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Institiúid Teicneolaíochta Leitir Ceanainn  
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**An exploration into how research and  
development is treated in Ireland, focusing on  
listed companies**

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Degree of Masters of Arts in Accounting*

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## Abstract

This dissertation examines the accounting treatment of research and development by Irish listed companies. Research and development has become an increasing element within an organisations development both on a competitive and an economic level. Due to the importance that now surrounds research and development, the accounting treatment adopted by companies has become a very important topic. This dissertation is designed at examining the current accounting treatment followed by Irish listed companies.

The research for this dissertation is split into primary and secondary research. The secondary research is broken down into analysing the literature and the financial statements of Irish listed companies. The literature offers a comprehensive overview of the accounting treatment of research and development which is relevant to Ireland, the UK and the US. The literature review also outlines the importance of the valuation of research and development and the tax credit that is available for companies that undertake research and development. The financial statements were analysed to determine how these companies accounted for research and development and how much was spent.

The primary research included questionnaires to Irish listed companies and two semi-structured interviews. Both these addressed the issues that the researcher found in conducting the secondary research namely, accounting for research and development, the valuation of research and development, the tax credit for research and development and what Ireland's location is like as a research and development economy.

The primary research revealed that Irish listed companies must abide by the international accounting standards and therefore if development expenditure meets the criteria then it must be capitalized with all research expenditure being expensed to the statement of comprehensive income. The research identified that the most common method for valuation was the cost model and that the tax credit is a significant

influence on research and development. Finally the primary research revealed that Ireland is regarded as a good place to conduct research and development.

## List of Abbreviations

BERD	Business Expenditure on Research and Development
CFO	Chief Financial Officer
CRO	Company Registration Office
CSO	Central Statistics Office
EEA	European Economic Area
EMH	Efficient Market Hypothesis
EU	European Union
FASB	Financial Accounting Standards Board
FRS	Financial Reporting Standards
FTSE	Financial Times Stock Exchange
GAAP	Generally Accepted Accounting Principles
IAS	International Accounting Standards
IASB	International Accounting Standards Board
IFRS	International Financial Reporting Standards
ISEQ	Irish Stock Exchange
MNC	Multi National Company
Pg	Page
PLC	Public Limited Company
PPE	Property, Plant and Equipment
R&D	Research and Development
s	Section
SFAS	Statement of Financial Accounting Standards
SME	Small to Medium Enterprises
SSAP	Statement of Standard Accounting Practice
UK	United Kingdom
US	United States

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## Chapter 1 – Introduction

### 1.1 Introduction

The purpose of this chapter is to provide an overview of the research project. This chapter will include the background to the project, reasons for the research topic being investigated, the research question and objectives and an overview of the structure of the research project.

### 1.2 Background

Ireland, the UK and the US all have their own accounting standards. The International Accounting Standards (IAS) and the Financial Reporting Standards (FRS) are used in Ireland and the UK with the US Generally Accepted Accounting Principles (GAAP) applicable to the US, but so far no one set of accounting standards is accepted globally. There have been talks between the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) about a convergence between these accounting standards in order to make financial reports more comparable with those of other companies. However, this has not been achieved so far because of disagreements over certain standards. One of the standards that there is disparity in is intangible assets.

There has been a lot of controversy regarding intangible assets, not just their accounting treatment but also issues regarding their definitions and classification. While there are many forms of intangible assets, this paper is going to focus mainly on research and development (R&D), which has become more important in recent years. For centuries R&D has been the back bone for many items; however some of these items are too simple nowadays to be regarded as R&D like the creation of the sandwich which was named after the Earl of Sandwich. It is argued that this great invention in the 1700's would not be classed as R&D today based on the strict definitions of R&D now in place (O'Connor and Forde, 2004).

Research (Aghion and Howitt, 1992; Ding, 2007) has shown that there is a linkage between R&D and economic growth, future income and productivity improvements. This simply means that a company's level of output will increase when the level of R&D input increases. Economic growth is an important aspect for companies in general and for them to be seen as having competitive advantage. Therefore, if there is a strong correlation between economic growth and R&D, then R&D must also be significant to companies (Griffith, 2000).

### 1.3 Research Topic and Question

The research topic being investigated is an exploration into how R&D is treated in Ireland, focusing on listed companies. This research topic gives rise to the following research question:

“How Research and Development is accounted for Ireland by companies listed on the Irish Stock Exchange (ISEX)?”

### 1.4 Research Objectives

- To compare and contrast how R&D is accounted for in Ireland, the UK and the US and the impact of future convergence by global standard setters.

This will help distinguish the accounting treatment between the three countries and to see where the problem arises that interferes with the harmonization of accounting standards dealing with this area.

- To examine how the valuation of R&D is important.

There are many valuation methods available; however not all are compatible with R&D. This objective will look at which is the most relevant method used for R&D as prescribed by the standards as this is thought to be linked to share price movements.

- To establish what influence the R&D tax credit has on companies.

The R&D tax credit has become popular in recent years; this will look to see if its availability has in fact any impact on companies undertaking R&D.

- To determine what Ireland is like as a R&D economy.

Around the world, most countries are becoming more R&D based and focused. This objective is aimed at determining whether Ireland is regarded as being suitable place for carrying out R&D and what the factors are in determining this?

### **1.5 Reasons for the research topic**

The main merits for conducting research on this subject matter is that R&D is a very topical issue, especially in the current economic climate, as a creative edge is needed for both new and improving product/services to get the economy out of the poor situation it finds itself in. Companies are trying to cut costs in order to survive but at the same time they must maintain strong innovation to remain competitive. Therefore there may be a trade off required as R&D expenses are normally one of the largest expenses of a company. It is clear that R&D is an area of importance therefore the researcher believes that this quantifies further investigation.

The main people that this research will be of benefit to include the following:

- Academics – there has been a lot of studies conducted on both intangible assets and R&D, however these are mostly related to countries outside Ireland. This research project will consider Irish listed companies which will give academics an Irish perspective of R&D.
- Companies – many companies spend large amounts of resources in the hope of creating new products, and/or improving or introducing applications for existing products in order to stay competitive and ultimately increase profits. However some companies are unaware that they are conducting R&D and do not reap the benefits that can be obtained such as tax incentives. Therefore this research will be useful to companies so that they are able to get a more in depth insight into R&D which could save them money.

- Students – as R&D is dealt with in accounting standards, it will be part of the curriculum for students. This dissertation will give students a greater understanding of how the accounting treatment for R&D is applied in practice by listed companies.

### 1.6 Limitations of Research

There are limitations as to the effectiveness of the research as implemented by the author, mainly cost and access to information, with the most prevalent limitation being time. The researcher realistically had just less than three months to conduct their primary research which impacted on the number of responses especially in relation to questionnaires that were returned. However, the questionnaires were sent with a stamped addressed envelope for the ease of return with no expense being incurred by the respondents of the questionnaires.

As stated earlier there is also a problem that the respondents may interpret the questions incorrectly which would result in the findings not being accurate. Although the questionnaires were addressed to the Chief Financial Officer (CFO) of listed companies it cannot be guaranteed that the questionnaires were completed by them which could impact on the overall research if incorrect information was given.

The limitations regarding the interviews that were conducted is interviewer bias, however with a theme sheet to follow this bias should be reduced considerably.

The gathering of secondary research literature was limited to what could be accessed from databases, journals, books and internet sites as other facilities were not available in rural Ireland, without major expense on the researcher, as most of literature was conducted outside Ireland.

## **1.7 Organisation of Dissertation**

### Chapter 1 – Introduction

The purpose of this chapter is to provide an overview of the background to the research project, the research question and objectives used to answer the research questions and achieve the research aims.

### Chapter 2 – Literature Review

This chapter outlines the relevant literature in the research area and is critically reviewed by the author. It looks at literature in the areas of the accounting treatment of R&D, valuation and the R&D tax credit.

### Chapter 3 – Research Methodology

This chapter outlines the methodology developed and used by the author to answer the research question and achieve the research aims.

### Chapter 4 – Data Analysis and Findings

This chapter presents the findings that were achieved using the methodology that was developed in chapter 3. These findings are analysed, summarised and then discussed.

### Chapter 5 – Conclusions and Recommendations

This chapter summarises the findings from the research and their relevance to the research topic. It will include conclusions that will hopefully provide answers to the research question and achieve the research objectives.

## **1.8 Conclusion**

This chapter presents an overview of the research dissertation. It includes the background of the research subject which has shaped the research question and objectives. The chapter also includes an overview of the reasons for the research topic which includes merit and justification. Finally this chapter contains the limitations of this research and an overview of how the dissertation will be structured.



## Chapter 2 – Literature Review

### 2.1 Introduction

This chapter will provide the reader with a summary of the literature that is relevant to the authors' research topic. The researcher will include literature that outlines the accounting treatment of R&D, the valuation of R&D and the R&D tax credit.

### 2.2 Key Definitions

Below are definitions that are relevant to this research. This helps the reader to understand some of the phrases used within this dissertation.

#### 2.2.1 Intangible Assets

Intangible assets are defined by the IASB as “an identifiable non monetary asset without physical substance” (IAS 38). Therefore the problem that some people have is that if it is not physical, how it can be classed as an asset?

Lev and Zarowin (1999); Stolowy and Jeny-Cazavan (2001) claim that intangible assets should be treated like tangible assets. Likewise, Hendriksen and van Breda (1992) argue that intangibles are no less assets just because they lack substance. Their recognition should follow, therefore, the same rules as all assets. Intangible assets can be generated internally, as part of business combinations, by government grants or by external purchases.

#### 2.2.2 R&D

According to the Central Statistics Office (CSO), R&D is creative work undertaken on a systematic basis in order to create new or improved products, processes services or other applications. R&D is distinguishable from other activities by the presence of

an appreciable element of novelty and by the resolution of problems and uncertainties using scientific or technological means (CSO, 2008).

However, most accounting standards like to distinguish between the research and development phases separately in order to prescribe the correct accounting treatment.

#### **2.2.2.1 Research**

Research has been defined as an original or planned investigation undertaken with the hope of gaining new scientific or technical knowledge and understanding (Connelly, 2009).

Examples of research include:

- Activities aimed at obtaining new knowledge;
- The search for alternatives for materials, devices, products, processes, systems and services;
- The formulation, design, evaluation and final selection of possible alternatives for new or improved materials, devices, products, processes, systems and services (Elliott & Elliott, 2009).

#### **2.2.2.2 Development**

Statement of Standard Accounting Practice (SSAP) 13 has defined development as “the use of scientific or technical knowledge in order to produce new and substantially improved materials, devices, products or services, to install new processes or systems prior to the commencement of commercial productions or commercial application, or to improve substantially those already produced or installed” (Black, 2003 (Pg: 73)).

The following are examples of development:

- Design, construction and testing of pre-production prototypes and models and development batches;
- Design of products, services, processes or systems involving new technology or substantially improving those already produced or installed;

- Construction and operations of pilot plants that is not feasible for commercial production (Elliott & Elliott, 2009).

### **2.2.3 Amortization**

Amortization is the equivalent of depreciation but for intangible assets. This means that the intangible assets must be reduced in order to reflect age or obsolescence as most assets lose value over time. The rate at which this is applied is at the discretion of individual companies (Elliott & Elliott, 2004).

However, this only applies to intangible assets with finite lives (a limited time period). For intangible assets with infinite lives (no foreseeable time limit to the period over which the asset is expected to generate cash) these should not be amortized.

### **2.2.4 Impairment**

Impairment occurs when an assets carrying amount (cost less any accumulated depreciation) exceeds its recoverable amount (the higher of the amount that the asset can be sold for or its value in use). When this happens the excess is expensed to the statement of comprehensive income (formerly the income statement) and thus reduces the asset to the recoverable amount (Wood, 2005).

### **2.2.5 Capitalization**

Capitalization is an accounting method used to delay the recognition of expenses by recording the expense as an asset. In general, capitalizing expenses is beneficial as companies acquiring new assets can spread out the cost over a period of time via amortization, without an immediate negative affect on profit.

## **2.3 Accounting treatment of R&D**

### **2.3.1 Harmonization of Accounting Standards**

Although accounting standards are important determinants of the quality of financial reporting, they differ across countries. It is believed that such differences reduce the value and the relevance of accounting information but if all companies followed the same set of accounting standards, external financial reports would provide more standardized disclosures and more useful accounting information (Ding et al, 2007). In recent years, there have been talks such as the Norwalk Agreement to harmonize or converge accounting standards across countries, i.e. to adopt a universal set of accounting standards, following corporate collapses such as Enron and WorldCom (FASB, 2002).

The Norwalk Agreement signed in 2002 by the FASB and the IASB was established to set global accounting standards. However, this convergence process has had its problems. It was intended that this agreement would be implemented by 2005, but five years later the convergence process still has not been fully implemented due to disharmony over certain areas of accounting (O'Kelly, 2009). Accounting for R&D is one of the areas of divergence between the two accountancy boards. And, although R&D is becoming central to the competitive advantage of more companies, the FASB and the IASB each prescribe different treatments for R&D (Nixon, 1997).

We will now look at the different accounting standards that are applicable to R&D within Ireland, the UK and the US.

### **2.3.2 Statement of Standard Accounting Practice (SSAP) 13**

SSAP 13 is the accounting standard for R&D under Irish and UK GAAP. This standard allows a certain amount of choice to companies regarding the treatment of costs incurred by projects in relation to R&D.

SSAP 13 was issued in December 1977 and revised in January 1989. The main elements of the standard refer to the following:

- That the cost of the asset (bought or constructed) to provide R&D facilities is capitalized and written off over its useful life.
- All expenditure incurred on research should be written off within the period.
- Any development expenditure should be written off in the period or if it meets the following criteria, it may be capitalized (at the managers' discretion):
  - There is a clearly defined project;
  - The related expenditure is separately identifiable;
  - The outcome of the project has been assessed with reasonable certainty as to technical feasibility and commercial viability;
  - The aggregate development costs are expected to be exceeded by future sales and revenue;
  - There are adequate resources to enable the project to be completed and to provide any consequential increases in the working capital (SSAP 13).

Under SSAP 13 if a company wishes to capitalize development costs, it must first be amortized, then over the products sale period or useful life and an annual review should take place to determine if the development costs still meet the criteria to capitalize. Also an impairment review is required to determine if the value of the development costs needs to be written down to its recoverable amount.

The disclosure requirements under SSAP 13 include:

- The accounting policy that is followed should be clearly stated;
- The total amount of R&D expenditure charged to the statement of comprehensive income;
- A split between research and development components; and
- Any amortization of development expenditure (Black, 2003).

### 2.3.3 IAS 38

IAS 38 is the accounting standard for intangible assets. This research will only be looking at the accounting treatment for R&D within IAS 38. All European Union (EU) companies listed on a stock exchange must abide by the IAS's; however, compliance by non-listed companies in Ireland and the UK is voluntary.

The accounting treatment for R&D differs depending on whether the expenditure relates to research expenditure or development expenditure. Research expenditure must always be charged to the statement of comprehensive income unless externally acquired which results in capitalization. Like research expenditure, development expenditure can also be capitalized on external purchase whereas internally generated development expenditure must be capitalized provided a strict set of criteria is met. These include:

- Completing the intangible asset (with adequate financial, technical and other resources available) so the intangible asset will be available for use or resale;
- That the intangible asset will generate probable future economic benefits; and
- That the company has the ability to measure reliably the expenditure attributable to the intangible asset during its development phase (Connelly, 2009 and Elliott & Elliott, 2009).

Although not directly attributable under IAS 38, the capitalization of assets (bought or constructed) to provide R&D facilities is dealt with under IAS 16 Property, Plant and Equipment (PPE). This standard stated that depreciation of PPE used for development activities may be included in the cost of an intangible asset recognized in accordance with IAS 38 Intangible Assets (IAS 16, paragraph 49).

If a company cannot split expenditure into research or development then the entire expenditure must be written off to the statement of comprehensive income.

Any R&D projects acquired in a business combination are recognised as an asset at cost, even if a component is research (i.e. it is capitalized). However, any future costs relating to the project will be dealt with like any other R&D expenditure, for example

if the future costs relate to research it will not be capitalized but if is solely development (and meets the criteria) then it must be capitalized as stated by International Financial Reporting Standards (IFRS) 3 Business Combinations.

IAS 38 requires the following disclosures for R&D:

- Useful life/amortization rate;
- Gross carrying amount and accumulative amortization;
- Reconciliation of the carrying amount at the beginning of the period and the end of the period showing any additions, disposals, impairments, revaluations, amortization and any foreign exchange differences;
- Basis for determining if the R&D has an indefinite life;
- If any government grants were received in relation to R&D; and
- The total amount charged to the statement of comprehensive income in relation to R&D expenditure in the current accounting period (IASB, 2009).

#### **2.3.4 Statement of Financial Accounting Standards (SFAS) 2**

SFAS 2 “Accounting for R&D Costs” is the accounting standard applied under US GAAP for all US companies. It has been in effect since 1974.

This statement requires that all R&D costs be charged as an expense to the statement of comprehensive income when incurred. These costs include:

- Costs of materials, equipment and facilities that have no alternative future uses;
- Salaries, wages and other related costs of personnel engaged in R&D activities;
- Purchased intangible assets that have no alternative future uses;
- Contract services; and
- A reasonable allocation of indirect costs, except for general and administrative costs (Gornik-Tomaszewski and Millan, 2005).

SFAS 2 has dismissed the capitalization of R&D expenditure due to the uncertainty of future benefits of R&D projects and also because of the lack of a fundamental relationship between expenditure and benefits (SFAS 2). As capitalization of R&D is not permitted under US GAAP, any asset (bought or constructed) to provide R&D facilities cannot be capitalized, unlike SSAP 13 and IAS 38.

Any R&D acquired as part of a Business Combination in the US must be regarded as an expense as soon as it is acquired (Gornik-Tomaszewski and Millan, 2005).

SFAS 2 requires that a company discloses, in its financial statements, the amount of R&D that it charges to expense for each accounting period (SFAS 2).

### **2.4 Capitalization of R&D**

The capitalization of R&D costs is a controversial accounting issue because of the argument that such capitalization is motivated by incentives to manipulate earnings (Markarian et al, 2008). This manipulation of earnings occurs by capitalizing the R&D expenditure instead of expensing this through the statement of comprehensive income, thus increasing overall earnings. This also enhances the asset valuation of the companies.

However, an additional danger of the capitalization of R&D is that future economic benefits are estimated and therefore can be wrong. Such was the case with Rolls Royce Ltd in the early 1970's where substantial R&D expenditure on a new aero engine was capitalized but the estimated future economic benefits failed to materialise (Black, 2003). This resulted in the company writing off the accumulated expenditure that was capitalized thus leaving a major accounting loss for that period. This loss would not have been as extensive in that period if it was not capitalized over the total length of the R&D phase. This resulted in the entire expenditure being written off when the future economic benefits became vague.

As per IAS 38 and SSAP 13, it is only development costs that can be capitalized with the exception of research which is acquired within a business combination. SFAS 2



does not permit the capitalization of either research or development even when externally generated, i.e. through business combinations. Although the accounting standards in the US does not allow for capitalization it is also faced with this controversial accounting issue as it must justify why capitalization is prohibited. It may well be that capitalization could lead to manipulation of financial statements; that future economic benefits are uncertain; or for other reasons which could lead to corporate scandals.

It remains unclear if capitalizing R&D has a positive or negative effect on the market value of companies' shares. Hirschey and Weygandt (1985), Sougiannis (1994) and Smith et al. (2001), have found a strong positive correlation between financial statement information and the market value of equity when R&D is capitalized compared to notional expensing. However, other studies have shown that capitalized R&D is negatively associated with stock prices and returns. This negative coefficient on capitalized R&D implies that investors are concerned with and react negatively to capitalization of R&D (Cazavan-Jeny and Jeanjean, 2006, and Kallunki et al, 2009).

#### **2.4.1 Valuation of R&D**

The valuation of assets is one of the contemporary issues in accounting. The valuation of R&D is extremely important especially if a company capitalizes the development expenditure, as an appropriate valuation must be placed on these assets so that it truly reflect its value to the company. As companies are now becoming more knowledge-based, "intangible assets will comprise an increasing percentage of the value of businesses acquired", (Quilligan, 2006 (Pg: 10)). However, choosing the correct valuation method is problematic as numerous options are available, for example: cost and fair value which also leads to the choice of amortization and/or impairment.

Two of the main challenges with intangible asset valuations are the appropriate valuation methodology and selecting the appropriate economic life for each asset. The correct valuation method is determined according to the type of the asset and the industry; however each method has its own advantages and disadvantages. Briefly the

three valuation methods that are relevant to intangible assets according to Quilligan (2006) are:

1. Market Method – this provides the best evidence of fair value because it relies on evidence from actual markets. However, for companies this method may be inappropriate as finding companies carrying out similar R&D activities may be difficult. Also as mentioned above it is unknown whether capitalization of R&D has any impact on markets; therefore this method may be irrelevant to placing a value on R&D.
2. Income Method – this method is based on future economic benefits from owning the asset, the difficulty here is that the company may not have ownership of the asset. Another difficulty that has been stated throughout this literature review is that future economic benefits cannot be easily determined. As IAS 38 requires that development expenditure must have a future economic benefit before it is capitalized, this method may be suitable for placing a value on R&D.
3. Cost Method – this assesses the cost of the asset but this does not take into account present value therefore unless replacement cost (valuing the assets at what they would cost today) of the asset is used it would not reflect the true value. Out of the three methods, this method may be the easiest option for companies to value R&D. However one must be mindful that cost and value is not the same thing. The value of something to a company is its ability to provide a generation of cash flows (Drever et al, 2007), whereas cost is the consideration paid to acquire goods or assets.

The valuation methods applicable under IAS 38 refer to the following two models:

- Cost Model – after initial recognition the benchmark treatment is that intangible asset should be carried at cost less any amortization or impairment.
- Revaluation Model – intangible assets may be carried at a revalued amount based on fair value less any amortization or impairment. However, this can only happen if fair value can be determined in relation to an active market.

While it is worthy to note that the US GAAP requires intangible assets to be valued only on a fair value basis (SFAS 142 – Intangible Assets). But as the US does not

allow for capitalization of R&D the fair value method or any method is therefore irrelevant.

## **2.5 R&D Tax Credit**

R&D affects peoples' lives in so many ways; looking at the last decade we can see items including iPods and more important lifesaving devices like defibrillators being created. R&D has become one of the most important activities that a business should undertake; therefore an R&D tax credit was introduced. This tax credit was introduced by the Government in many countries for companies that engage in R&D activities and is a significant attraction for locating R&D based companies. Although this credit will not make non research and development companies take on R&D activities it can be a factor in determining where such R&D will occur (Hardy, 2009).

The R&D tax credit is questioned by companies as to whether it adds value to companies or not. Each individual company is different as was seen with the capitalization of R&D expenditure; it has a positive effect on share price of some companies but a negative effect on others. Therefore, the R&D tax credit may be of benefit to certain companies.

### **2.5.1 In Ireland**

Currently, Ireland is trying to focus on being an economy with greater R&D prospects, as it is believed to be a key to success and innovation. As stated by the Minister for Enterprise, Trade and Employment (2007), "research activity develops and engages people with the skills and innovative ideas capable of creating higher value-added products and processes which enhance competitiveness and will help our enterprise sector thrive in an increasingly competitive global market place" (Martin, 2007).

In Ireland, this tax credit is available for qualifying companies that take on incremental qualifying R&D expenditure in an accounting period. This credit is

available for offset against corporation tax payable by a company in the year the expenditure was incurred or can be used within a group structure. The credit can also be carried back and offset against corporation tax paid in the previous year, with any unused credits being carried forward indefinitely.

Qualifying companies refers to organisations which:

- i. Carries on a trade;
- ii. Carries out R&D activities; and
- iii. Maintains a record of expenditure incurred by it, in the carrying out of those R&D activities (Finance Act 2009, section (s). 766).

Qualifying R&D activities must:

- i. Be systematic, investigative or experimental activities within science or technology;
- ii. Seek to achieve scientific or technological advancement; and
- iii. Involve the resolution of scientific or technological uncertainty (Leyton, 2010).

The Irish R&D tax credit works on a rolling base year. Here Ireland's base year is 2003. This means that any current year qualifying expenditure is deducted from the expenditure incurred in the base year i.e. 2003, it is then on this figure that the tax credit is calculated. The R&D tax credit is 25% of this excess commencing on or after the 1<sup>st</sup> January 2009, before this date the tax credit rate available was 20%. However, there are rules and regulations that are applicable in order for this tax credit to be claimed. For example, the R&D activities must be carried out by a company in the European Economic Area (EEA), the qualifying expenditure must be net of any grants which relate to the R&D activities being carried out and the companies have only twelve months from the end of their accounting period to file a claim (Finance Act 2009, s. 766).

This tax credit is not unique to Ireland but along with its low corporation tax rate at 12.5% and other tax breaks such as no withholding taxes on interest or dividend payments, it makes Ireland an attractive location for multi-national companies

(MNC). Ireland is regarded as a world leader in both pharmaceutical and software exports with over 150 pharmaceutical companies, 50 biotechnology companies, 600 software companies and 300 electronics companies. This has come about through a combination of innovative tax and economic policies (Fry, 2007).

Although this tax credit gives companies additional relief due to engaging in R&D activities, the Innovation Taskforce Report (2010) wants the Irish Government to do more in order for Ireland to capture a greater share of the innovation activity globally. Commentators have criticised the rolling base year as being out of touch and out of date because some companies are at a disadvantage with this approach; especially in the economic downturn as their R&D expenditure could fall below what it was in the base year and no R&D tax credit could then be claimed (Flanagan and Hardy, 2009).

The way in which the Irish R&D tax credit can be claimed is questioned, is the base year approach or the volume approach best? The differences between these two methods are:

- Base year approach – this means that any expenditure in any year in excess of the expenditure incurred in the base year (i.e. 2003 for Ireland) qualifies for the relief (Doyle, 2010).
- Volume approach – this means that all expenditure in full or over a certain amount qualifies for the relief.

In Ireland, it would seem that the base year approach is disadvantageous to companies that were established before 2003 but this was not taken into account by the Government. Therefore should companies that have been formed longer lose out on the true extent of this tax credit? Or would a volume approach be best for companies to combat this problem for companies that are engaged in R&D.

### **2.5.2 In the UK**

Within the UK, the R&D tax relief is available to all UK tax resident companies undertaking R&D activities. The relief is available to companies that spend over

£10,000 per annum on qualifying expenditure. The UK has two R&D tax rates; one is in relation to small to medium enterprises (SME) and the other for large companies;

- SME's can deduct up to 175% of qualifying expenditure incurred after the 1<sup>st</sup> August 2008; and
- Large companies can deduct up to 130% of qualifying expenditure after the 1<sup>st</sup> April 2008 (Leyton, 2010).

The UK government believes that their R&D tax credit enhances the UK's image as a destination for high value investment and jobs. It has contributed to creating a competitive environment for R&D and innovation in the UK (Darling, 2007).

### 2.5.3 In the US

The US R&D tax credit expired on the 31<sup>st</sup> December 2009. The US does not have a continuous R&D tax credit; instead it opts for renewing this tax credit almost annually. So far this year, the extension of the R&D tax credit for 2010 has not being granted by the US congress.

There is no current R&D tax credit in the US, but prior legislation included:

- Providing a maximum 10% credit for qualified R&D expenditures in excess of a 1984-88 base (measures R&D expenditures against gross sales receipts for the period);
- An Alternative Simplified Credit, providing a credit of 14% of R&D expenses that exceed 50% of average R&D expenses over the prior three years;
- An Alternative Incremental Research Credit formula, which combines a three-tiered fixed base percentage with a reduced three-tiered credit percentage (Ernst and Young, 2008).

The business deduction for R&D expenses must be reduced by the amount of any R&D credit.

Although in the US the R&D tax credit has not been extended yet as in other years, it is assumed that this tax credit will be reinstated. As this tax credit must be extended

almost annually, it affects companies that have projects with a life span of more than one year. By making the R&D tax credit permanent it will ensure that companies receive the full benefit of the tax credit. It remains unclear why the US does not have a rolling R&D tax credit.

## 2.6 Conclusion

The definitions of R&D under SSAP 13, IAS 38 and SFAS 2 are almost identical. These standards also share common examples of R&D activities. However, the accounting treatment of R&D differs between US GAAP, FRS and IAS. The differences between these accounting standards can be seen in the summary table below.

**Table 1 – Summary of the Accounting Standards for R&D**

	<u>SSAP 13</u>	<u>IAS 38</u>	<u>SFAS 2</u>
Definition of Research	Experimental or theoretical work undertaken primarily to acquire new scientific or technical knowledge for its own sake rather than directed towards any specific aim or application.	Original and planned investigation undertaken with the prospect of gaining new scientific or technical knowledge and understanding.	Planned search or critical investigation aimed at discovery of new knowledge, with the hope that such knowledge will be useful in developing a new product or service, or a new process or technique, or bringing about a significant improvement to an existing product or process.
Research Activity Examples	<ul style="list-style-type: none"> <li>• Activities such as laboratory research, aimed at obtaining new knowledge;</li> <li>• The search for, evaluation and final selection of applications of research findings or other knowledge; and</li> <li>• The search for alternatives for materials, products or systems services.</li> </ul>		

Definition of Development	The use of scientific or technical knowledge in order to produce new and substantially improved materials, devices, products or services, to install new processes or systems prior to the commencement of commercial applications, or to improve substantially those already produced or installed.	Application of research findings or other knowledge to a plan or design for the production of new or substantially improved materials, devices, products, processes, systems or services prior to the commencement of commercial production or use.	Translation of research findings or other knowledge to a plan or design for a new product or process, or for a significant improvement to an existing product or process, whether intended for sale or use.
Development Activity Examples	<ul style="list-style-type: none"> <li>• The design, construction and testing of pre-production or pre-use prototypes and models;</li> <li>• The design of tools, jigs, moulds and dies involving new technology;</li> <li>• The design, construction and operation of a pilot plant that is not of a scale economically feasible for commercial production; and</li> <li>• The design, construction and testing of a chosen alternative for new or improved materials, devices, products, processes, systems or services to the point that they meet specific functional and economic requirements and are ready for manufacture.</li> </ul>		
Capitalization of Research	Not allowed, therefore must be expensed. Other than under IFRS 3 Business Combinations.		
Capitalization of Development	Development may be capitalized if it meets certain criteria. This is at the managements' discretion.	Development must be capitalized if it meets certain criteria.	Not allowed, therefore must be expensed.



Since 2002, the convergence process has been rather slow. It does not seem to be a priority for either the FASB or the IASB. Therefore, it is clear that convergence in relation to R&D will not occur for at least another few years. Hence, SSAP 13, IAS 38 and SFAS 2 will remain the accounting standards used in Ireland, the UK and the US for R&D until the convergence process is complete. The convergence must discuss whether capitalization of development expenditure should be permitted or not. The IASB decided that the IFRS for SME's would treat all R&D costs as an expense to the statement of comprehensive income. Alternatively, SME's could apply the requirements of IAS 38 by a cross-reference to the IFRS (IFRS for SME's, 2009). Therefore, it is unclear what decision the IASB will take on the convergence process. However, if capitalization of R&D is authorised then the correct valuation method needs to be decided to assist companies when placing a value on R&D expenditure.

R&D expenditure is high globally. In 2008 the top 1,400 global companies spent approximately £274 billion on R&D expenditure (The 2008 R&D Scoreboard, 2008). This being said, the R&D tax credit has been essential in keeping a competitive global economy. It enhances a company's ability to bring more products and services to the market place.

The R&D tax credit has been shown to be effective at increasing R&D expenditure, and as research has shown that R&D is a key to boosting economic growth (Lev and Sougiannis, 1996). Therefore, maintaining or even increasing the R&D tax credit will encourage companies to perform more R&D in Ireland and also globally. This will leave companies in a better position to innovate and compete successfully in national and international markets.

Finally, this chapter provided the reader with an overview of the literature that is relevant to the author's research topic. This literature review covered the accounting treatment of R&D in Ireland, the UK and the US, the problems with convergence of accounting standards, the valuation of R&D and the R&D tax credit. The literature review provided the author with information about past and current research in the area of the research topic. This has helped the author refine their research question and objectives, which are as outlined in section 1.4 and 1.5.

## Chapter 3 – Research Methodology

### 3.1 Introduction

Methodology describes “how an individual piece of research is conducted” (Brennan, 1998 (Pg: 37)). The purpose of including a methodology section is to outline how the researcher plans to carry out their research, including the author’s research question, objective, research strategies, data collection techniques and why the strategies and techniques are suitable to answer the research question posed.

In this section the researcher will outline their research question, research objectives, research design and finally provide a summary and conclusion.

### 3.2 Research Question

The research methodology required must be capable of helping the researcher answer the following research question:

“How Research and Development is accounted for Ireland by companies listed on the Irish Stock Exchange (ISEQ)?”

### 3.3 Research Objectives

The author’s research objectives are derived from the research question, and are what the researcher hopes to achieve from doing this research. The objectives are:

- To compare and contrast how R&D is accounted for in Ireland, the UK and the US and the impact of future convergence by global standard setters.
- To examine how the valuation of R&D is important.
- To establish what influence the R&D tax credit has on companies.
- To determine what Ireland is like as a R&D economy.

### **3.4 Research Paradigms**

The research paradigm is the general approach to research. Collis and Hussey (2003, Pg: 46) state the term paradigm refers to ‘the process of scientific practice based on people’s philosophies and assumptions about the world and the nature of knowledge...about how research should be conducted.’

The two main paradigms are positivism and interpretivism which are explained below.

#### **3.4.1 Positivism**

Positivism is based on the concept that similar studies should be comparable and achieve the same results where there is one truth, and one truth only. Positivism is a structured approach to collecting data, which is analysed and interpreted. Positivism implies that the researcher is “working with an observable social reality and that the end product of such research can be the derivation of laws or law-like generalizations similar to those produced by the physical and natural scientists” (Remenyi et al, 2003, (Pg: 32)).

#### **3.4.2 Interpretivism**

Interpretivism is a qualitative research method that studies human experiences and consciousness. It is the study of how things appear in our experiences, the way we experience things and therefore the meaning things have in our experiences (Hair et al, 2007).

#### **3.4.3 Research Paradigm Adopted**

Selection of the correct philosophy is crucial to the research outcome, and is determined by the way in which the researcher thinks about the development of knowledge. Justification of the researcher’s philosophy will depend on the nature of the researcher’s objectives and their desired outcomes. After studying the literature,

the researcher has concluded that a mixed method approach will be used as both paradigms – positivism and interpretivism will be used in this research.

Semi-structured interviews are interpretative in nature and questionnaires are of a positivistic nature as the results can be analysed into percentages. The study involved the researcher interpreting the opinions of the interviewees in Chapter 4. Interpretivism allows the understanding of why and how data is collected however; the findings are open to the researcher's bias. Questionnaires are quantifiable in nature by the use of yes/no answers in their structured nature, therefore assuming a reduction on researcher bias.

### **3.5 Research Approach**

When doing research the author must decide on the research approach that will be undertaken in order to answer the research question. There are two possible approaches to research depending on the outcome that you want from your research. These approaches are inductive and deductive.

#### **3.5.1 Inductive Research**

Hussey and Hussey (1997) express that if the aim of the research is to develop a theory, then an inductive approach should be used. The inductive approach involves gaining an understanding of the meaning humans attach to events.

#### **3.5.2 Deductive Research**

A deductive approach is used if you want your research to prove a theory or hypothesis. It is based on scientific principles and involves the development of a theory that is subject to rigorous testing (Saunders et al, 2007).

### **3.5.3 Research Approach Adopted**

The author will be using a combination of both a deductive and an inductive approach, because the aim of the research is to see how Irish listed companies account for R&D, to determine what problems these companies have with the valuation of R&D, to establish if they are availing of the R&D tax credit and to determine what Ireland is like as an R&D economy. A deductive approach will enable the author to collect data that can be quantified and will result in a conclusion that generalises about the entire population as a whole. Whereas, an inductive approach will allow the author to qualify data that will be unique to the population.

### **3.6 Research Focus**

Research focus varies depending on the purpose of the research. The purpose of the research could be exploratory, descriptive, or explanatory, or could be more than one of these.

#### **3.6.1 Exploratory Research**

Exploratory research is one that “aims to seek new insight into phenomena” (Saunders, 2007 (Pg: 598)). It is aimed at trying to find out what problems exist if any. Exploration is particularly useful when the researcher is unclear of what problems might arise during the study (Coldwell and Herbst, 2004).

#### **3.6.2 Descriptive Research**

Descriptive research is one that produces an accurate representation of persons, events or situations. It tries to answer the questions who, where, what, when and how (De Vaus, 2002).

### **3.6.3 Explanatory Research**

Explanatory research is one that studies a “situation or a problem and tries to explain the relationship between the variables” (Saunders, 2007 (Pg: 598)). It tries to explain why things happen and not just what happens but how.

### **3.6.4 Research Focus Adopted**

The author has decided to adopt an exploratory and descriptive approach to this research because the author is trying to gain both qualitative and quantitative information. The exploratory approach is used by the researcher to find out how R&D is treated in the financial statements of listed companies, this will be done through the questionnaire responses and by analysing the financial statements from the companies annual reports.

A descriptive approach will be adopted by conducting semi-structured interviews and also by using the questionnaires, were the respondents will be able to express their views on matters such as the accounting treatment of R&D, valuation of R&D, tax credits for R&D and Ireland as an R&D economy.

Once the research focus and the research approach has been decided upon it will then be necessary to decide on what data collection methods the author will implement to carry out the research.

## **3.7 Data Collection Methods**

The two data collection methods used by the researcher for this project are primary and secondary research. These are used as most research requires a combination of both secondary and primary research in order to answer the research question and its objectives.

### 3.7.1 Secondary Research

Secondary data includes both qualitative and quantitative data that has arisen from previous works undertaking (Malhotra, 2007). Finding secondary research involves establishing the correct information that is suitable and valid to the dissertation and then locating this data.

There are numerous forms of secondary research available; they have been broken into three forms namely documentary, survey and those from multiple sources (Saunders et al, 2007). However, the secondary research conducted by the author included reviewing articles, academic journals and books to find the most suitable literature. In carrying out the secondary research, the financial statements of Irish listed companies and 10 companies from the Pharmaceutical and Food sector of the UK's Financial Times Stock Exchange (FTSE) were examined to determine the accounting and amount of R&D; however, the researcher intends to use this research on a primary research basis.

There are several advantages of gathering secondary research; it is easily accessible, relatively inexpensive and quickly obtained. It also has its disadvantages as well, including that it is not tailor made to fit this research, therefore the author must ensure that the secondary research is "reliable and valid" (Sumser, 2001, (Pg:10)). The researcher only included secondary data which she found to be reliable and valid, this included peer reviewed articles, books, government studies and financial statements (however it is questionable if financial statements are reliable and valid).

### 3.7.2 Primary Research

There are three main methods for the collection of primary data – observation, questionnaires and interviews. The collection method used is at the discretion of the researcher as long as they are able to obtain the information to answer the research question, however Kumar (1999) states that the method chosen depends on the purpose of the research, the resources available, and the skills of the researcher. This research is focusing on financial statements, questionnaires and interviews as its

primary data collection, as observation was not a suitable choice given the research question and its objectives.

### 3.7.2.1 Questionnaires

Questionnaires are one the most efficient method of collecting in terms of time and money (Hair et al, 2007). They are an inexpensive way of generating large amounts of information from a large number of people, to whom a standard set of questions is issued for completion. There are two types of questions that can be used in questionnaires:

- Closed questions – the researcher provides a set of responses from which the respondent must choose. Typical responses to closed questions are yes/no or multiple choice option, ratings and rankings.
- Open-ended questions – in these types of questions no options are available for the respondent to choose. It is designed to encourage revealing attitudes or obtaining facts (Grummitt, 1980).

The key to a successful questionnaire is in its design, regardless of which types of questions are used. The questions should be clear, concise and unambiguous. This eliminates problems associated with wrongly interpreting the questions. The researcher should avoid using certain types of questions that lead the respondents to choose a particular answer.

Questionnaires have the advantage of being completely anonymous and they are probably the most inexpensive way of generating the required information. However, they are considered to be a very impersonal way of collecting data. There is no face-to-face interaction between the researcher and the respondent. Because of this, the response rate may be low and responses from the questions short. Also, questionnaires do not allow the researcher to see the full picture as it does not allow for the correction of any misunderstandings or probe further response.



### **3.7.2.1.1 Questionnaire Design**

It was decided that the questionnaires would be issued to Irish listed companies as the population for non-listed companies is too large and a representative sample may be hard to obtain (see Appendix 1 for list of companies on the ISEQ). Therefore the entire population was surveyed making this a census rather than a sample. A total of 63 questionnaires were issued with 20 complete and 2 partial responses received.

The researcher chose questionnaires due to time and financial constraints to give the most suitable and valuable information for her primary research. It was first thought that the questionnaires could be distributed by email but the researcher was unable to obtain all the companies email addresses, so instead all questionnaires were posted out to the companies, along with a return stamped addressed envelope.

The questions used for the questionnaire were designed by a combination of the researcher, Business Expenditure on Research and Development (BERD) Survey 2007/2008, a survey conducted by Bill Nixon. The questions relate back to the secondary data collected and to the research question and objectives. It was important to ensure that the questions were clear, understandable and unambiguous, therefore the questionnaire was pilot tested before sending out to the population. The questions yielded both qualitative and quantitative information and had a combination of both open-ended and closed questions. A copy of the cover letter sent with the questionnaires and the questionnaire and can be found in Appendix 2&3 respectively.

Initially, the researcher had chosen to use questionnaires as the main means of data collection, however, due to the problems listed above it was decided that more detailed information was required. Therefore, the researcher also conducted a number of interviews.

### **3.7.2.2 Interviews**

Interviews are used when we want to investigate or understand someone's feelings, experiences or learn more about answers they may already have given. Interviews can be conducted on the telephone or face-to-face. There are three main types of interview techniques that are used in research – structured, semi-structured and unstructured.

The structured interview is used to discover people's views on a predetermined set of topics. Here the same set of questions is asked to all interviewees. In a semi-structured interview the researcher has a list of themes and asks questions to prompt answers from the interviewee. Unstructured interviews have no predetermined set of questions or topics. This latter type of interview is very informal and more like a conversation on a specific topic between two people rather than an interview.

#### **3.7.2.2.1 Interview Design**

Each interview technique has its advantages and disadvantages depending on the type of interview required. The researcher did not want a too rigid interview or an interview that was of no relevance for primary research. Therefore it was decided that a semi-structured interview would be best to obtain sufficient information. This allowed the researcher to direct questions or themes at the interviewee, while at the same time allowing the conversation to flow so as to let the interviewees express their thoughts freely.

The interviews are being used to get a better insight into the accounting treatment for R&D, valuation of R&D, tax credit for R&D and Ireland as an R&D economy. Two semi-structured interviews were held. The interviewees included:

- Professor of Accounting and Finance at a top Irish University.
- An accountant that was able to help with the accounting treatment of R&D and their opinion of what Ireland is like as an R&D economy.

An interview guide was drawn up (see Appendix 4) to ensure that the researcher obtained the relevant information from all interviewees, however, this was only a guide and additional questions were also asked as not all questions were applicable to all interviewees. The interviews were conducted by the researcher in July 2010; each interview varied in length but lasted between thirty to forty-five minutes. The interviews were not tape recorded. However, the researcher also took hand written notes on important areas while listening intently. The interview guide was sent to all interviewees in advance so that they would have the opportunity to prepare for the interview. The researcher hoped that this would not result in rehearsed responses that did not reflect their true views or beliefs.

### 3.7.2.3 Triangulation

Triangulation refers “to the use of different data collection techniques within one study in order to ensure that the data are telling you what you think they are telling you” (Saunders et al, 2007 (Pg: 139)). The use of triangulation added to the researchers’ primary data collection. Here the researcher used triangulation by comparing the financial statements of listed companies with the responses to the questionnaires received from them. The financial statements gave the researcher an indication of how the companies dealt with R&D and by using triangulation she could see if what they did in reality was the same as they said they were doing.

## 3.8 Data Analysis

The data was analysed using a combination of three data collection methods. These being:

1. Questionnaires – the responses were analysed using tables and graphs such as pie and bar charts so that the answers can be clearly understood by the use of visual aids rather than lengthy descriptive paragraphs. This can be achieved using Microsoft Excel, which is quick and easy to use. The reader should have no problems understanding this method of data analysis; therefore it is an appropriate method.
2. Interviews – these were used as quotes or paraphrased in the text in order to give a clearer understanding to answering the research objectives. These can also be analysed by percentages e.g. yes/no answers.
3. Financial Statements – by using the financial statements it will be clear to the reader what percentage of intangible assets are in relation to R&D. The comparison with the UK companies will help establish whether or not the Irish listed companies are on par with other companies in the same sector, and also if the same accounting treatment applies.

## 3.9 Ethical Consideration

Good ethical practice requires that all research is conducted on the basis of respect for and adherence to regulatory guidelines and internationally accepted ethical norms

focusing on the welfare of the study participants. In order to follow this, the researcher had to fill out the college's ethical policy and procedure application and have it approved by an ethical committee before engaging in any primary research.

When performing research it is important that the researcher takes into consideration all ethical issues which may affect any respondents. The researcher conducted all primary research with professional integrity and strict confidentiality. With regard to both the interviews and the questionnaires, the researcher ensured that interviewees and respondents would remain anonymous and their views would be confidential.

### **3.10 Conclusion**

This chapter provided an overview of the methodology used to carry out the author's research. The chapter included information on how the questionnaire and interviews were designed, how the population and sample were chosen and how the author intended to use the financial statements of listed companies. It outlines how the questionnaire was distributed and how the interviews were conducted and also included the possible limitations that the author's research faces. The main findings from this research are discussed in Chapter 4.

## Chapter 4 – Data Analysis and Findings

### 4.1 Introduction

The aim of this chapter is to present the results of the questionnaire (see appendix 5) and interviews that the author has carried out as part of this research and the data collected in the financial statements of all 63 companies listed on the ISEQ and 10 companies specialising in the Pharmaceutical and Food Industry on the FTSE. The author will outline the results that were obtained, then will analyse these results and will discuss what these results mean and how these results compare to other research carried out on this topic and what has been published in journal articles.

### 4.2 Respondents

The questionnaire was carried out by post with the respondent given a return stamped addressed envelope to complete the questionnaire. The author got the addresses of the respondents from the Company Registration Office (CRO). The author sent a total of 63 questionnaires and received a total of 20 full responses and 2 partial responses. This gives the author a response rate of 32%. The partial responses were not included in the results. Of the 20 respondents, 11 (55%) undertook R&D.

The questionnaires were addressed directly to the CFO and all but two responses were received from the CFO, the other two being received from Group Controllers. The author is happy with the people who completed the questionnaire and feels that they all have suitable knowledge to answer the questions posed to them in the questionnaire. As a result of this the author believes that there is no need to exclude any of the participants.

**Table 2 – Respondents positions within organisations**

<u>Position within the organisation</u>	<u>Number</u>	<u>%</u>
CFO	18	90
Group Controller	2	10
Total	20	100

The participants all ranged from a variety of business areas such as Pharmaceuticals, Food and Construction, etc. The breakdown of businesses that completed the questionnaires is as follows:

**Table 3 – Industry sectors which the respondents operate**

<u>Industry</u>	<u>Number</u>	<u>%</u>
Pharmaceuticals	2	10
Food	2	10
Construction	2	10
Technology	3	15
Financing	0	0
Other	11	55
Total	20	100

A total of two semi-structured interviews were conducted. The interviewees included:

- Interviewee A – Professor of Accounting and Finance at a top Irish University.
- Interviewee B – An accountant who was able to help with the accounting treatment of R&D and their opinion of what Ireland is like as an R&D economy.

In relation to the financial statements obtained from all 63 companies listed on the ISEQ, only 6 companies (9.5%) capitalized development expenditure, with a total of 16% expensing R&D expenditure to the statements of comprehensive income. The 10 companies on the FTSE all engaged in R&D but none of the companies capitalized development expenditure, therefore they all expensed R&D expenditure to the statement of comprehensive income.

## 4.3 Data Analysis and Findings

### 4.3.1 Research Objective 1

“To compare and contrast how R&D is accounted for in Ireland, the UK and the US and the impact of future convergence by global standard setters.”

The aim of this objective was to find out how R&D is accounted for in the financial statements of Irish listed companies. In Chapter 2 the accounting treatment for R&D in Ireland, the UK and the US was discussed in detail as was the impact of future convergence by global standard setters, which in theory answers this research objective. However, whether companies are following these standards is a different issue and this is why the author obtained the financial statements of Irish and UK listed companies, issued questionnaires and conducted interviews on this subject area.

#### 4.3.1.1 Findings

The financial statements of the Irish listed companies that conducted R&D showed that all companies make reference to the policy in respect to accounting for R&D; however the amount of disclosure differed among companies. For example Datalex Public Listed Company (PLC) provided a detailed accounting policy:

“Research expenditure is recognised as an expense as incurred. Directly attributable costs incurred on development projects (relating to the design and testing of new or improved products) are recognised as intangible assets when the following criteria are fulfilled:

- i) It is technically feasible to complete the intangible asset so that it will be available for use or sale;
- ii) Management intends to complete the intangible asset and use or sell it;
- iii) There is an ability to use or sell the intangible asset;
- iv) It can be demonstrated how the intangible asset will generate probable future economic benefits;
- v) Adequate technical, financial and other resources to complete the development and to use or sell the intangible asset are available; and

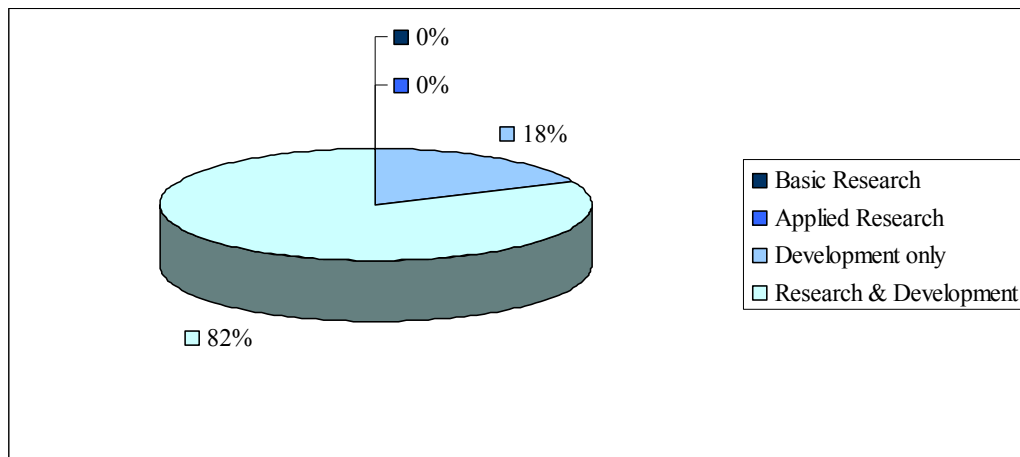
- vi) The expenditure attributable to the intangible asset during its development can be reliably measured.

Other development expenditures that do not meet these criteria are recognised as an expense as incurred. Development costs previously recognised as an expense are not recognised as an asset in a subsequent period. Capitalised development costs are recorded as intangible assets and amortised from the point at which the asset is ready for use on a straight-line basis over its useful life of three to five years” (Datalex PLC, 2008 (Pg: 34)).

This is in agreement with the literature found in 2.3.3 as it states that if development expenditure meets the criteria then it must be capitalized, otherwise it is charged as an expense to the statement of comprehensive income, along with any research expenditure.

The author asked respondents of the questionnaire what specific elements of R&D they carry out within their organisation in order to see if there would be any problems in defining R&D as set by the accounting standards. These were split into basic research, applied research, development only or R&D. The most common result was R&D with 82% of the respondents choosing this option. Only 18% respondents selected development, with no respondents choosing either basic or applied research.

**Figure 1 – Types of R&D carried out**

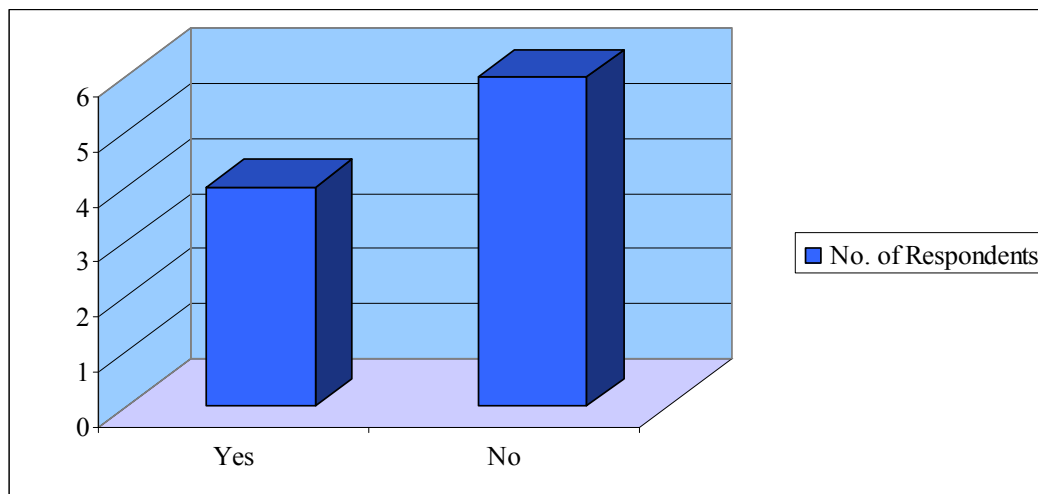




This helps to see if companies would find it difficult to separate research expenditure from development expenditure. When asked this question 40% of the respondents agreed that they find it hard to separate the two, mainly because they are too closely linked. This is one of the explanations the literature gives for the US expensing all R&D expenditure as companies are unable to separate the two.

While it is clear from the literature that the IAS's does not allow for the capitalization of research expenditure, respondents were asked if their company capitalized development expenditure. The reason given in the financial statements of the UK listed companies for not capitalizing development expenditure was that they did not meet the criteria for IAS 38. However, in Ireland, the results concluded that 60% of the respondents did not capitalize development expenditure.

**Figure 2 – Capitalisation of development expenditure**



Out of the 6 respondents that did not capitalize development expenditure, 5 agreed that it was because they did not meet the criteria. While the other respondent stated the reason that they do not capitalize development expenditure was because “it is easier for stakeholders to understand as shareholders prefer a simpler balance sheet”. However, interviewee B expressed that if companies meet the criteria for development they must expense it as “the accounting standards are strong so there is reason not to follow them”.

This lead to the question whether or not the accounting standards could be manipulated to allow companies to account for development expenditure in the way they preferred. This reflects what has been reviewed in the literature in that, capitalization or amortization of development expenditure is at the managers' discretion (Monahan, 2003). All but one of the respondents from the questionnaires believed that the accounting standards could not be manipulated as "guidance is very clear in the standard" and that the "criteria for capitalizing R&D is very specific and does not really provide any room for manoeuvre". However interviewee A is not of the same opinion, as was one of the respondents of the questionnaires who felt that companies could manipulate if they so wished as "there is a number of ways to interpret the standard based on output of R&D".

Over half of the respondents (60%) have a dual stock market listing, some with the UK and others with the US. The respondents with dual stock market listing with the UK face no problems with the accounting treatment for R&D as the same accounting standard (IAS 38) governs both.

### **4.3.1.2 Analysis and Discussion**

The results regarding the accounting treatment of R&D are in conjunction with the literature found in Chapter 2 by Irish listed companies. The IASB requires all Irish listed to follow IAS 38 in relation to R&D. The author agrees, from both analysing the financial statements and from the questionnaires, this is what these companies are undertaking.

The response in relation to whether or not companies manipulate the account standards is not in support of the literature found by the researcher. It must also be expressed that this result is what accounting standard boards want to see, so that they know they are achieving their goal as standard setters, which may help in their bid for global convergence.

### 4.3.2 Research Objective 2

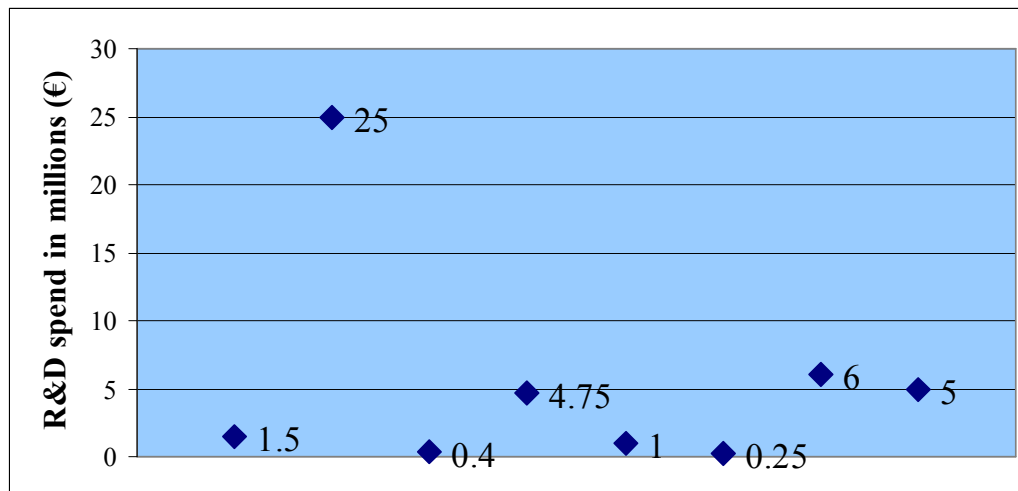
“To examine how the valuation of R&D is important.”

This objective was designed in order to establish what valuation should be placed on R&D. One of the criticisms of this is that if it is not physical and it cannot be seen, then how is R&D meant to be valued. From the literature it is clear that R&D is important for many reasons such as economic growth and general day-to-day needs of people, therefore if R&D is important then its valuation must also be important.

#### 4.3.2.1 Findings

Companies spend a great deal of money on R&D, the extent of this varies among companies as can be seen when the author asked the respondents of the questionnaire how much per annum do they spend on R&D.

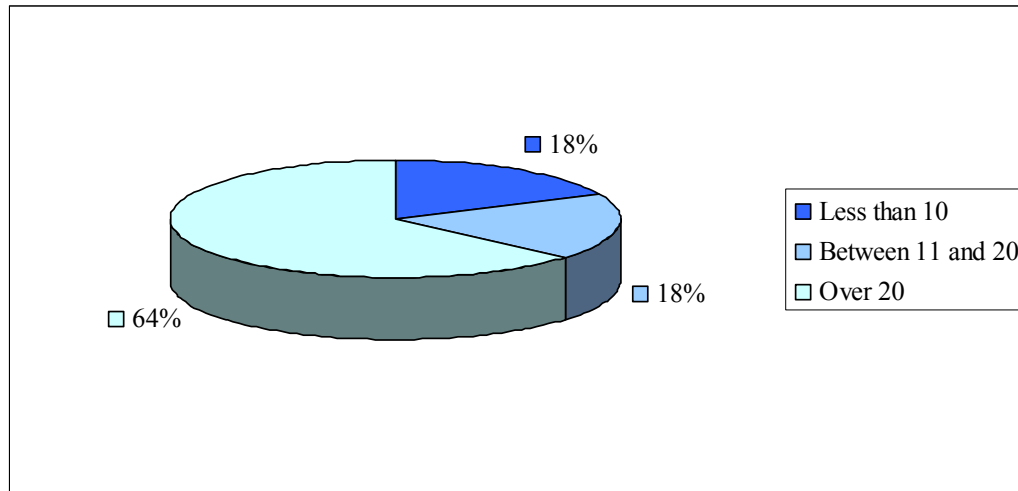
**Figure 3 – R&D spend by Irish Companies**



Overall it is clear that companies spent a large amount of money on R&D. From analysing the financial statements of all 63 companies on the ISEQ, the total amount spent on capitalized R&D in 2008 was around €88 million. However, this amount only accounts for 5% of total intangible assets and a mere 0.5% of total assets.

There are a lot of costs involved with R&D, one being the cost of labour. The author asked the respondents how many employees are involved in the R&D process. The results were:

**Figure 4 – Number of employees involved with R&D**

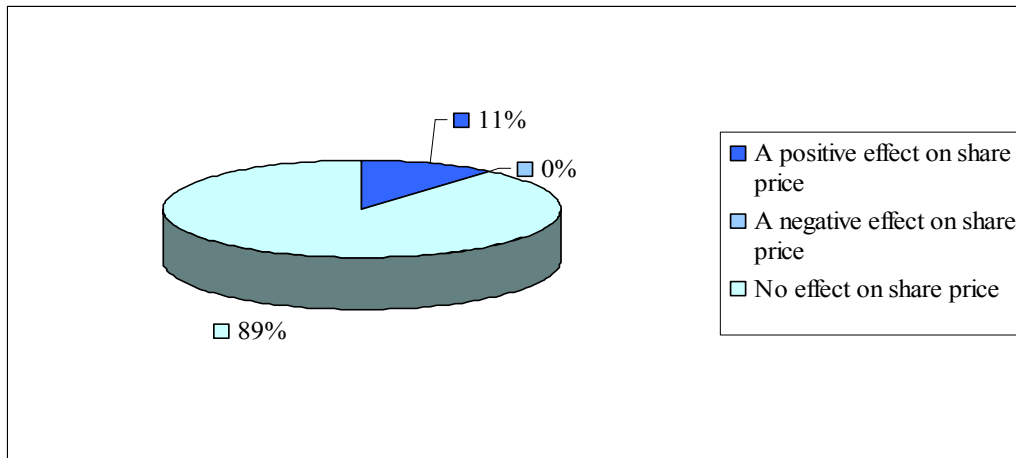


This graph shows that the majority of companies (64%) employ more than 20 employees for R&D. The author did not come across any literature that focused on this area of discussion but she found it interesting to see how many jobs were created for R&D alone by listed companies.

However, the author was able to find a vast amount of literature not only on the valuation of items in general as it is one of the contemporary issues in accounting (Drever et al, 2007) but also on the valuation of R&D. The author asked the respondents of the questionnaires on how they valued the R&D undertaken. 90% of the respondents valued R&D at cost, with 10% valuing R&D at fair value. It was not specified how fair value was based. The literature found that it was difficult to determine a valuation of R&D due to the uncertainties of future benefits and economic life, although both the cost model and fair value model is regarded as acceptable (IAS 38). Interviewee B believes that R&D should be valued at cost as “fair value is difficult to work out as it is based on a projection of present value and it is extremely subjective”.

It is believed that the capitalization of development costs has an effect on share price; therefore if this is found to be true, then an appropriate valuation must be placed on R&D. The researcher asked the respondents of the questionnaires if they also feel that the capitalization of development costs had an effect on share price.

**Figure 5 - Does the capitalization of development costs have any effect on share price?**



The popular answer with the respondents was that the capitalization of development costs has no effect on share price. 11% believed that capitalization has a positive effect on share price which agrees with the literature researched that found a strong positive correlation between financial statement information and the market value of equity when R&D is capitalized compared to notional expensing (Hirschey and Weygandt, 1985 and Smith et al., 2001). Interviewee A stated that he “did not know that share price was largely affected by analysts who had a biased outlook on what to say in relation to a company’s performance”.

#### 4.3.2.2 Analysis and Discussion

The results for this objective of whether or not the valuation of R&D is important concluded that the valuation of R&D is extremely important. The valuation of R&D impacts on other key aspects of a company’s existence such as the statements of comprehensive income if R&D is expensed or amortized or the statement of financial position if R&D is capitalized. The valuation of R&D in these two instances impact

on reserves and a profit or loss for a company which in turn will affect future spend on R&D if it is not seen as a good opportunity for the company. There are numerous options available for companies to value R&D at, as can be seen in Chapter 2 but it is again at the managers' discretion which option is used.

The findings of the impact development capitalization has on share price did not reflect that of literature researched. The literature found on this matter was unable to give a clear answer as to whether it had a positive effect (Sougiannis, 1994) or a negative effect (Kallunki et al, 2009) on share price, but from the responses from the questionnaires, the respondents feel that capitalization of development has no effect on share price.

### **4.3.3 Research Objective 3**

“To establish what influence the R&D tax credit has on companies.”

The goal of this objective was to determine what influence the R&D tax credit has on companies, as the R&D tax credit is said to be means of encouraging businesses to engage in R&D activities. Also, the author wanted to investigate whether the base year approach or the volume based approach is regarded as the best.

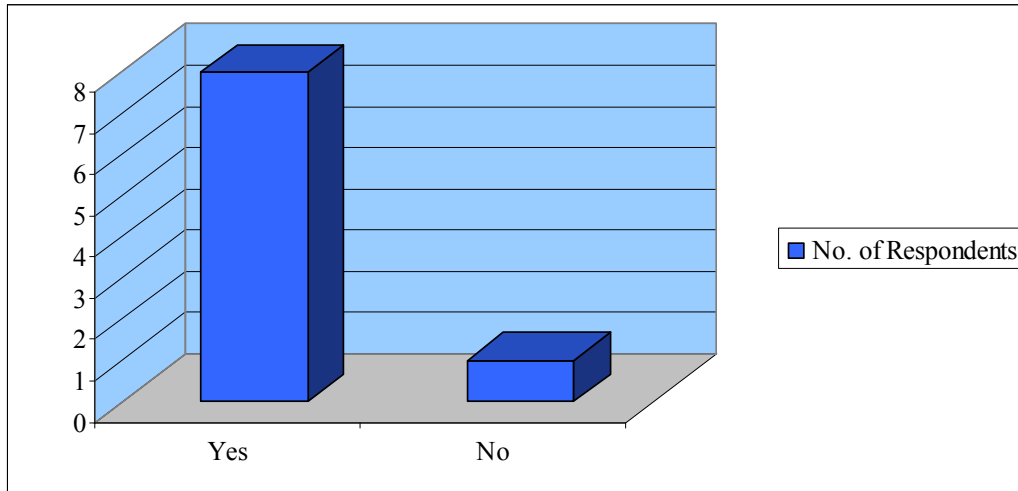
#### **4.3.3.1 Findings**

60% of the respondents of the questionnaires avail of the Irish R&D tax credit. The remaining respondents stated that the reason that they do not avail of the R&D tax credit was because of the following reasons:

- That the criteria for the tax credit does not apply;
- That the company is not currently engaged in R&D activity in Ireland, but are carrying out R&D abroad;
- That there is not enough expenditure in Ireland to justify claiming this credit; and
- That the expenditure in the base year was high and the company has not reached this amount since.

All but one respondent feels that this tax credit is of value to companies as they feel that “it is more suitable for relatively new companies as the base year is 2003 and we had a lot of spend that year”.

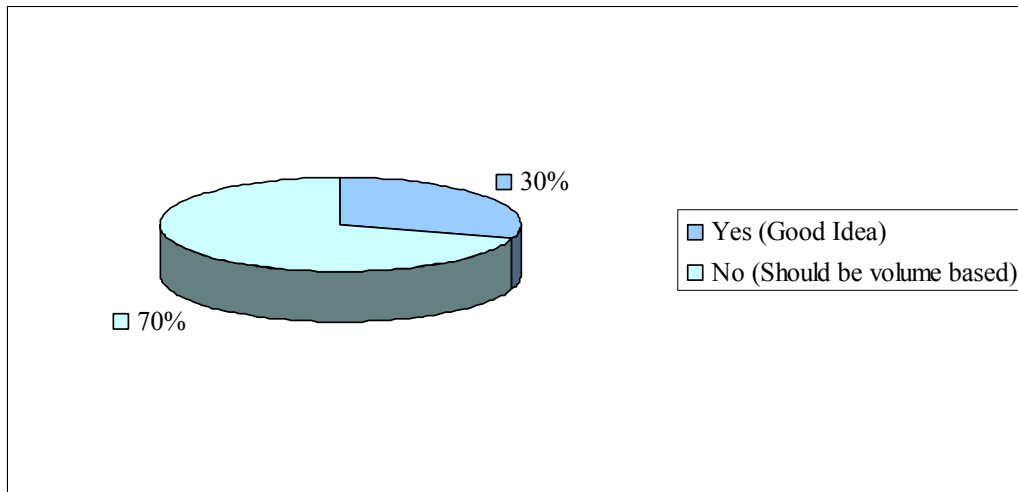
**Figure 6 – Is the R&D tax credit valuable to companies?**



All the respondents felt that the R&D tax credit is an incentive for companies to engage in additional R&D as “the marginal cost of additional resources is reduced” and that the tax credit “is far better than grants”. However, interviewee A said that although the tax credit is an incentive for companies, grants to conduct R&D should also be considered as an incentive.

From the literature for the R&D tax credit among countries differ on amounts and on what approach is used. The author asked the respondents of the questionnaires if they think that Ireland’s base year approach is a good idea or should it be more volume based like the US when its R&D tax credit was in effect.

**Figure 7 – Is the base year approach of Ireland’s R&D tax credit a good idea?**



Many of the comments on this question related to how unfair it was to older companies set up in Ireland before 2003 and that a volume based approach would “be a truer reflection of real costs incurred”. This is in agreement with the literature which concluded that the base year approach is of a disadvantage to some companies, especially in the economic downturn that Ireland is facing (Flanagan and Hardy, 2009). Interviewee B feels that the current R&D tax credit system in place is sufficient, with interviewee A disagreeing that this approach is better suited to new companies only.

#### **4.3.3.2 Analysis and Discussion**

The results shown for this objective are in unison with the literature found. It is clear that the Irish R&D tax credit is of value to companies as so many companies claim the R&D tax credit. Therefore, if it so popular in Ireland it still remains unclear why the US keeps eliminating the R&D tax credit there, as it would have a more immense number of companies in the innovation and R&D sector than Ireland.

Also, as the literature found, the base year approach Ireland undertakes is not favoured by the majority of the respondents. This means that the Irish Government may make the changes that the Innovation Taskforce Report (2010) has presented in



order to do more in order for Ireland to capture a greater share of the innovation activity globally.

#### 4.3.4 Research Objective 4

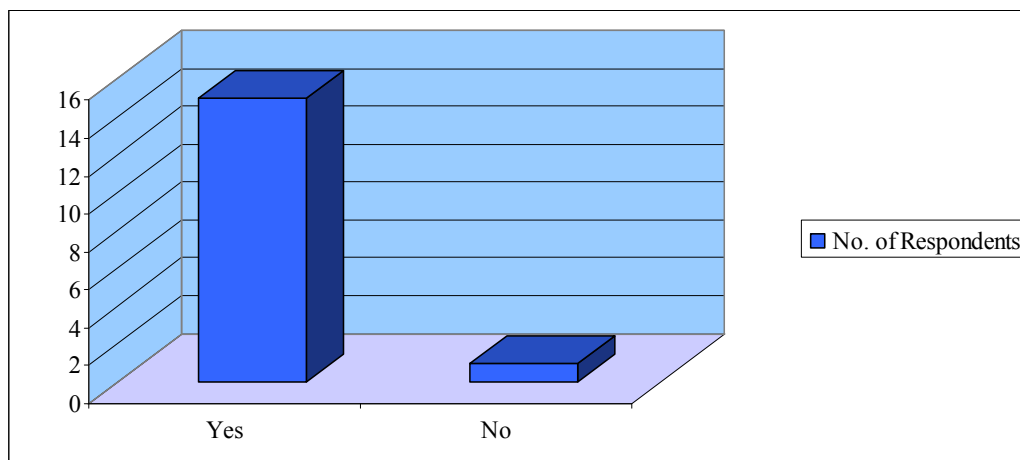
“To determine what Ireland is like as a R&D economy.”

This objective wanted to establish if Ireland is regarded as a good place for conducting R&D, as some research has shown that Ireland is not as globally active as other countries (The R&D Scoreboard, 2008). This also hopes to achieve if they are any problems of carrying out R&D in Ireland and what other locations are more favourable.

##### 4.3.4.1 Findings

Only one of the respondents of the questionnaires (6%) felt that Ireland was not a good place to conduct R&D as “the incentives are not good enough”.

**Figure 8 – Is Ireland a good place to conduct R&D?**



The main reasons that the respondents feel that Ireland is a good place to conduct R&D has been classified into three categories:

1. Employees – the qualifications and skills of the workforce.
2. Taxation - good tax regimes and low rate of corporation tax.

3. Location – a gateway to the EU.

However, when asked are there any impediments of carrying out R&D in Ireland the respondents of the questionnaires felt that Ireland had a lot of problems. These included the costs of labour and goods, the unavailability of senior R&D staff, lack of emphasis of science in schools, limitation of Government grant assistance, language barriers and locating laboratory facilities. All these play a major role on companies partaking in R&D, and must be fully assessed before companies decide where to locate for R&D activities.

**Table 4 – What locations, other than Ireland, is good for R&D activities?**

<u>More favoured locations for R&amp;D</u>	<u>No. of Respondents</u>
Eastern Europe	2
US	6
India	3
China	2
Israel	1
Luxembourg	1
Netherlands	1

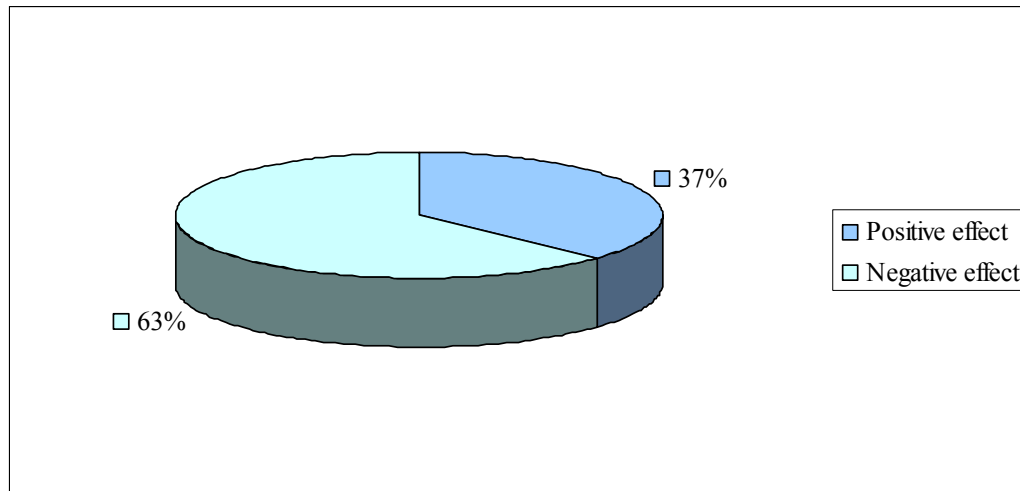
When asked what improvements could be made to make Ireland more R&D friendly, the answers from the respondents of the questionnaires covered the following areas:

- An increase in the R&D tax credit and other tax incentives;
- Moving away from the base year tax credit;
- Increasing language skills and training;
- Stabilising national finances as to give MNC’s more security;
- More support from the Government to encourage R&D activity; and
- Introducing more subsidies, that could fund facilities for R&D that companies can use.

Interviewee B suggests that an increase in the awareness of the R&D tax credit is needed so that smaller companies know that this tax credit exists.

Overall the current recession is a big factor in the decisions that both companies and the Government make. Therefore, the author asked the respondents of the questionnaires if the recession has had a positive or negative effect on the amount of R&D companies undertake. The results showed that 37% felt that the recession has had a positive effect on R&D.

**Figure 9 - What effect has the recession had on R&D?**



Interviewee A is of the opinion that the recession will have a negative effect on R&D activity. He believes that cut backs will need to be made and normally this starts “firstly with advertising, secondly with training and then R&D as these are discretionary items”. He also expressed that Pharmaceutical companies can not afford to make R&D one of their cut backs.

#### 4.3.4.2 Analysis and Discussion

This objective has not been discussed in any great length in the literature; therefore there has been no cross reference between the findings and the literature. The results of this objective are quiet clear that Ireland is a good place to conduct R&D but it has it flaws. Many of the reasons that companies find faults in Ireland for R&D purposes are similar to the areas they have suggested for improvements to make Ireland more R&D friendly.

The US was a predominant choice for a better location than Ireland for R&D; the author felt that this answer was in concurrence with The R&D Scoreboard 2008 as out of the top 20 R&D companies 35% had a US origin. This was 20% ahead of any other country. The recession will not impact on Ireland alone, as this is a global problem and all countries will be feeling the effects of it.

### **4.4 Conclusion**

This chapter presented the findings of the author's research. The author then analysed and discussed the findings. The author found that companies listed on the ISEQ were following the accounting standards set by the IASB when accounting for R&D and, contradictory to the literature, these companies did not feel that they could manipulate the standards. The results showed that the cost model was the valuation method mostly used for R&D and that the capitalization of R&D had no effect on the share price of companies. The author also found that although the Irish R&D tax credit is being used it has its problems, one being the base year approach. Finally, the author found that while Ireland is regarded as a good location to conduct R&D largely due to its tax regimes, other locations such as the US is also preferred.

## Chapter 5 – Conclusion and Recommendations

### 5.1 Introduction

The purpose of this chapter is to provide the reader with a summary of what the research found and the conclusions that the author has arrived at after carrying out this research. This chapter will include a conclusions, the authors' reflection of the learning experience and areas for further research.

### 5.2 Research objectives and summary of research findings

#### 5.2.1 Research objective 1

“To compare and contrast how R&D is accounted for in Ireland, the UK and the US and the impact of future convergence of global standard setters in this area.”

Here the researcher found from the literature that the main accounting standards in these three countries relate to SSAP 13, IAS 38 and SFAS 2. These are quite similar standards, with the main contradiction in relation to the capitalization of R&D. From the findings of the questionnaires we can see the Irish listed companies must follow IAS 38, with only 40% meeting the criteria to capitalize development costs. The future of the convergence of the accounting standards process remains uncertain as to when or if this will go ahead.

#### 5.2.2 Research objective 2

“To examine how the valuation of R&D is important.”

The author found that the most commonly used method for valuing R&D was the cost method, with 90% using this method. The literature found that there were three main methods for the valuation of R&D; the market, the income and the cost method with only the market and the cost method being permitted under IAS 38. The valuation of R&D is important in relation to the capitalization of development costs, as some

research shows a positive effect on share price while others shows a negative effect. The findings of this research found that the capitalization of development costs had no effect on share price.

### 5.2.3 Research objective 3

“To establish what influence the R&D tax credit has on companies.”

The author found that all respondents feel that the Irish R&D tax credit is an incentive for companies to engage in additional R&D, but not all the companies are eligible to receive the R&D tax credit. It is also clear from the literature that the R&D tax credit is important as most countries now have some form of R&D tax credits. One of the criticisms of the Irish R&D tax credit is that the base year approach is unfair so some countries and that a more volume based approach would be much preferred.

### 5.2.4 Research objective 4

“To determine what Ireland is like as an R&D economy.”

The researcher concluded that although Ireland is regarded a good place to conduct R&D mainly due to its location, the tax regimes in place and the skills and qualifications of the workforce, the US is regarded as a superior place to conduct R&D mainly because of its access to R&D facilities. The author found that if Ireland is to increase in R&D activity certain improvements are required to be made.

## 5.3 Conclusion

At first the author believed that the accounting treatment for R&D was highly complex in Ireland, the UK and the US, this is why the researcher formed the research question:

“How Research and Development is accounted for Ireland by companies listed on the Irish Stock Exchange (ISEX)?”

Therefore in order to answer this question the researcher broke this question into four main objectives, which can be seen above. The principal aim of the objectives was to answer the research question but also to expand the research further to include other factors which are important to R&D such as taxation, valuation and the Irish economy. The researcher will now, after completing Chapters 1 to 4, answer her research question.

The complexity first thought by the researcher was not found after further investigation into the accounting treatment of R&D in Ireland, the UK and the US. The US clearly states that all R&D must be expensed to the statement of comprehensive income. In Ireland and the UK the main complexity for the accounting treatment refers to whether or not development expenditure meets the criteria, as research expenditure is expensed to the statement of comprehensive income unless as part of a business combination.

All Irish listed companies must prepare their financial statements under IAS's; therefore that exact accounting standard they must abide by is IAS 38, as has been discussed previously. This standard has a rigorous format that must be followed. However, the author wondered if this accounting standard could be manipulated like many standards before that have caused several corporate scandals. The majority of respondents answered "no" to the question of whether development expenditure could be manipulated to meet or not to meet the relevant criteria. However, the researcher feels that if this question was asked to such companies as Enron and WorldCom their answer would also have been no. Therefore, the author is reluctant to place any reliance on this piece of information.

The valuation of all assets not just intangible assets has been questioned in the past, which is why the author felt that this objective would be relevant to this research. Valuation is an important aspect of accounting without it what would financial statements look like. As discussed in Chapter 2 all valuation methods have their advantages and disadvantages which makes them more suitable to certain types of items. IAS 38 states that the revaluation method, otherwise known the fair value model, and the cost model are applicable under this standard. Irish listed companies therefore must choose one of these methods but the main question is which one is

better? The results showed that most of the companies used the cost method. But are they correct? The author feels that although the cost method is preferred it has its flaws. However, as future income is most difficult to estimate, that perhaps that this is the correct valuation for R&D.

Part of the literature for this dissertation found that there was a correlation between the capitalization of development expenditure and share price, whether it be positive or negative. If either way was found to be true, the author thinks that the disclosure of R&D would be significantly reduced. If the capitalization of development costs had a positive effect on share price more companies would be meeting the criteria, and vice versa - if it incurred a negative effect then some companies would not the criteria. However, this study found that there was no correlation between the capitalization of development expenditure and share price. On this point the researcher tends to agree with interviewee A when he said that the main effect on share price, apart from when there is an increase/decrease in profit or a publication, is what analysts have to say about financial statements. This is like the efficient market hypothesis (EMH) theory depending on how much the public knows will inadvertently depend on the value of share price.

Financial reporting will always have some form discrepancy behind it. However accountancy as a whole focuses on many other aspects this is why the author included the R&D tax credit as one of the objectives. The R&D tax credit is widely used across the world. Ireland is said to have a good R&D tax credit (25%) and coupled with its low corporation tax rate (12.5%) makes it one of the most attractive locations for R&D. Ireland uses the base year approach in order to see what proportion of the R&D spend will qualify for the credit. This is not the same in all countries and this practice has been criticised both in the literature and in the findings. The results showed that a more volume based approach would be a good idea. The author agrees with these results and as R&D is believed to be of great importance for economic growth then all companies should be allowed reap the same benefits and not be penalised because of when it was formed.

This objective leads the author to her final objective, if R&D is great for economic growth, then what is Ireland like as an R&D economy? Every country boasts about



what is great with their country and on this matter Ireland is no different. Ireland believes that due of its tax regimes, it is one of the better countries in which companies can conduct R&D here. The findings concluded that while the respondents felt that Ireland was a good location for R&D, other places such as the US were more advanced than Ireland. The researcher believes that although Ireland has great tax incentives for companies undertaking R&D, the economy is still underdeveloped for R&D. Currently there is a mismatch between the tax side of R&D and the economy side. Ireland needs to focus more on developing R&D facilities and increasing the education on R&D so that it can reach its full potential and attract more R&D companies.

### **5.4 Recommendations**

#### **5.4.1 Personal learning**

The author feels that she learned a lot from doing this research dissertation. The author's analytical and critical skills have improved greatly as a direct response to carrying out this research. If the author were to carry out this research again there are a number of things that she would do differently. The main difference that the author would make is in choosing the subject matter. Although R&D is a very topical issue, finding sufficient literature that could be regarded as relevant was quite difficult. Therefore the author would have chosen an area on which literature is easily obtained. With regard to the study undertaken, the author would have carried out more interviews in order to have got more in-depth information from the questions asked.

#### **5.4.2 Suggestions for further research**

The author would suggest that more research be carried out on Irish organisations in order to gain a greater insight into this research topic. Future research should be more in-depth and have a larger sample. The author suggests that future research should include both listed and non-listed companies and face-to-face interviews with CFO's where possible. Also, this study may be interesting in future years when the

convergence process has been completed to see what accounting treatment was chosen for R&D.

### **5.5 Summary**

In summary, while the findings in this research are not absolute, it is hoped that the findings have added valuable insight to the people mentioned in 1.5 into how R&D is accounted for by Irish listed companies. The author believes that this dissertation has identified key issues that would boost R&D in Ireland, namely the R&D tax credit, valuation of R&D and finally the Irish economy as an R&D location.

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## Appendix 1 – Names of listed companies in Ireland

1. Abbey PLC
2. Aer Lingus Group PLC
3. AGI Therapeutics PLC
4. Allied Irish Banks PLC
5. American International Group PLC
6. Aminex PLC
7. Aryzta AG
8. Bank of Ireland PLC
9. Blackrock International Land PLC
10. Boundary Capital PLC
11. CRH PLC
12. C&C Group PLC
13. Conroy Diamonds & Gold PLC
14. CPL Resources PLC
15. Datalex PLC
16. DCC PLC
17. Diageo PLC
18. Donegal Creameries PLC
19. Dragon Oil PLC
20. Elan Corporation PLC
21. FBD Holdings PLC
22. First Derivatives PLC
23. Fyffes PLC
24. Gartmore Irish Growth Fund
25. Glanbia PLC
26. Grafton Group PLC
27. Greencore Group PLC
28. ICON PLC
29. IFG Group PLC
30. Independent News and Media PLC
31. Irish Continental Group PLC

32. Irish Life & Permanent Group Holdings PLC
33. ISEQ Exchange Traded Fund PLC
34. Karelian Diamond
35. Kenmare Resources PLC
36. Kerry Group PLC
37. Kingspan Group PLC
38. McInerney Holdings PLC
39. Merrion Pharmaceuticals PLC
40. Mosney PLC
41. Norkom Group PLC
42. Oglesby & Butler PLC
43. Origin Enterprises PLC
44. Ormonde Mining PLC
45. Ovoca Gold PLC
46. Petroceltic International PLC
47. Petroneft Resources PLC
48. Prime Active Capital PLC
49. Providence Resources PLC
50. Readymix PLC
51. Real Estate Opportunities PLC
52. Ryanair Holdings PLC
53. Siteserv PLC
54. Smurfit Kappa Group PLC
55. Tesco PLC
56. Total Produce PLC
57. Tullow Oil PLC
58. TVC Holdings PLC
59. United Drug PLC
60. UTV Media PLC
61. Waterford Wedgewood PLC
62. Worldspreads Group PLC
63. Zamano PLC

## Appendix 2 – Cover letter for questionnaires

Dear Chief Financial Officer (CFO),

My name is Ann Marie Mc Ginty. I am doing a Master of Arts in Accounting in Letterkenny Institute of Technology (LYIT). I am currently carrying out research on the accounting treatment of research and development (R&D), in particular by companies quoted on the Irish stock exchange, as part of my dissertation.

As part of my research I am conducting a survey on R&D, and would be grateful if you would be willing to participate in this research. Participation in this research will involve the completion of the questionnaire enclosed. The questionnaire should take no more than 10 minutes to complete. Also, for your convenience I have enclosed a stamped-addressed envelope for returning the questionnaire.

The survey should be completed by the CFO or the individual who is in charge of the preparation of financial statements, where possible. All information gathered as part of this research will be kept completely confidential, and no individual companies or persons will be named.

It would be very helpful if this questionnaire could be completed as quickly as possible. If you have any questions about the questionnaire or my research please do not hesitate to contact me at [L00057998@lyit.ie](mailto:L00057998@lyit.ie), or alternatively you can phone me on 086-0663995.

Thank you for your co-operation. Your input is greatly appreciated.

Yours sincerely,

Ann Marie Mc Ginty

## Appendix 3 – Questionnaire

**For the purposes of this questionnaire, elements of R&D are defined as:**

- Basic Research:** Experimental or theoretical work undertaken primarily to acquire new knowledge, without any particular application or use in view.
- Applied Research:** Original investigation undertaken in order to acquire new knowledge, primarily directed towards a specific practical aim or objective.
- Development:** Systematic work, drawing on existing knowledge gained from research and practical experience that is directed to producing new materials, products and devices, to installing new processes, systems and services, or to improving substantially those already produced or installed.

### 1. General Information

#### 1.1 What position do you hold within the company?

- Managing Director
- Accountant / Financial Manager
- General Manager
- Other (Please specify)

#### 1.2 What sector does your company operate in?

- Pharmaceuticals
- Food
- Construction
- Technology
- Financing
- Other (Please specify)

**1.3 Do you think intangible assets should be shown on the Statement of Financial Position?**

Yes

No

**1.4 Do you undertake Research & Development (R&D)?**

Yes

No (Please go to Section 5)

## 2. Accounting for R&D

**2.1 If you undertake R&D which of the following is applicable to your company?**

Basic Research

Applied Research

Development only

Research & Development

**2.2 How many employees are involved in R&D?**

< 10

< 20

20 +

**2.3 On average how much does your company spend on R&D per annum?**

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- 2.4 What percentage of overall cost does this amount to?**
- Less than 10%
- Between 10% and 25%
- Between 26% and 50%
- Over 50%
- 2.5 Do you find it difficult to separate the expenditure incurred on research from development?**
- Yes
- No
- 2.6 If yes what are the difficulties?**
- The two are too closely linked
- Unsure of which components are research & which are development
- Other (Please specify) \_\_\_\_\_
- 2.7 International Accounting Standards does not allow for the capitalization of Research expenditure, but does your company capitalize development expenditure?**
- Yes
- No
- 2.8 If you do not capitalize development, is it because you do not meet the criteria to capitalize it?**
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_



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**2.9 Do you feel that the accounting standard is easy to manipulate to allow you to treat development in the way you prefer?**

Yes

No

Please provide an explanation below

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**2.10 Where is the R&D performed?**

In house only

Contracted Out only

Both in house and contracted (please specify percentage for in house)

**2.11 Where was the R&D performed?**

Within Ireland only

Outside Ireland only

Both within and outside Ireland (please specify percentage for in Ireland)

**2.12 Does your company have a dual stock market listing?**Yes No 

If yes are there any problems with accounting for R&D between these countries?

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**2.13 Did your company engage in any joint R&D projects with any of the following parties?**

## a. Other firms in Ireland

Yes No 

## b. Other firms outside Ireland

Yes No **3. Irish Tax Credit****3.1 Do you avail of the Irish R&D Tax Credit?**Yes No

**3.2 Do you think this credit is valuable to companies?**

Yes

No

Please provide explanation below

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**3.3 Do you think the tax credit is an incentive for companies to engage in additional R&D?**

Yes

No

Please provide explanation below

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**3.4 If you do not avail of the tax credit, why not?**

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**3.5 Do you think that Ireland's base year approach is a good idea or should it be more volume based like other countries?**

Yes (Good Idea)

No (Should be volume based)

Please provide explanation below

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#### 4. Valuation of R&D

**4.1 How do you value the R&D undertaken?**

Cost

Fair Value (FV)

N/A

Other (Please specify)

**4.2 If valuation is based on FV, how is this determined?**

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**4.3 Do you believe that capitalization of development has:**

A positive effect on share price

A negative effect on share price

No effect on share price

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**5. Ireland as an R&D Economy**

**5.1 In your opinion do you believe Ireland is a good place to conduct R&D?**

Yes

No

Please provide explanation below

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**5.2 What are the impediments of carrying out R&D in Ireland?**

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**5.3 What other locations do you feel are more favourable than Ireland, and why?**

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**5.4 What improvements could be made to make Ireland more R&D friendly?**

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**5.5 Do you think the current recession has had a positive or negative effect on companies conducting R&D?**

Positive

Negative

**6. Other**

**6.1 Feel free to make any additional comments on this matter.**

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Thank you for your co-operation.

## Appendix 4 – Theme sheet for interviews

**Do you think intangible assets should be shown on the balance sheet?**

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**Do many of your clients undertake research and development?**

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**International Accounting Standards does not allow for the capitalization of research expenditure, but should it allow the capitalization of development expenditure where the criteria is met?**

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**Do you feel that some companies manipulate whether or not they met the criteria of capitalization?**

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**Do you think the R&D tax credit is valuable to companies?**

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**Do you think this credit is an incentive for companies to engage in additional R&D?**

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**Do you think that Ireland's base year approach is a good idea or should it be more volume based like other countries?**

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**How should R&D be valued, e.g. cost, fair value?**

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**Do you think capitalization has any effect on share price?**

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**Is Ireland a good place to conduct R&D and why?**

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**What are the problems (if any) is there of carrying out R&D in Ireland?**

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**What other locations would be more favourable than Ireland to conduct R&D?**

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**What improvements could be made to make Ireland more R&D friendly?**

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**Do you think the current recession has any effect on companies conducting R&D, i.e. would they do more or less R&D work?**

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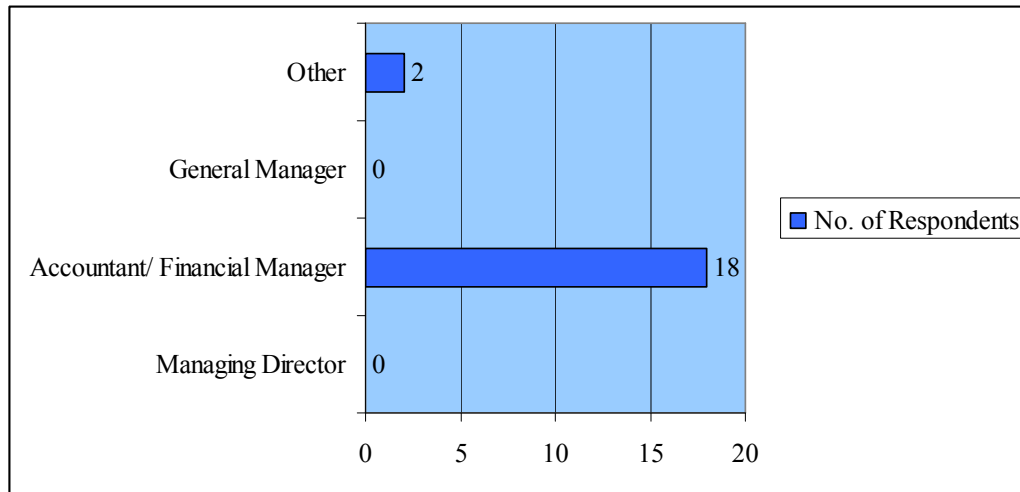
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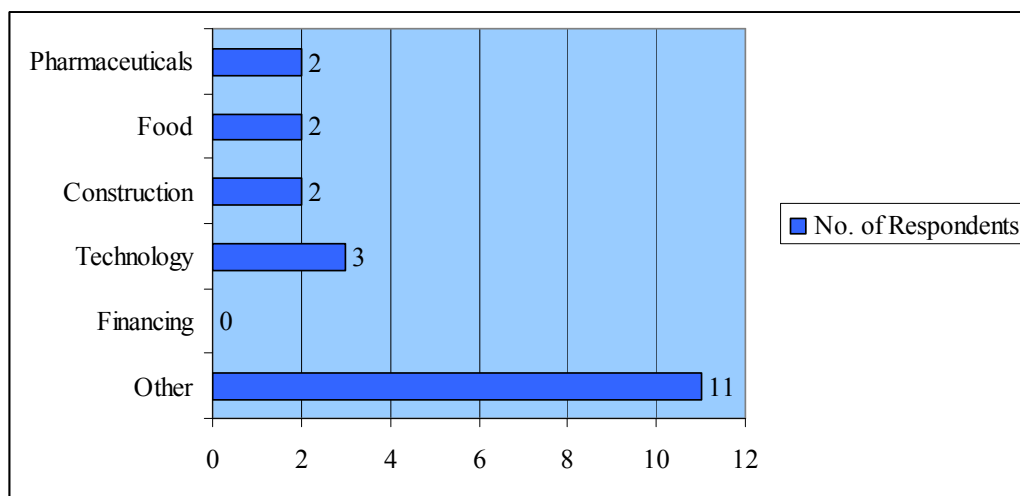
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## Appendix 5 - Results of the questionnaires

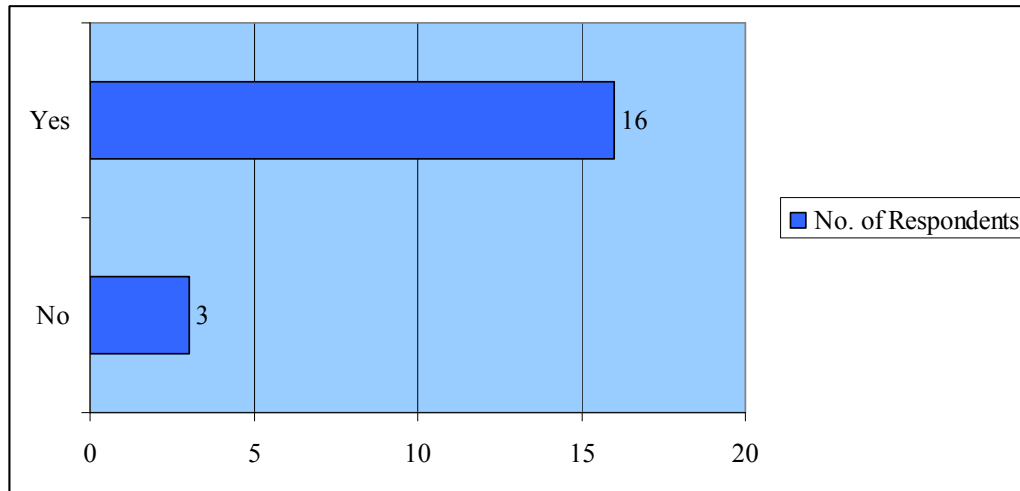
### Question 1.1 – What position do you hold in within the company?



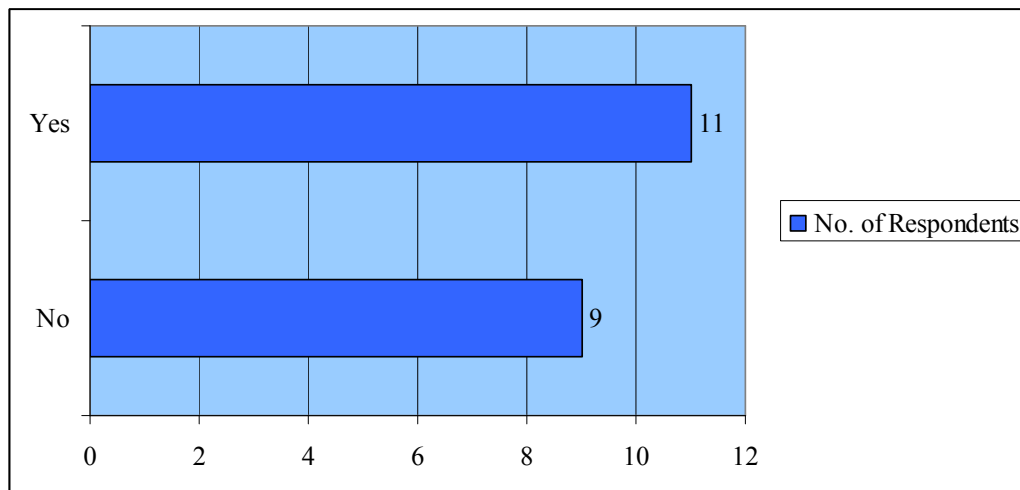
### Question 1.2 – What sector does your company operate in?



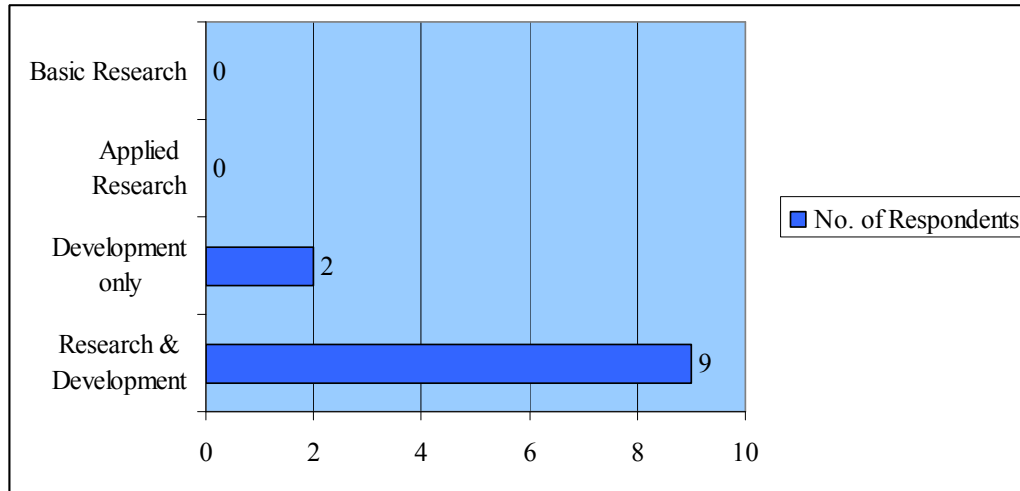
**Question 1.3 – Do you think intangible assets should be shown on the Statement of Financial Position?**



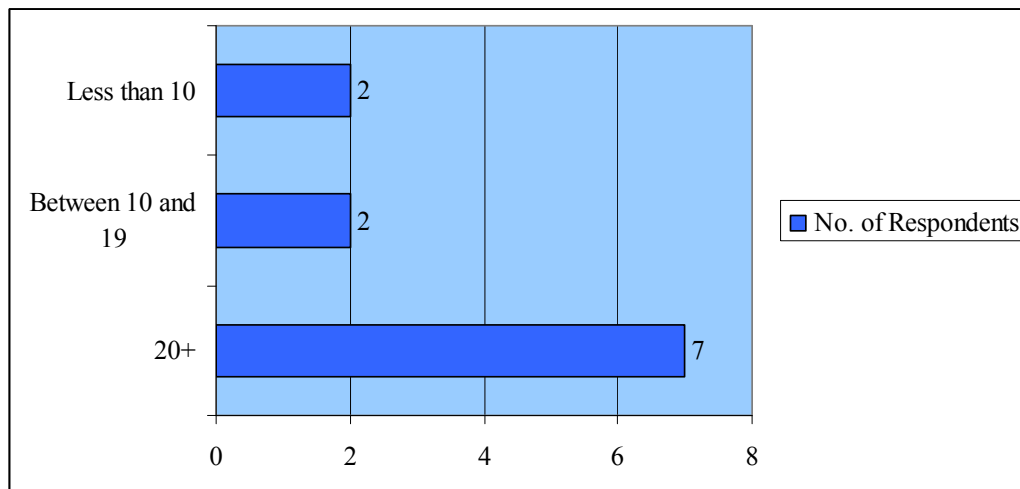
**Question 1.4 – Do you undertake Research and Development (R&D)?**



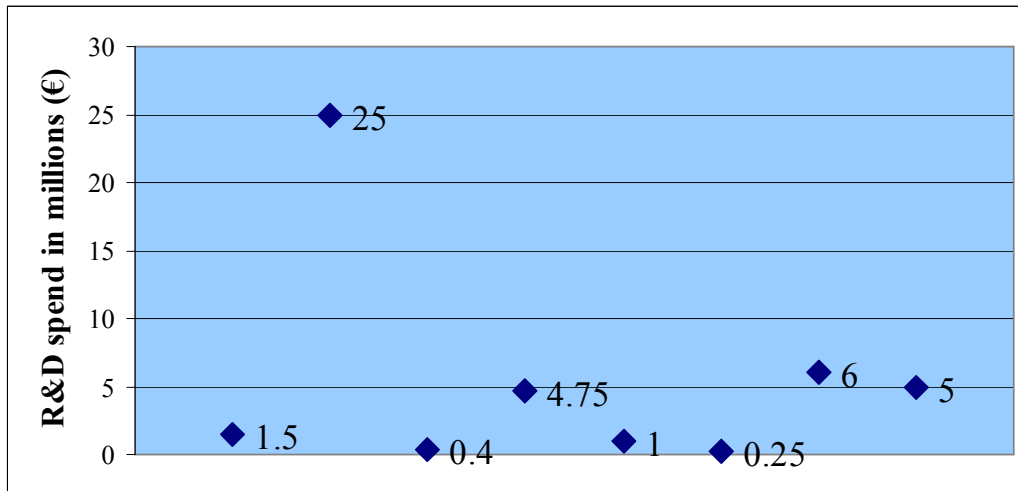
**Question 2.1 – If you undertake R&D which of the following is applicable to your company?**



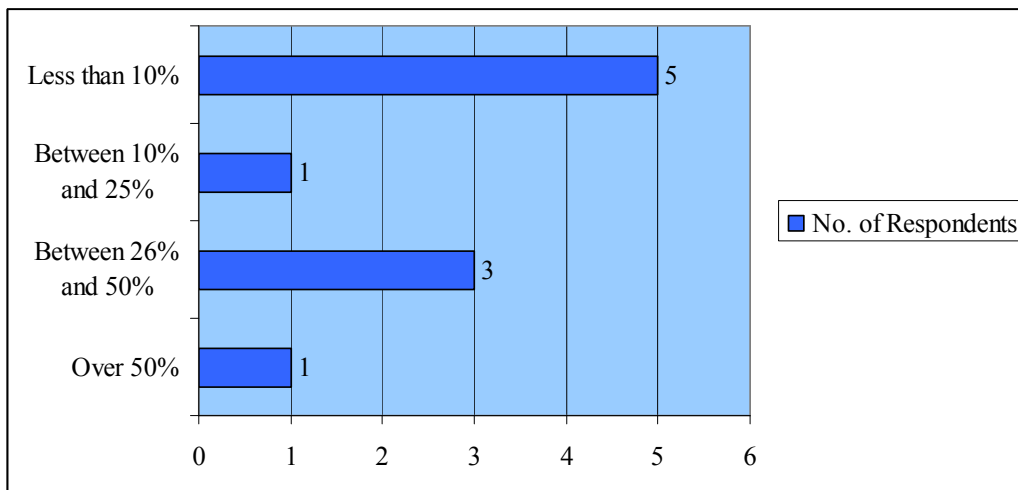
**Question 2.2 – How many employees are involved in R&D?**



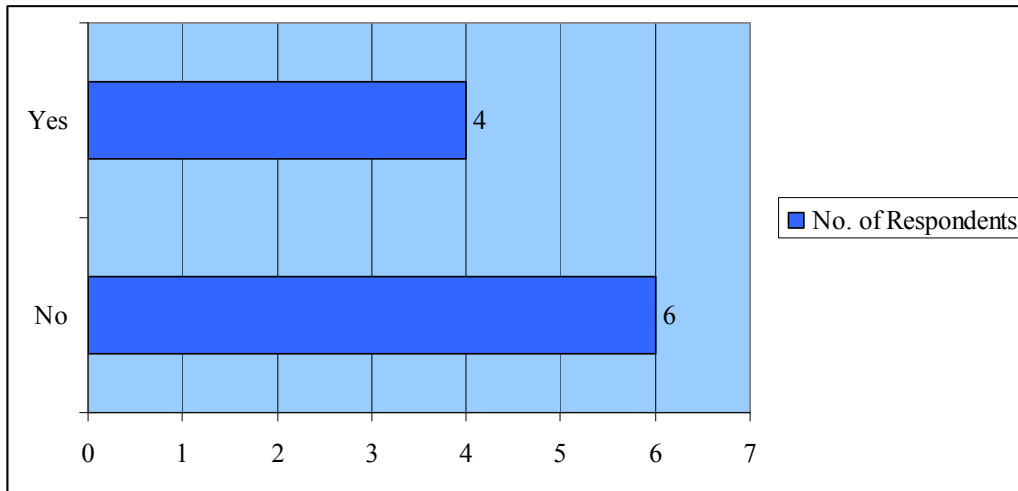
**Question 2.3 – On average how much does your company spend on R&D per annum?**



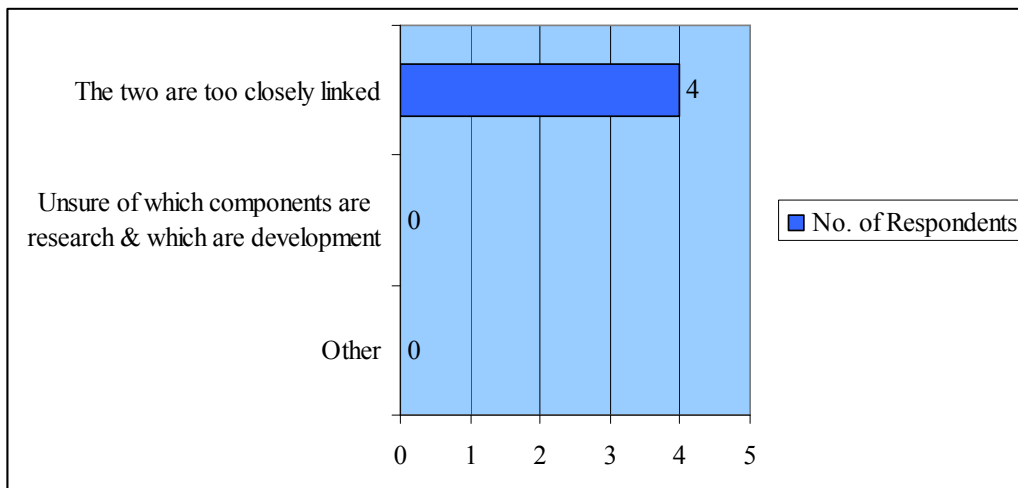
**Question 2.4 – What percentage of overall cost does this amount to?**



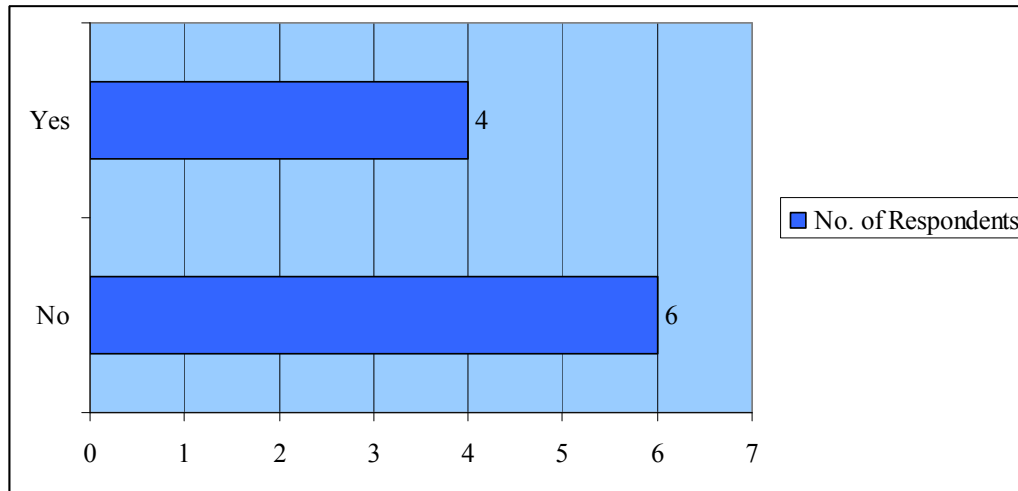
**Question 2.5 – Do you find it difficult to separate the expenditure incurred on research from development?**



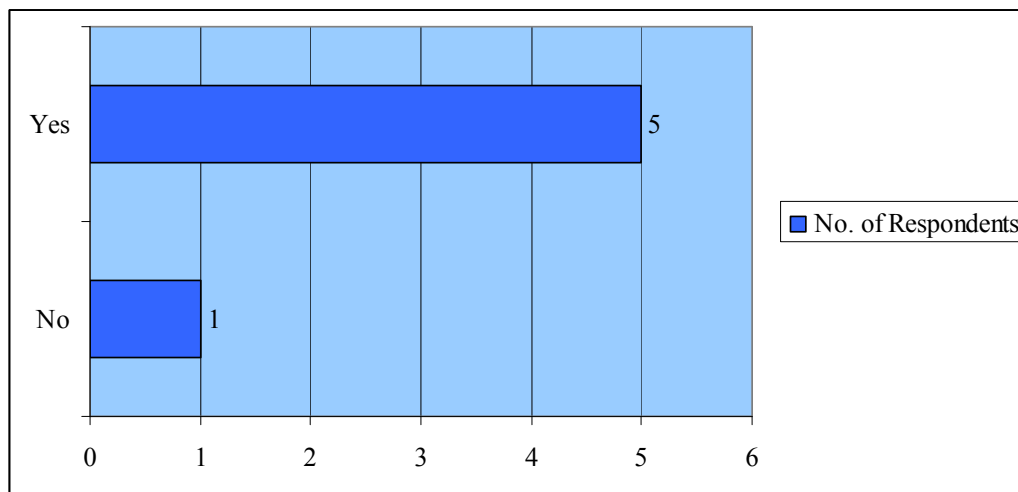
**Question 2.6 – If yes, what are the difficulties?**



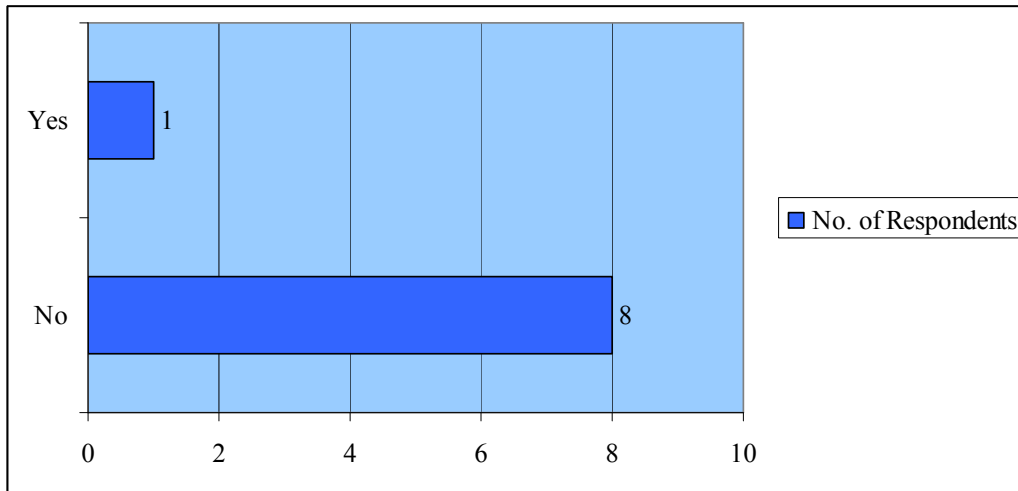
**Question 2.7 – International Accounting Standards does not allow for the capitalization of Research expenditure, but does your company capitalize development expenditure?**



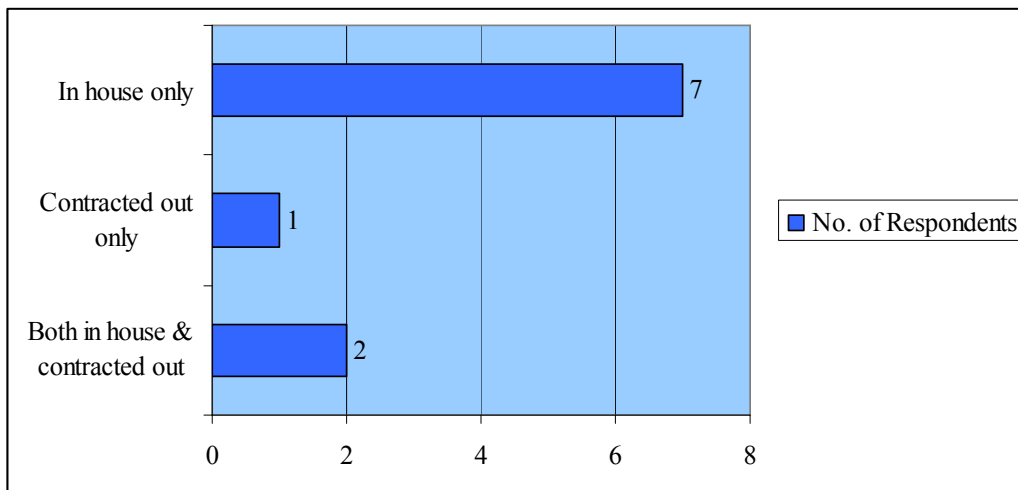
**Question 2.8 – If you do not capitalize development, is it because you do not meet the criteria to capitalize it?**



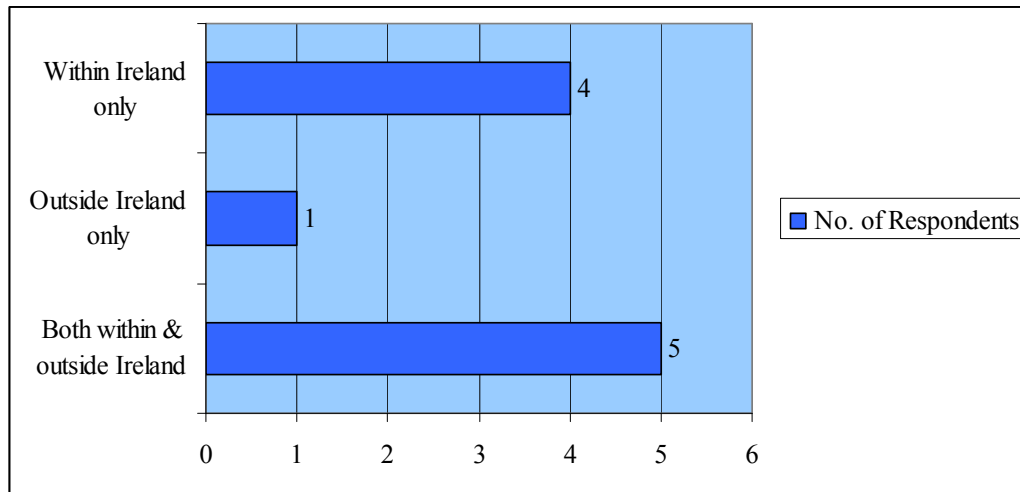
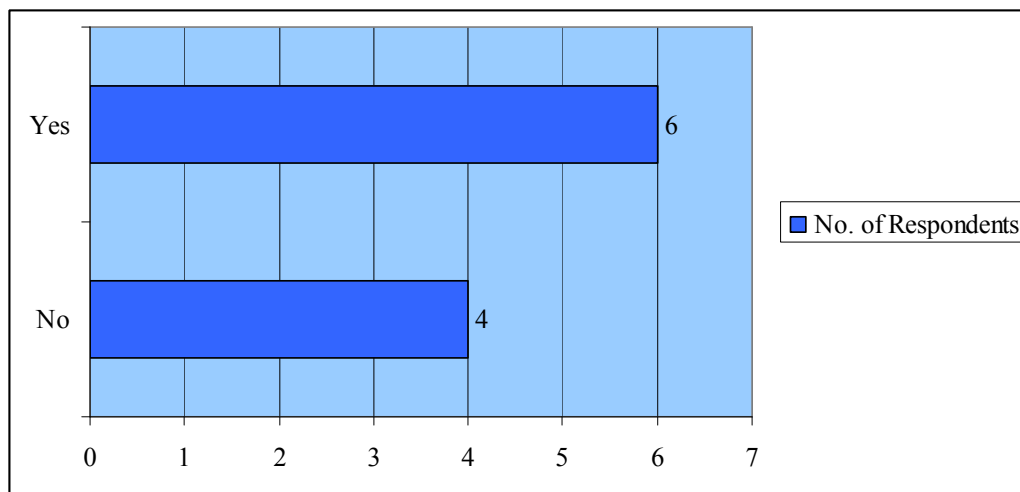
**Question 2.9 – Do you feel that the accounting standard is easy to manipulate to allow you to treat development in the way you prefer?**



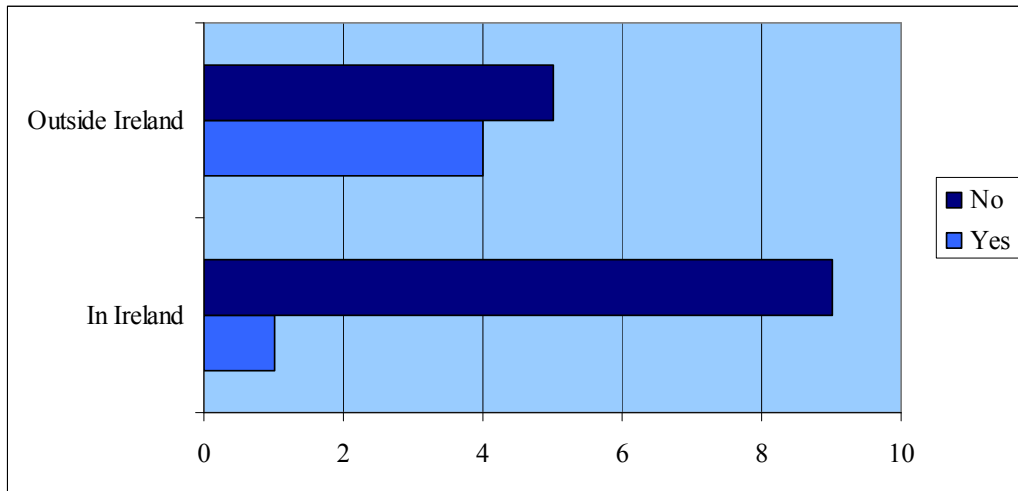
**Question 2.10 – Where is the R&D performed?**



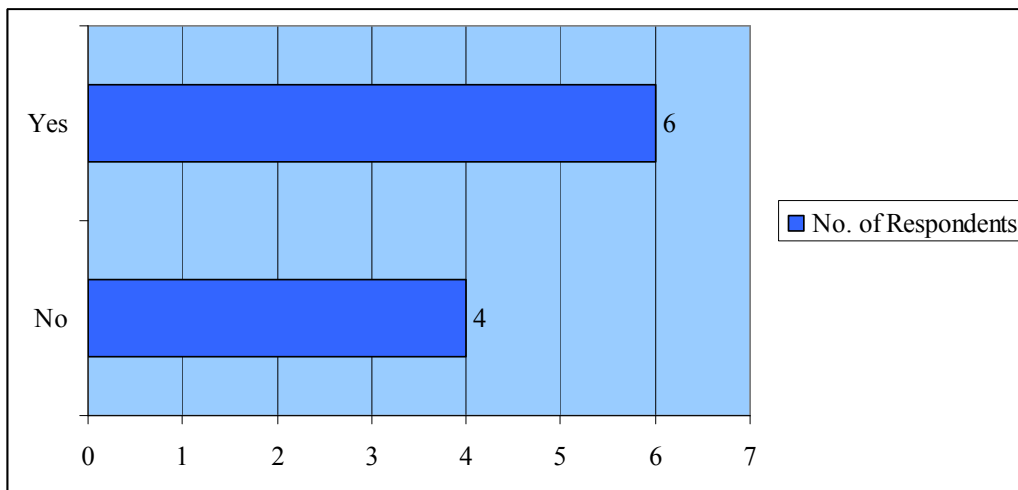


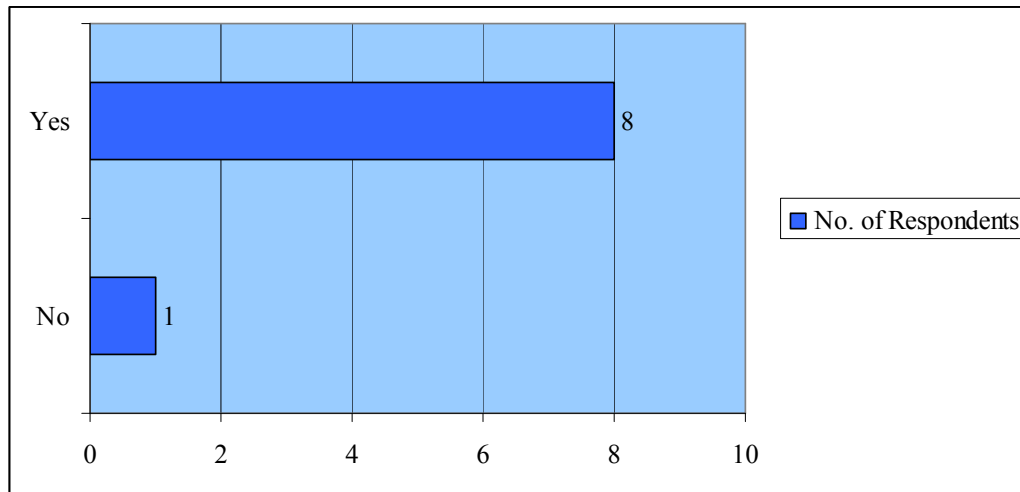
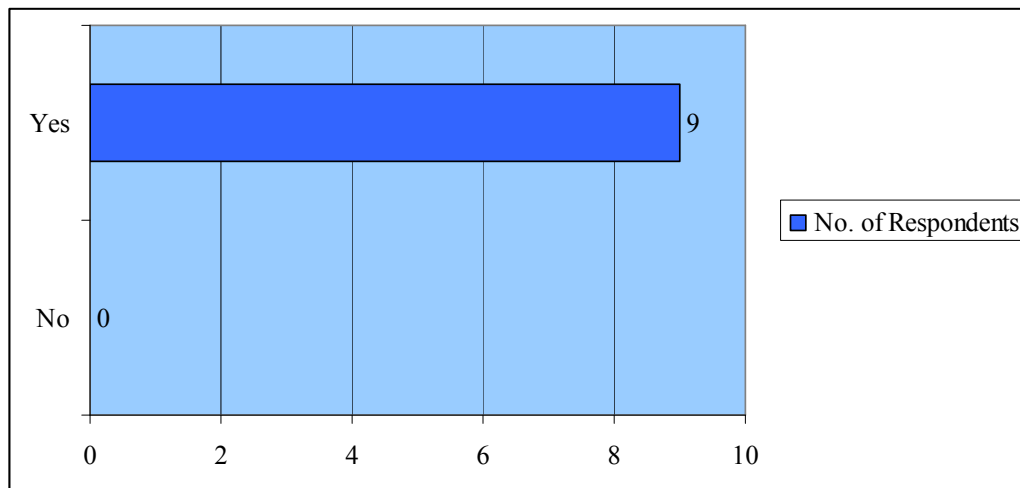
**Question 2.11 – Where was the R&D performed?****Question 2.12 – Does your company have a dual stock market listing?**

**Question 2.13 – Did your company engage in any joint R&D projects with any of the following parties?**



**Question 3.1 – Do you avail of the Irish R&D tax credit?**



**Question 3.2 – Do you think this credit is valuable to companies?****Question 3.3 – Do you think the tax credit is an incentive for companies to engage in additional R&D?**

**Question 3.4 – If you do not avail of the tax credit, why not?**

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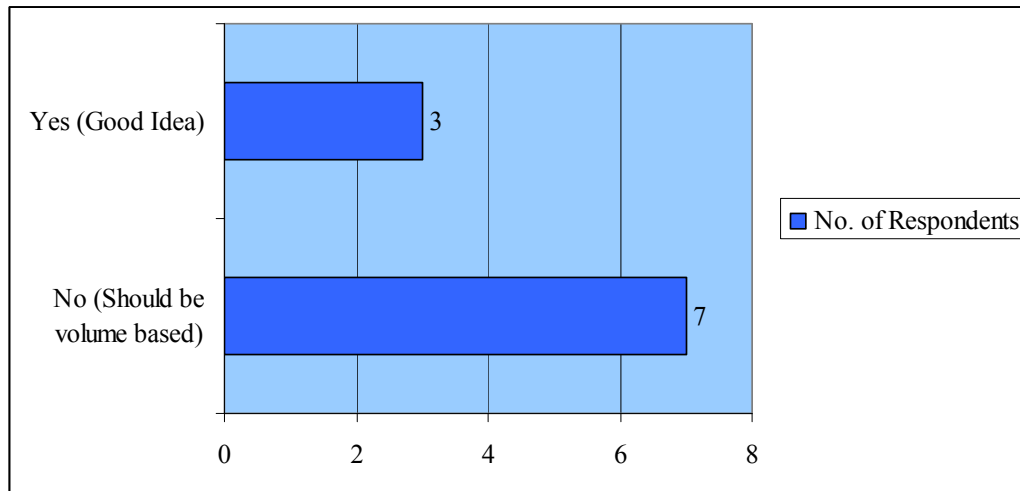


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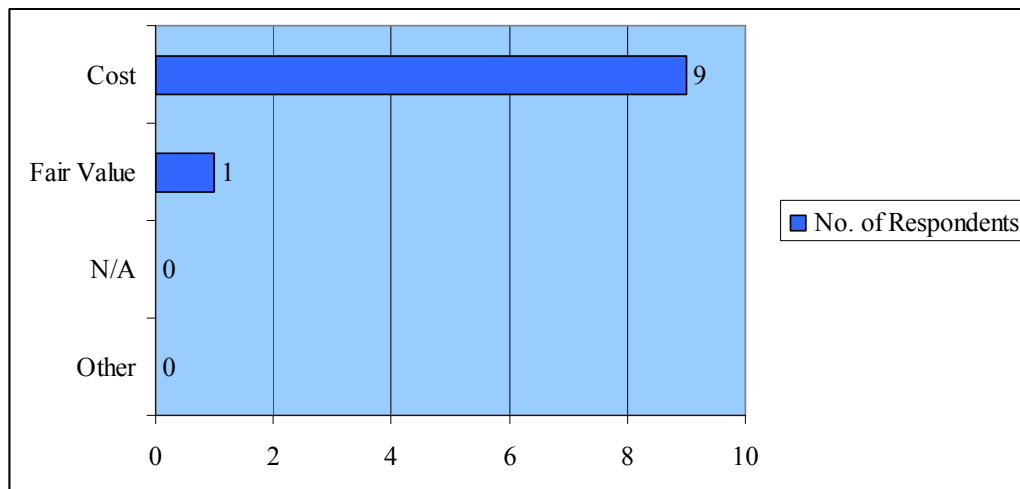


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**Question 3.5 – Do you think that Ireland’s base year approach is a good idea or should it be more volume based like other countries?**



**Question 4.1 – How do you value the R&D undertaken?**



**Question 4.2 – If valuation is based on fair value, how is this determined?**

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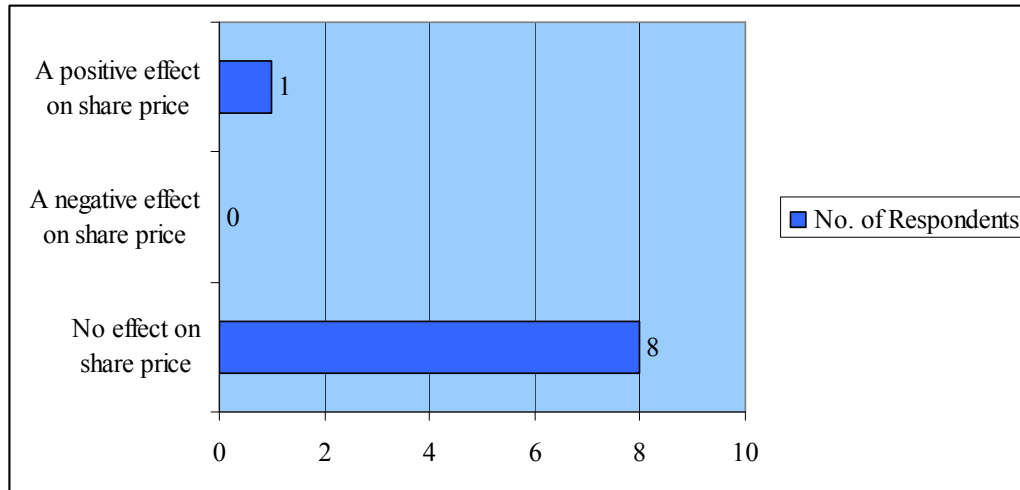


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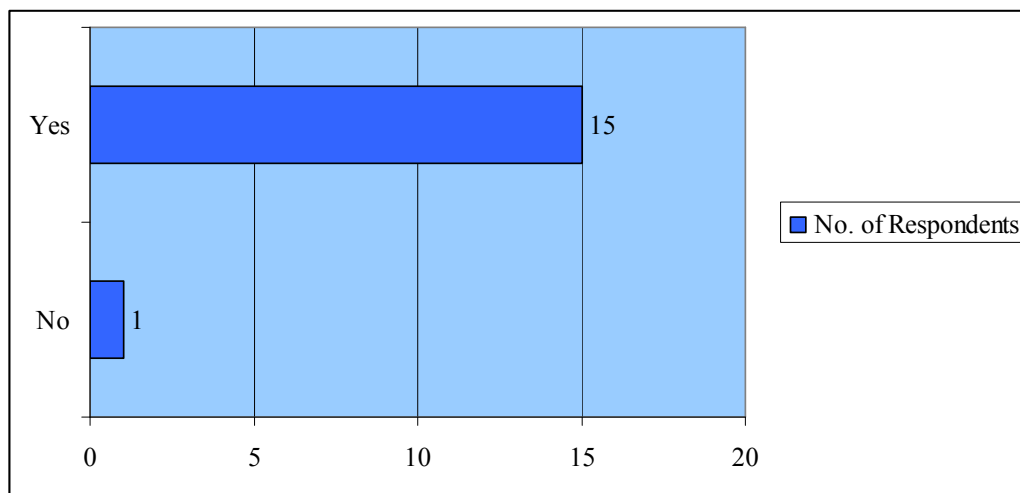


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**Question 4.3 – Do you believe that capitalization of development has:**



**Question 5.1 – In your opinion do you believe Ireland is a good place to conduct R&D?**



**Question 5.2 – What are the impediments of carrying out R&D in Ireland?**

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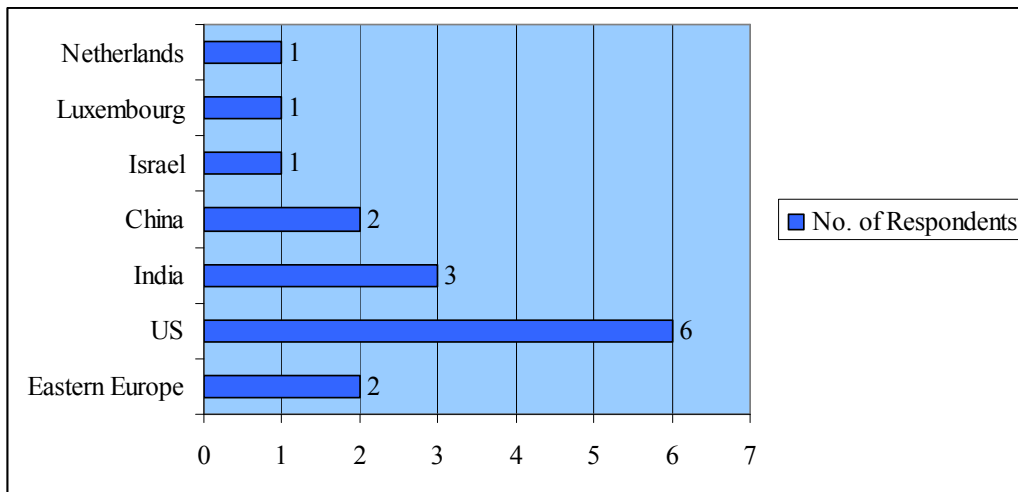


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**Question 5.3 – What other locations do you feel are more favourable than Ireland, and why?**



**Question 5.4 – What improvements could be made to make Ireland more R&D friendly?**

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**Question 5.2 – What are the impediments of carrying out R&D in Ireland?**

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**Question 5.5 – Do you think the current recession has had a positive effect on companies conducting R&D?**

