	4	14.3	23	57.5	9	28.1
	\$5m - \$9.9m	36	36	17	60.7	0	0.0	19	59.4
	>\$10m	11	11	7	25.0	0	0.0	4	12.5
Debt Financing	No debt	28	28	10	35.7	8	20.0	10	31.3
	1-49	68	68	15	53.6	31	77.5	22	68.8
	50+	4	4	3	10.7	1	2.5	0	0.0
Equity Financing	<50	40	40	15	53.6	12	30.0	13	40.6
	50+	60	60	13	46.4	28	70.0	19	59.4
Retained Earnings	5-25	77	77	16	57.1	25	62.5	21	65.6
	>25	23	23	12	42.9	15	37.5	11	34.4

Note: This table provides information about the sample: the position of the participants and the number of years of experience in their current position. The table also provides details about the revenue of the company and sources of financing used by these companies: equity, debt and retained earnings. CN refers to Construction, CS refers to consultancy and FD refers to Food.



**Table II: The Usage of Project Appraisal Techniques**

How often does your company use the following method(s) to decide whether a project should be undertaken?		Total (%)	Sector			Position		Tenure	
			CN (%)	CS (%)	FD (%)	Analyst (%)	Other (%)	Low (%)	High (%)
Payback Period	Never	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Rarely	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Sometimes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Often	15.0	10.7	20.0	6.3	13.1	17.9	50.0	12.8
	Always	85.0	89.3	80.0	93.8	86.9	82.1	50.0	87.2
Discounted Payback Period	Never	7.0	10.7	5.0	6.3	6.6	7.7	0.0	7.4
	Rarely	19.0	28.6	15.0	9.4	18.0	20.5	0.0	20.2
	Sometimes	62.0	57.1	62.5	59.4	67.2	53.8	83.3	60.6
	Often	9.0	0.0	15.0	21.9	4.9	15.4	16.7	8.5
	Always	3.0	3.6	2.5	3.1	3.3	2.6	0.0	3.2
Net Present Value (NPV)	Never	1.0	0.0	2.5	0.0	1.6	0.0	0.0	1.1
	Rarely	17.0	17.9	17.5	0.0	18.0	15.4	16.7	17.0
	Sometimes	20.0	25.0	17.5	25.0	24.6	12.8	33.3	19.1
	Often	57.0	50.0	60.0	46.9	47.5	71.8	50.0	57.4
	Always	5.0	7.1	2.5	28.1	8.2	0.0	0.0	5.3
Internal Rate of Return (IRR)	Never	1.0	3.6	0.0	0.0	1.6	0.0	0.0	1.1
	Rarely	17.0	25.0	10.0	6.3	18.0	15.4	0.0	18.1
	Sometimes	59.0	53.6	62.5	46.9	57.4	61.5	66.7	58.5
	Often	19.0	14.3	25.0	28.1	16.4	23.1	33.3	18.1
	Always	4.0	3.6	2.5	18.8	6.6	0.0	0.0	4.3
Modified Internal Rate of Return (MIRR)	Never	25.0	25.0	25.0	15.6	27.9	20.5	0.0	26.6
	Rarely	66.0	71.4	65.0	53.1	63.9	69.2	100.0	63.8
	Sometimes	7.0	0.0	10.0	28.1	4.9	10.3	0.0	7.4
	Often	1.0	0.0	0.0	3.1	1.6	0.0	0.0	1.1
	Always	1.0	3.6	0.0	0.0	1.6	0.0	0.0	1.1
Profitability Index (PI)	Never	1.0	3.6	0.0	0.0	1.6	0.0	0.0	1.1
	Rarely	27.0	21.4	40.0	9.4	23.0	33.3	0.0	28.7
	Sometimes	61.0	57.1	55.0	65.6	65.6	53.8	66.7	60.6
	Often	10.0	14.3	5.0	25.0	8.2	12.8	33.3	8.5
	Always	1.0	3.6	0.0	0.0	1.6	0.0	0.0	1.1
Other	Never	86.0	82.1	90.0	84.4	86.9	84.6	83.3	86.2
	Rarely	14.0	17.9	10.0	15.6	13.1	15.4	16.7	13.8
	Sometimes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Often	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Always	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: This table provides a summary of responses on the choice of appraisal methods. The analysis is performed for three sectors (where CN refers to Construction, CS refers to consultancy and FD refers to Food), for two respondent positions (Analyst and Other (Manager/Owner)) and based on the tenure of the respondent (Low (which is less than five years) and High (which is greater than five years)).

**Table III: The Importance of Project Appraisal Techniques**

How important are the following method(s) to decide whether a project should be undertaken?		Total (%)	Sector			Position		Tenure	
			CN (%)	CS (%)	FD (%)	Analyst (%)	Other (%)	Low (%)	High (%)
Payback Period	Never	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Rarely	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Sometimes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Often	10.0	7.1	15.0	6.3	8.2	12.8	33.3	8.5
	Always	90.0	92.9	85.0	93.8	91.8	87.2	66.7	91.5
Discounted Payback Period	Never	7.0	10.7	5.0	6.3	6.6	7.7	0.0	7.4
	Rarely	14.0	21.4	12.5	9.4	16.4	10.3	16.7	13.8
	Sometimes	60.0	60.7	60.0	59.4	57.4	64.1	33.3	61.7
	Often	16.0	3.6	20.0	21.9	16.4	15.4	50.0	13.8
	Always	3.0	3.6	2.5	3.1	3.3	2.6	0.0	3.2
Net Present Value (NPV)	Never	1.0	0.0	2.5	0.0	1.6	0.0	0.0	1.1
	Rarely	8.0	7.1	15.0	0.0	8.2	7.7	0.0	8.5
	Sometimes	20.0	25.0	12.5	25.0	23.0	15.4	33.3	19.1
	Often	51.0	53.6	52.5	46.9	44.3	61.5	33.3	52.1
	Always	20.0	14.3	17.5	28.1	23.0	15.4	33.3	19.1
Internal Rate of Return (IRR)	Never	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Rarely	9.0	17.9	5.0	6.3	9.8	7.7	0.0	9.6
	Sometimes	54.0	57.1	57.5	46.9	54.1	53.8	50.0	54.3
	Often	27.0	17.9	32.5	28.1	27.9	25.6	50.0	25.5
	Always	10.0	7.1	5.0	18.8	8.2	12.8	0.0	10.6
Modified Internal Rate of Return (MIRR)	Never	18.0	14.3	22.5	15.6	18.0	17.9	0.0	19.1
	Rarely	53.0	64.3	45.0	53.1	54.1	51.3	83.3	51.1
	Sometimes	27.0	17.9	32.5	28.1	24.6	30.8	16.7	27.7
	Often	1.0	0.0	0.0	3.1	1.6	0.0	0.0	1.1
	Always	1.0	3.6	0.0	0.0	1.6	0.0	0.0	1.1
Profitability Index (PI)	Never	1.0	3.6	0.0	0.0	1.6	0.0	0.0	1.1
	Rarely	16.0	7.1	27.5	9.4	16.4	15.4	0.0	17.0
	Sometimes	60.0	60.7	55.0	65.6	57.4	64.1	50.0	60.6
	Often	21.0	21.4	17.5	25.0	21.3	20.5	33.3	20.2
	Always	2.0	7.1	0.0	0.0	3.3	0.0	16.7	1.1
Other	Never	86.0	82.1	90.0	84.4	86.9	84.6	83.3	86.2
	Rarely	14.0	17.9	10.0	15.6	13.1	15.4	16.7	13.8
	Sometimes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Often	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Always	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: This table provides a summary of responses on the choice of appraisal methods. The analysis is performed for three sectors (where CN refers to Construction, CS refers to consultancy and FD refers to Food), for two respondent positions (Analyst and Other (Manager/Owner)) and based on the tenure of the respondent (Low (which is less than five years) and High (which is greater than five years)).

**Table IV: Risk Assessment in Capital Budgeting**

If your firm calculates the cost of capital, which method(s) does it use	Total (%)	Sector			Position		Tenure	
		CN (%)	CS (%)	FD (%)	Analyst (%)	Other (%)	Low (%)	High (%)
Shareholder's Required Return	23.0	35.7	12.5	25.0	23.0	23.1	16.7	23.4
Dividend Growth Model	3.0	0.0	5.0	3.1	1.6	5.1	0.0	3.2
WACC	52.0	53.6	57.5	43.8	50.8	53.8	66.7	51.1
Risk-Free Rate	2.0	0.0	2.5	3.1	3.3	0.0	0.0	2.1
Cost of Debt	20.0	10.7	22.5	25.0	21.3	17.9	16.7	20.2
Which of the following technique(s) are used by your firm to evaluate a project's risk?	Total (%)	CN (%)	CS (%)	FD (%)	Analyst (%)	Other (%)	Low (%)	High (%)
Scenario Analysis	11.0	21.4	7.5	6.3	8.2	15.4	0.0	11.7
Sensitivity Analysis	20.0	17.9	25.0	15.6	16.4	25.6	33.3	19.1
Monte Carlo Simulation	2.0	0.0	2.5	3.1	3.3	0.0	0.0	2.1
Raising the Discount Rate	11.0	10.7	7.5	15.6	11.5	10.3	0.0	11.7
Other	56.0	50.0	57.5	59.4	60.7	48.7	66.7	55.3

Note: This table shows a summary of responses on risk assessment in capital budgeting in Lebanon. CN refers to Construction, CS refers to consultancy and FD refers to Food.

**Table V: Political Risks in Lebanon**

Do you take into account political risk when appraising capital investments?	Total (%)	Sector			Position		Tenure	
		CN (%)	CS (%)	FD (%)	Analyst (%)	Other (%)	Low (%)	High (%)
Never	2.0	3.6	0.0	3.1	1.6	2.6	0.0	2.1
Rarely	11.0	17.9	2.5	15.6	9.8	12.8	16.7	10.6
Sometimes	66.0	57.1	72.5	65.6	65.6	66.7	66.7	66.0
Often	19.0	21.4	22.5	12.5	19.7	17.9	16.7	19.1
Always	2.0	0.0	2.5	3.1	3.3	0.0	0.0	2.1
How often does political risk influence your decision when appraising investments?	Total (%)	CN (%)	CS (%)	FD (%)	Analyst (%)	Other (%)	Low (%)	High (%)
Never	2.0	3.6	0.0	3.1	1.6	2.6	0.0	2.1
Rarely	21.0	28.6	15.0	21.9	19.7	23.1	33.3	20.2
Sometimes	72.0	64.3	80.0	68.8	72.1	71.8	66.7	72.3
Often	5.0	3.6	5.0	6.3	6.6	2.6	0.0	5.3
Always	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
How do you usually take political risk into account?	Total (%)	CN (%)	CS (%)	FD (%)	Analyst (%)	Other (%)	Low (%)	High (%)
I do not take it into account	16.0	7.1	20.0	18.8	18.0	12.8	33.3	14.9
By conducting sensitivity analysis	21.0	21.4	25.0	15.6	16.4	28.2	33.3	20.2
By conducting scenario analysis	12.0	17.9	10.0	9.4	11.5	12.8	0.0	12.8
By adjusting the discount rate	11.0	10.7	7.5	15.6	11.5	10.3	0.0	11.7
Other (please state)	40.0	42.9	37.5	40.6	42.6	35.9	33.3	40.4

Note: This table shows a summary of the percentage of total (Total) responses on whether companies in Lebanon take into account political risk. The analysis is performed for three sectors (where CN refers to Construction, CS refers to consultancy and FD refers to Food), two positions of the respondents (Analyst and Other (Manager/Owner)) and based on the tenure of the respondent (Low (which is less than five years) and High (which is greater than five years)).

**Table VI: The Use of Project Appraisal Techniques When Political Risk is High**

Which methods do you use when political risk is perceived to be high?		Total (%)	Sector			Position		Tenure	
			CN (%)	CS (%)	FD (%)	Analyst (%)	Other (%)	Low (%)	High (%)
Payback Period	Never	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Rarely	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Sometimes	5.0	0.0	10.0	3.1	3.3	7.7	16.7	4.3
	Often	25.0	28.6	22.5	25.0	26.2	23.1	33.3	24.5
	Always	70.0	71.4	67.5	71.9	70.5	69.2	50.0	71.3
Discounted Payback Period	Never	7.0	10.7	5.0	6.3	6.6	7.7	0.0	7.4
	Rarely	36.0	39.3	37.5	31.3	39.3	30.8	33.3	36.2
	Sometimes	57.0	50.0	57.5	62.5	54.1	61.5	66.7	56.4
	Often	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Always	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Present Value (NPV)	Never	1.0	0.0	2.5	0.0	1.6	0.0	0.0	1.1
	Rarely	23.0	17.9	27.5	21.9	24.6	20.5	16.7	23.4
	Sometimes	47.0	57.1	35.0	53.1	47.5	46.2	50.0	46.8
	Often	28.0	25.0	32.5	25.0	24.6	33.3	33.0	27.7
	Always	1.0	0.0	2.5	0.0	1.6	0.0	0.0	1.1
Internal Rate of Return (IRR)	Never	1.0	3.6	0.0	0.0	1.6	0.0	0.0	1.1
	Rarely	27.0	42.9	12.5	31.3	23.0	33.3	33.3	26.6
	Sometimes	60.0	46.4	72.5	56.3	60.7	59.0	66.7	59.6
	Often	10.0	7.1	12.5	9.4	11.5	7.7	0.0	10.6
	Always	2.0	0.0	2.5	3.1	3.3	0.0	0.0	1.1
Modified Internal Rate of Return (MIRR)	Never	22.0	25.0	20.0	21.9	23.0	20.5	0.0	23.4
	Rarely	63.0	67.9	60.0	62.5	65.6	59.0	83.3	61.7
	Sometimes	15.0	7.1	20.0	15.6	11.5	20.5	16.7	14.9
	Often	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Always	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Profitability Index (PI)	Never	1.0	3.6	0.0	0.0	1.6	0.0	0.0	1.1
	Rarely	18.0	14.3	22.5	15.6	16.4	20.5	0.0	19.1
	Sometimes	47.0	35.7	42.5	62.5	45.9	48.7	50.0	46.8
	Often	33.0	42.9	35.0	21.9	34.4	30.8	50.0	31.9
	Always	1.0	3.6	0.0	0.0	1.6	0.0	0.0	1.1
Other	Never	45.0	53.6	42.5	40.6	41.0	51.3	66.7	43.6
	Rarely	9.0	10.7	7.5	9.4	8.2	10.3	0.0	9.6
	Sometimes	25.0	17.9	20.0	37.5	23.0	28.2	33.3	24.5
	Often	21.0	17.9	30.0	12.5	27.9	10.3	0.0	22.3
	Always	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: This table provides a summary of responses on the choice of appraisal methods when political risk is high. The analysis is performed for three sectors (where CN refers to Construction, CS refers to consultancy and FD refers to Food), two positions of the respondents (Analyst and Other (Manager/Owner)) and based on the tenure of the respondent (Low (which is less than five years) and High (which is greater than five years)).

**Table VII: The Choice of the Appraisal Methods Depending on the Educational Background in Conditions of High Political Risk**

The Choice of Appraisal Methods Depending on the Educational Background in Conditions of High Political Risk		N	Mean	Std. Deviation	Mean Diff.	p-value
Payback Period	HE	44	4.59	0.622	-0.106	0.37
	LHE	56	4.70	0.537	-0.106	
Discounted Payback Period	HE	44	2.48	0.628	-0.041	0.75
	LHE	56	2.52	0.632	-0.041	
Net Present Value (NPV)	HE	44	3.14	0.734	0.154	0.32
	LHE	56	2.98	0.798	0.154	
Internal Rate of Return (IRR)	HE	44	2.89	0.722	0.065	0.64
	LHE	56	2.82	0.664	0.065	
Modified Internal Rate of Return (MIRR)	HE	44	1.93	0.625	0.003	0.98
	LHE	56	1.93	0.599	0.003	
Profitability Index (PI)	HE	44	3.32	0.674	0.300	0.04
	LHE	56	3.02	0.798	0.300	
Other	HE	44	2.23	1.273	0.013	0.96
	LHE	56	2.21	1.202	0.013	

Note: This table provides a summary of responses on the choice of appraisal methods depending on the educational background in conditions of High Political Risk (where HE refers to Highly Educated (PhD, Masters or Professional Qualification) and LHE refers to Less Highly Educated (Bachelor or High School)). It shows the results of the T-test that demonstrates a comparison between HE and LHE and their choice of appraisal methods when political risk is high.

**Table VIII: Required Rate of Return on Investment Projects for Lebanese Companies**

		Total (%)	Sector			Position		Tenure	
			CN (%)	CS (%)	FD (%)	Analyst (%)	Other (%)	Low (%)	High (%)
Political risk is low	Less than 5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Between 5 and 9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Between 10 and 14	5.0	7.1	2.5	6.3	4.9	5.1	16.7	4.3
	Between 15 and 19	31.0	35.7	32.5	25.0	32.8	28.2	16.7	31.9
	Between 20 and 24	40.0	39.3	32.5	50.0	41.0	38.5	50.0	39.4
	Between 25 and 29	21.0	17.9	27.5	15.6	19.7	23.1	16.7	21.3
	Between 30 and 34	3.0	0.0	5.0	3.1	1.6	5.1	0.0	3.2
	Between 35 and 39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	More than 40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Political risk is high	Less than 5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Between 5 and 9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Between 10 and 14	11.0	14.3	10.0	9.4	9.8	12.8	16.7	11.0
	Between 15 and 19	55.0	60.7	62.5	40.6	59.0	48.7	33.3	55.0
	Between 20 and 24	33.0	25.0	25.0	50.0	29.5	38.5	50.0	33.0
	Between 25 and 29	1.0	0.0	2.5	0.0	1.6	0.0	0.0	1.0
	Between 30 and 34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Between 35 and 39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	More than 40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: This table provides a summary of responses in relation to the required rate of return when political risk varies. The analysis is performed for three sectors (where CN refers to Construction, CS refers to consultancy and FD refers to Food), two positions of the respondents (Analyst and Other (Manager/Owner)) and based on the tenure of the respondent (Low (which is less than five years) and High (which is greater than five years)).