CHAPTER 4: RESEARCH RESULTS

4.1 The Questionnaire

The questionnaire used for this study comprised of two sections: Section I posed general questions about the company. Section II focused upon R&D practices of the companies. In addition, Section II also attempt to find out the Finance Directors' views regarding to their decisions on allocating the expenditure for R&D activities - how and why they come to such decisions. It is in this section where the open-ended questions (which are used in coherence with the Qualitative Research Methodology) were posed to the respondents.

4.2 The Response Rate

In order to complete this study, the questionnaires were sent out to 60 Finance Directors of KLSE listed companies. Out of 60 questionnaires sent to the Finance Directors, only 23 completed and returned the questionnaires giving a response rate of 38.3%. Low response rate can be considered as normal. SyCip (1998) wrote that mailed surveys to firms in Malaysia usually achieve a response rate of between 15-20 per cent. (SyCip, 1998, p.12). The questionnaires required the Finance Directors to state their opinions as to whether they believe the allocation of R&D expenditure would affect the respective companies' current earnings. They were also required to provide reasons why they uphold such perceptions.

Responses to the questionnaires varied. 16 companies did not return the questionnaires at all. 3 out of 60 companies claimed that they had no time to respond to the questionnaires, whilst 1 company refused to complete the questionnaire because of confidentiality reasons. 1 company was under liquidation; thus the questionnaire was not applicable to them. The Finance Directors of 10 companies failed to be reached due to "red tape bureaucracy problems." On the other hand, 4 companies promised to complete the questionnaires. However, completed questionnaires were still not received from them at the time the thesis was written. On the other hand, 2 companies claimed that they have completed and returned the questionnaires but no completed questionnaires were received from them to support their claim. The various responses as described above are categorised under Negative Reponses in Table 1. Table 1 below shows the three categories of responses obtained from the companies under study.

	Number	%
Positive responses	23	38.3%
No response	16	26.7%
Negative responses	21	35.0%
TOTAL	60	100.0%

Table 1: Responses obtained from companies under study

Out of 23 completed questionnaires however, only 19 could be used for the purpose of the study. The 4 other questionnaires are excluded from the analysis as they answered only the first page of the questionnaire. The reasons for such responses are provided by the respondents and these are summarised in Table 2 on page 17:

		Number	%
Useful completed questionnaires		19	20.9%
Answered only first page - i.e. the general questions about the company. Reasons for answering only the first page:	Number	4	17.4%
a. Company is under restructuring. Thus at The time being, all R&D activities are Stopped.	1		
b. This is a Multi National Company. Decisions pertaining to R&D activities are Determined by Head Office located in a Foreign country.	1		
c. R&D activities are not a usual and regular Feature of the company.	1		
d. No reason given.	1		
TOTAL OF COMPLETED QUESTIONNAIRES		23	38.3%

Table 2: Analysis of returned questionnaires

4.3 The Research Findings

Question 1 of the questionnaire was about the main sectors in which the companies operate. Questions 2 and 3 posed enquiries regarding the size of ordinary shares and number of employees of the company as of 30 September 2000 respectively. The findings are shown in Table 3 and 4 on page 19:

Size of ordinary shares as of 30 September 2000	Number	%
Less than RM20million	4	21.1%
More or equal to RM20million but not exceeding RM40million	1	5.3%
More or equal to RM40million but not exceeding RM60million	1	5.3%
More or equal to RM60million but not exceeding RM80million	2	10.5%
More or equal to RM80million but not exceeding RM100million	4	21.1%
More or equal to RM100million	7	36.7%
TOTAL	19	100%

Table 3: Size of ordinary shares of the companies as of 30 September 2000

Number of employees as of 30 September 2000	Number	%
Less than 100	3	15.8%
101 - 300	3	15.8%
301 - 600	5	26.3%
601 - 900	2	10.5%
901 - 1000	1	5.3%
More than 1000	5	26.3%
TOTAL	19	100.0%

Table 4: Number of employees of the companies as of 30 September 2000

Question 4 of the questionnaire asked whether the R&D activities that the Finance Directors undertake are something that are usual and regular to the company. 76.2% of the respondents answered that R&D activities are usual and regular whereas 23.8% stated otherwise. This indicates that most companies are involved in regular R&D activities. Table 5 on page 19 summarises the findings for Question 4.

	Yes	No	Total
Is undertaking R&D activities a usual and regular feature of your company?	76.2% 14	23.8% 5	100% 19

Table 5: Regularity of R&D activities of the companies under study

The fifth question asked whether R&D activities are undertaken on a consistent basis or carried out only when the need for them arise. From the study, 63.2% stated that the R&D activities are carried out constantly whilst 26.3% answered that R&D activities are undertaken only when the need for them arise. (The instances where R&D activities are carried out when needed are not analysed in this study). 10.5% of the respondents did not answer this question. The result seems to indicate that the majority of the companies undertake R&D activities on an ongoing basis.

	Ongoing	Depending On the need	Not answered	Total
R&D activities of your company are (ongoing or depending on the need)	63.2% 12	26.3% 5	10.5% 2	100% 19

Table 6: How R&D activities are carried out in companies

Question 6 of the questionnaire posed inquiry with regards to the nature of R&D activities undertaken using the classification by MASB4 as defined on page3-4. Question 6 therefore tried to get an overall picture on the most common type of R&D activities carried out by Malaysian manufacturing companies. However, many of the companies in the study seemed to ignore this question by not answering it. Table 9 below shows the nature of R&D activities undertaken by the companies.

Nature of R&D activities undertaken as defined by MASB4	Number	%
Research	1	5.3%
Development	4	21.1%
Both Research and Development	4	21.1%
Not Answered	10	52.5%
TOTAL	19	100.0%

Table 7: Classification of R&D activities of companies as defined by MASB4

Question 7 attempt to determine the percentage spent on R&D activities against the revenue. The expenditure of R&D activities was taken as a function of revenue as this would further highlight the view upheld by the Finance Directors, i.e. to what extend this view is influenced by the level of revenue generated. Decisions undertaken by the respondents with regards to R&D expenditure could be noted and compared on how they would react to the changes in revenue. From the study, 89.4% of the respondents reported that the percentage that their companies spent on R&D activities against revenue is below 5% whereas 5.3% of the respondents stated that the percentage is between 6% to 10% and 5.3% reported that the percentage is between 11% to 20%. This shows that most of the companies under the study spent below 5% of the revenue obtained to finance their R&D activities.

Percentage spent on R&D activities against revenue.	Below 5%	6%-10%	11%- 20%	Total
%	89.4%	5.3%	5.3%	100%
Number	17	1	1	19

Table 8: The percentage spent by companies on R&D activities against revenue

The next question; Question 8, attempt to find out decisions that would be taken by the Finance Directors with regards to the expenditure for R&D activities in times when the revenue is declining. As an addition, the respondents were required to state the reasons for their decisions in Question 8 in the space provided in the questionnaire. 15.7% of the respondents stated that their companies would increase the percentage of R&D expenditure allocation against revenue. Most of the respondents who provided this answer expressed that it was their company's policy to allocate a fixed amount of R&D expenditure regardless of their company's financial position. Hence, in the event of declining revenue, the percentage allocated on R&D activities against revenue would correspondingly increase. 31.6% of the respondents, on the other hand, reported that in the event of declining revenue, the percentage of R&D expenditure against revenue would be reduced. However, the majority of the respondents, i.e. 52.7% stated that their company would maintain the percentage even in the event of declining revenue.

	Reduced	Increased	Maintained	Total
In the event of declining revenue, the percentage spent on R&D against revenue would correspondingly be (reduced, increased or maintained)	31.6% 6	15.7% 3	52.7% 10	100% 19

Table 9: Decisions that would be taken by the Finance Directors pertaining to percentage spent on R&D activities against revenue in the event of declining revenue

Question 9 attempt to find out the Finance Directors' view in respect of the decisions they undertake for Question 8. Hence this question was written as an open-ended question. The answers given by the respondents would be discussed in Section 4.4.3: The Finance Directors' Perceptions.

Question 10 examined the opinion of the respondents as to whether they are concerned about the impact of the allocation of R&D expenditure on current earnings. The study shows that 68.4% of the companies are concerned about the impact of the allocation of R&D expenditure on current earnings whilst 31.6% are not.

	Yes	No	Total
In allocating the funds for R&D activities would you be concerned about the impact on current earnings?	68.4% 14	31.6% 5	100% 19

Table 10: The perceptions of the Finance Directors regarding to the impact of the allocation of R&D activities to current earnings.

In order to gain understanding of why the directors are concerned/not concerned about the impact of the allocation of R&D expenditure on current earnings, Question 11 was posed to the respondents. This question was written as an open-ended question. The answers provided by the respondents would be discussed in Section 4.4.3: The Finance Directors' Perceptions.

Question 12 attempt to find out whether the R&D activities undertaken by the companies would be increased in times of high earnings. 73.7% of the respondents reported that they would not increase the R&D activities despite achieving high earnings. On the other hand, 26.3% stated that the R&D expenditure would be increased following high earnings.

In times of high earnings, would the R&D activities be increased?	Number	Percentage
- Yes	5	26.3%
- No	14	73.7%
TOTAL	19	100.0%

Table 11: Decisions undertaken by the Finance Directors pertaining to R&D expenditure allocation in times of high earnings

4.4 Analysis

4.4.1. R&D Practice and Decisions made by the Finance Directors pertaining to R&D

From the findings, it appears that R&D activities are carried out regularly by the companies. According to 63.2% of these respondents, the R&D activities are undertaken on a consistent basis and not just when there is the need for it. Another significant finding from this study is that a high majority of the companies - i.e. 89.4% spent below 5% for R&D expenditure. (R&D expenditure taken as a percentage of revenue). A cross-examination of the respective companies Financial Statements shows that the amount spent on R&D against the turnover is very small. The percentage of R&D against turnover for the companies ranges between 1% to 3%.

However, although the amount spent on R&D is rather small compared to the revenue generated by the companies, 68.4% of the companies are concerned about the impact of the R&D expenditure allocation on the current earnings. This perception is further enhanced by the response obtained from the Finance Directors in the subsequent question of the questionnaire. 31.6% of the respondents said that in the event of declining revenue, the percentage spent on R&D against revenue would be reduced. 52.7% said that the percentage would be maintained. Although this percentage is maintained, in absolute monetary terms this amount is reduced following the reduction in revenue. Hence, 84.3% of the Finance Directors would subsequently reduce the allocation for R&D expenditure in the event of falling revenue. This indicates that the respondents' decisions to engage in R&D activities are dependent upon the level of revenue generated. The Finance Directors are being cautious when they experience falling revenue. This can be seen by their reaction of reducing the allocation of R&D expenditure following such event.

Although the Finance Director's decisions to involve in R&D activities seem to be influenced by when the earnings generated by the companies are low, the reverse however, is not true. This was evident in the answers provided by respondents in Question 13 of the questionnaire. 73.7% of the respondents answered that the decisions pertaining to involvement in R&D activities would remain the same even in the event of high earnings. This indicates that although the event of declining revenue influences the Finance Directors' decisions to involve in R&D activities, such decisions are not influenced by the event when the earnings are high.

4.4.2. The Finance Directors' Concern for R&D impact on current earnings and its relationship with the companies' profitability

Question 10 in the questionnaire attempt to examine whether the Finance Directors are concerned with the impact of R&D expenditure allocation on current earnings. It is essential to examine whether the concern for current earnings can be traced to the respective companies' profitability. In order to determine whether the financial performance of the companies can influence the companies' concern for current earnings, Operating Margin is used as a basis of comparison for companies under study. For this purpose, Operating Margin is defined as "Operating Profit Before Tax (adjusted for Share of results of Associates, Investment Income, Interest Income, Exceptional Items, and Interest Expense) divided by Turnover and expressed in percentage terms". The relationship between the Finance Directors' concern for R&D impact on current earnings and the respective companies' profitability is demonstrated in Table 12 on page 25:

COMPANY	*AVERAGE OPERATING MARGIN - AOM (%)	CONCERN WITH R&D IMPACT ON CURRENT EARNINGS	
Company 01	10.16%		NO
Company 02	8.74%		NO
Company 03	21.20%		NO
Company 04	30.16%		NO
Company 05	25.07%		NO
Company 06	15.67%	YES	Average:
Company 07	8.92%	YES	19.07%
Company 08	19.47%	YES	
Company 09	3.67%	YES	
Company 10	2.55%	YES	
Company 11	5.46%	YES	
Company 12	14.10%	YES	
Company 13	12.81%	YES	
Company 14	21.05%	YES	
Company 15	30.04%	YES	
Company 16	9.83%	YES	
Company 17	16.80%	YES	
Company 18	DATA NOT AVAILABLE	YES	
Company 19	DATA NOT AVAILABLE	YES	
		Average:	
		11.46%	

*AOM (%) - this is taken by averaging the Operating Margin over a period of 5 years or until when data is available.

- Names of companies are not revealed due to confidentiality reasons.
- Data is not available, as the companies could not be identified due to erased company code number from the returned questionnaires.

Table 12: The relationship between the Finance Directors' concern of R&D impact on current earnings and the companies' profitability

From the table above, on average, for those who are concerned with the R&D impact on current earnings the Average Operating Margin is at 11.46%. However, the average figure for companies whose Finance Directors are not concerned with the R&D impact on current earnings is higher at 19.07%.

From this observation, it appears that on average, companies with higher percentage of Profit Before Tax against Revenue generated are not concerned with the impact of R&D expenditure on current earnings. On the other hand, companies with lower percentage of Profit Before Tax against revenue are concerned with the impact of R&D expenditure on current earnings. The following section discusses the Finance Directors' perceptions regarding R&D.

4.4.3. The Finance Directors' Perceptions

The feedback from questionnaires completed by the Finance Directors assists in understanding their perceptions regarding R&D. A typical explanation provided by the respondents was the need for their companies to be cost-conscious during times of low earnings. In such event, efforts would be directed at increasing revenue and decreasing costs. R&D activities would not be undertaken as they would not contribute towards the company's bottom line. Another typical reason is the economic outlook whereby the companies' decisions to invest in R&D activities would be dependent on the local economic environment. In the event of economic recession, the companies would take a decision to reduce their R&D activities.

Interestingly, one reason provided by the Finance Manager is because of other products that the company produced. Products that have successfully been developed would be marketed. At that point of time, the R&D activities undertaken by company to come up with another products would be delayed until the former developed products are well marketed. The marketing expenses for the former products would be expensed off during the year. Having carried out R&D activities that do not meet the development criteria would require the expenditure to be expensed off. This would further suppress current earnings. Hence the R&D activities of the company are delayed.

Another Financial Manager of a company provided the reason pertaining to the treatment of R&D expenditure. The R&D expenditure would be expensed off in the year it incurred. Therefore, the costs that are written down could not be recoverable and they would be sunk cost. Since the costs are not recoverable, the Financial Manager is thus concerned with the impact of R&D expenditure upon current earnings.

One Financial Controller stated that the current earnings provide the company with the adequate resources for the company to carry out its operation. Thus, the Financial Controller is concerned with the impact of R&D expenditure allocation on current earnings as according to him, the current earnings is important in sustaining the company's operation. If the company could not sustain its operation, he reasoned out, R&D activities could therefore not be undertaken as the company would then faced with financial constraints. Thus he placed higher importance on current earnings than R&D activities.

As mentioned, on average, companies that are not concerned with the impact of R&D on current earnings the Average Operating Margin is 19.07%. Perhaps the large Profits earned out of Revenue put the company in a "comfortable" financial to continuously allocate considerable amount for R&D expenditure without having to worry about the impact of this to its current earnings. This is reflected by the answer provided by a respondent who holds the position of Financial Controller in Company 03. He stated, *"Current level of R&D activities are still small compared to current earnings."*

From this perception, it is clear that the company is not concerned with the impact of R&D expenditure allocation on current earnings. This is because; large earnings provide the company with sufficient financial resources to carry out R&D

activities. This company, Company 03, is a healthy profit making company whose shares are not only traded in KLSE but also in London Stock Exchange.

One typical explanation provided by the respondents from companies that are not concerned with the impact of R&D on current earnings is as follows:

"R&D is always allocated regardless of the year end achievable bottom line. Expenditure on R&D is incurred for strategic reason instead of merely an operating policy of the company."

From this statement it is clear that the main concern of Finance Directors of these companies is to undertake R&D activities which are perceived as an important strategic planning to adhere to. Thus the negative impact that the R&D allocation expenditure may cause to current earnings does not concern the Finance Directors.

4.4.4. A closer examination of companies that are considered as exceptions and their respective Finance Directors' perceptions:

It would also be beneficial to examine the Finance Directors' perceptions and their respective companies' profile. This would give deeper understanding for their perceptions and why they uphold these perceptions. The companies chosen for this purpose are Companies 01, 02, 14 and 15. These companies are chosen because they are considered as exceptions to the general observation that "Lower profit making companies seem to be more concerned with current earnings than higher profit making ones."

Company 01, for example has a modest Average Operating Margin of 10.16%. Company 02, has an even lower Average Operating Margin of 8.74%. Yet, the Finance Managers of both companies are not concerned with the impact of R&D to their companies' current earnings. Thus, in order to gain deeper understanding for these exceptional cases, a general overview of the industry and a closer examination of the companies are needed.

Company 01 is involved in the construction of power generation plants and power distribution system. The industry in which this company operates requires high technological operation and hence, R&D plays an important role to ensure the long-term survival of the company. The Finance Director for Company 01 stated:

"The company involves in a highly technological changing environment in the utilities industry. R&D is one very important feature to ensure company's long term viability and survivability in the market is sustained. Fixed amount had been allocated regardless of the financial portion at large."

According to the Economic Report 1999/2000, the industry related to the output of chemicals, chemical and plastic products recorded a growth of 10.7% during the first eight months of 1999. The growth was supported by increased production in industrial gases following stronger demand from Japan and Korea. In addition to that, an increase in the output of fertilisers and pesticides was recorded following greater usage in oil palm cultivation.

Company 02 is engaged in the manufacture and marketing of agrochemicals, fertilisers, pharmaceuticals, healthcare products and industrial chemicals. This company also has 18% stake in a foreign company that is engaged in pharmaceutical research and development of drugs. The interest Company 02 has in this foreign company gives it the exclusive right to co-develop, manufacture and market the products in Asia. Due to the good growth and good prospect in industrial chemical and pharmaceutical industry, Company 02 appears not to be concerned with current earnings even though its Average Operating Margin is rather modest at 8.74%. This is consistent with the reason written by the Finance Director of Company 02:

"Our R&D is directed towards our pharmaceutical business which have good growth intention. Hence decline in revenue in 1 or 2 years does not affect our decision-making. In the longer term we need good products to sustain our competitive edge."

Company 14 and 15 have high Average Operating Margin of 21.05% and 30.04% respectively. However, the Finance Directors of both companies are still concerned with the impact of R&D activities to current earnings. Both are involved in a highly competitive business environment producing homogeneous products. The Finance Directors for these companies expressed that they focus much attention on current earnings as it provides the companies with adequate resources to maintain their operations. In the midst of competitive business environment, the companies appear to be concerned in current earnings. They foresee that current earnings are more important than R&D in sustaining their companies' competitiveness.