UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

A COMPARATIVE STUDY OF TAX INCENTIVES FOR RESEARCH AND DEVELOPMENT BETWEEN SOUTH AFRICA AND THE UNITED KINGDOM

by

CARL STREMPEL
Student number 22225448

Submitted in partial fulfilment of the requirements for the degree

Magister Commercii in Taxation

in the

FACULTY OF ECONOMIC AND MANAGEMENT SCIENCES

at the

UNIVERSITY OF PRETORIA

STUDY LEADER: Mr TL Steyn
CO-LEADER: Prof M Cronje

Date of submission:
2010-09-30

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

ABSTRACT

A COMPARATIVE STUDY OF TAX INCENTIVES FOR RESEARCH AND DEVELOPMENT BETWEEN SOUTH AFRICA AND THE UNITED KINGDOM

by

Carl Strempel

SUPERVISOR: Mr TL Steyn

CO-LEADER: Prof M Cronje

DEPARTMENT: TAXATION

DEGREE: MAGISTER COMMERCII

A countries innovative capacity is a fundamental building block in securing continued economic growth and performance whilst simultaneously stimulating the social needs of one's citizens. A knowledge based economy can help reduce poverty and improve the overall quality of life by promoting a strong and educated workforce whilst simultaneously driving forward scientific and technological advances.

Research and development initiatives are regarded the world over as being an important element of any economy. From a social perspective, it has been shown that research and development activities result in significant positive effects well beyond the specific technical and scientific outcomes that are achieved. As such governments have a particular interest in promoting innovation within the borders of their country as the results over time will lead to benefits for the entire population.

With the significant variations in country specific incentives the query arises as to whether the South African incentives have been designed and implemented in a manner which is aligned with international best practice. It must further be queried whether the implementation of the incentives is appropriate for the South African trade environment and whether such incentives are likely to contribute to the national spend on R&D.

This paper aims to investigate the design and implementation of South African tax incentives relating to R&D activities relative to global best practices and OECD

recommendations. As targeted research and development tax incentives were only introduced in 2006 they remain a relatively new element influencing the South African fiscus and economy. They are aimed at increasing the R&D output of business enterprises across all sectors and have been highlighted as a key component of the National Research and Development Strategy. This study draws on the experience of the United Kingdom's R&D tax incentives and aims to highlight any areas for improvement in the current South African legislation arising from this evaluation.

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

OPSOMMING

'N VERGELYKENDE STUDIE VAN BELASTINGAANSPORINGS VIR NAVORSING EN ONTWIKKELING TUSSEN SUID-AFRIKA EN DIE VERENIGDE KONINKRYK

deur

Carl Strempel

STUDIELEIER: Mnr TL Steyn

MEDESTUDIELEIER: Prof M Cronje

DEPARTEMENT: BELASTING

GRAAD: MAGISTER COMMERCII

'n Land se kapasiteit om te verander is 'n noodsaaklike vereiste om aanhoudende ekonomiese groei en prestasie te verseker. 'n Ekonomie gebaseer op kennis kan help teen die bestryding van armoede en die algehele verbetering van die lewenskwaliteit van die bevolking deur 'n meer opgevoede werkerskorps en wetenskaplike en tegnologiese bevordering aan te moedig.

Navorsings- en ontwikkelingsinisiatiewe word wêreldwyd as 'n belangrike element van 'n ekonomie aanskou. Uit 'n sosiale perspektief blyk dit dat navorsings- en ontwikkelingsaktiwiteite wel betekenisvolle positiewe uitwerkings het, wat die spesifieke tegniese en wetenskaplike kennis wat reeds verwerf is, ver ootref. Omdat 'n regering belangstelling toon in die bevordering van nuwigheid binne die grense van hul eie land, kan die land se bevolking baat hierby vind.

As gevolg van betekenisvolle verskille in 'n land se aansporings,moet gekyk word of die ontwikkeling en instelling van Suid-Afrikaanse aansporings aanpas by internasionale neigings. Daar moet ook verder gekyk word of die instelling van hierdie aansporings geskik is vir die huidige Suid-Afrikaanse sakebedryf en of dit 'n bydrae tot die uitgawes op nasionale navorsings- en ontwikkelingsinisiatiewe lewer.

Hierdie studie beoog om die uitleg van Suid-Afrikaanse belastingsaansporings teen opsigte van navorsings- en ontwikkelingsaktiwiteite met wêreldwye neigings en OECD aanbevelings te vergelyk.

Aangesien aansporings ten opsige van navorsing en ontwikkeling eers in 2006 ingestel is bly dit ‘n relatiewe nuwe element wat die Suid-Afrikaanse fiskus en ekonomie beïnvloed. Dit het ten doel om die uitgawes op navorsing en ontwikkeling van besighede in alle sektore te vermeerder en word uitgesonder as die sleutelkomponent van die nasionale navorsings- en ontwikkelingsstrategie.

Hierdie studie is op die ondervindinge van die Verenigde Koninkryk se belastings aansporingsgebaseer word en sal gebiede uitwys waarin moontlike verbeteringe van Suid-Afrikaanse wetgewing van belang mag wees.

TABLE OF CONTENTS

LIST OF ABBREVIATIONS

Abbreviation	Meaning
OECD	Organisation for Economic Co-operation and Development
R&D	Research and Development
SARS	South African Revenue Services
SME	Small and Medium Enterprises
GDP	Gross Domestic Product
S&T	Science and Technology
GERD	Gross Domestic Expenditure on Research and Development
BERD	Business Enterprise Expenditure on Research and Development
FTE	Full Time Equivalent
DTI	Department of Trade and Industry
UK	United Kingdom
HMRC	Her Majesties Revenue and Custom Services
CBI	Confederation of British Industry

A COMPARATIVE STUDY OF TAX INCENTIVES FOR RESEARCH AND DEVELOPMENT BETWEEN SOUTH AFRICA AND THE UNITED KINGDOM

CHAPTER 1

INTRODUCTION AND PROBLEM STATEMENT

1.1 BACKGROUND INFORMATION

The greatest developments of the 21st century have come as a result of innovative thinkers exploring the boundaries of what is currently possible. Innovative scientific and technological research initiatives are a key component in improving the collective knowledge, efficiency and productivity of a population whilst simultaneously offering monetary rewards to the owners of such improved processes, knowledge and products.

From a social perspective, it has been shown that research and development (R&D) activities result in significant positive effects well beyond the specific technical and developmental outcomes that are achieved (OECD, 2009:12).

Within a South African context, both the government and the private sector have a responsibility to promote research and development activities in order to generate wealth and ensure that the economy remains competitive on the global stage (Government of the Republic of South Africa, 2002:3). Although research has shown that the private returns to research and development (R&D) remain positive, what is important from government's perspective is that the social returns are regarded as being even greater and as such governments have a particular interest in promoting innovation within the borders of their country (Hall, Mairesse & Mohnen 2009:33).

As the social spill over effects lead to increased knowledge diffusion amongst the general population, increased overall economic growth and the development of a highly educated work force the long term benefits are strongly aligned with the South African policy objectives of poverty reduction and improved standards of living for all .

Johansson and Lööf (2008:22) demonstrate that companies engaged in continuous research and development strategies exhibit higher levels of productivity and profitability compared to companies with haphazard or no R&D investment programmes. There is, therefore, an implied incentive for most privately funded firms to pursue a certain level of innovation that will give them the competitive edge within their market place. However, leaving the private sector solely responsible for performing the bulk of all research and development activities within the economy will lead to distortions in the type of research that is pursued as well as a likely underinvestment in the quantum of research being performed (Hall & Van Reenen 1999:1).

Firstly, research and development activities are by nature risky and not all undertakings will necessarily provide any additional innovation or a return on investment that can be accurately measured at the beginning of a new project. Secondly, innovation activities are generally accepted to have greater spill over effects for society as a whole when compared to the return that the business itself will enjoy from the innovation. As such, a firms' investment in R&D activities will be targeted at product related research activities with a view to short term profitability rather than basic or fundamental research that may result in improved collective knowledge or a change in the basic understanding of scientific concepts. Consequently privately funded firms will under invest in R&D activities compared to what is socially desirable. This represents a market failure which requires adjustment through government intervention.

The two main options that any government has in addressing this market failure are an increase in the direct funding of targeted R&D activities and the promotion of tax incentives to promote increased private sector investment in R&D.

A country's R&D intensity is commonly measured in terms of the percentage of R&D spend over the gross domestic product (GDP) of that country. The EU is committed to increasing R&D intensity to 3% of GDP by 2010 and has set the target of boosting business financed R&D to two thirds of all R&D expenditure (Van Pottelsberghe, Nysten & Megally 2003:3).

According to the country statistical profiles released by the Organisation for Economic Co-operation and Development (OECD), the 2009 percentage of R&D spending to GDP averaged across the OECD member countries totalled 2,26%. In comparison South Africa's R&D spend to GDP for the same period totalled 0,95% (OECD, 2009a).

Furthermore, fiscal incentives varying in their nature and application have been established by 21 OECD countries in order to stimulate increases in R&D activities. In one form or another fiscal incentives reduce the cost of the R&D activities thereby increasing the return on investment for business funded R&D (OECD, 2009:78).

In 2002, the South African National Research and Development Strategy addressed the need for fiscal incentives to promote private sector R&D spending. Subsequently the government decided to introduce revised legislation in 2006 enabling improved tax incentives for enterprises carrying out privately funded R&D activities.

Whether the revised legislation will lead to increased private expenditure on R&D and consequently an increase in the South African R&D spend to GDP remains to be seen. Although many other governments across the globe incentivise private expenditure on R&D by means of fiscal incentives, these incentives vary substantially over time and from country to country (Hall & Van Reenen, 1999:3).

With the significant variations in country specific incentives the query arises as to whether the South African incentives have been designed and implemented in a manner which is aligned with international best practice. It must further be queried whether the implementation of these incentives is appropriate for the South African trade environment and whether such incentives are likely to contribute to the national spend on R&D.

The mandate presented by the National Research and Development Strategy was to develop incentives to strengthen the attractiveness and affordability of R&D in South Africa relative to countries with which South Africa trades and competes (Government of the Republic of South Africa, 2002:71).

As such, it is of interest to determine how the South African R&D tax incentives compare with those developed by a well established foreign trading partner and whether there are any lessons which could be learnt from such a partner in order to improve the design of the fiscal incentives as offered for R&D activities in South Africa.

1.2 PROBLEM STATEMENT

South Africa's R&D spend to GDP is significantly lower than the OECD average and below the target as set by the National Research and Development Strategy. The improved tax incentives which have been only recently introduced may or may not be designed in such a manner so as to effectively promote increased business expenditure on R&D. It must be questioned whether the design aspects of the tax incentives are in alignment with international best practice and indeed suitable for the South African environment. In contrast the United Kingdom enjoys a relatively high spend of R&D to GDP and remains one of South Africa's largest trading partners. Therefore, it is of interest to determine whether elements of their fiscal design principles are contributing to these higher levels of private expenditure on R&D and whether there is anything to be learnt from their experience.

1.3 PURPOSE STATEMENT

The purpose of this study is to compare the South African tax legislation relating to R&D incentives to those in the United Kingdom and evaluate whether elements of the United Kingdom's design principles could benefit current South African tax policy. The theoretical framework as publicised by the Organisation for Economic Co-operation and Development will be used as underpin for performing the evaluation between the two countries.

1.4 RESEARCH OBJECTIVES

The research objectives of this study are

- to discuss the R&D tax incentives in South Africa in terms of the criteria laid out by the OECD guidelines;

- to discuss the R&D tax incentives in the United Kingdom in terms of the criteria laid out by the OECD guidelines;
- to compare the R&D tax incentives in South Africa with those of the United Kingdom using the theoretical framework of the OECD as underpin; and
- to highlight the potential lessons that South African policy makers could learn from the design and implementation of the UK policy measures.

1.5 IMPORTANCE AND BENEFITS OF THE STUDY

Targeted research and development tax incentives were only introduced in 2006 and as such remain a relatively new element influencing the South African fiscus and economy. They are aimed at increasing the R&D output of business enterprises across all sectors and have been highlighted as a key component of the National Research and Development Strategy. With relatively little experience to draw on it will be beneficial to evaluate the design of the current legislation against the OECD design principles and the legislation as is currently effective in the United Kingdom. This should help to determine significant shortfalls between the theoretical model as promulgated by the OECD and South African legislation. Additionally the study will highlight any areas for improvement in the current legislation which may benefit from the experience and lessons of the United Kingdom.

An extended literature review will ensure as much of the available literature as possible is researched, thus providing quality and practical information. A detailed literature review is considered the most appropriate research tool as the details of United Kingdom's experience will first need to be determined and evaluated. As incentives have been available in the UK for much longer than in South Africa, the comparison may provide insight into the path forward for South African policy makers.

1.6 DELINEATION AND LIMITATIONS

The study does not aim to provide a comprehensive comparison of R&D incentives across all OECD member countries but is rather focused on the design principles of the current

tax incentives in South Africa. Furthermore, the study aims to critically analyse and compare the various income tax allowances legislated in South Africa with the income tax allowances as promulgated in the United Kingdom using only the design criteria as contained in the OECD framework.

The evaluation does not cover any direct funding methods that are in use by both the governments of the United Kingdom and South Africa to further supplement business expenditure on R&D. These additional initiatives will need to be evaluated separately.

1.7 UNDERLYING ASSUMPTIONS AND DEFINITIONS

Gross expenditure on R&D (GERD) as a percentage of Gross Domestic Product (GDP) is used as the main aggregate for international comparison of R&D expenditures and represents a country's domestic related R&D expenditure for a given year. This is in line with OECD guidelines and is assumed as a fair measure of R&D performance throughout this paper.

Research and development is defined in terms of the Frascati manual as: *"[c]reative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications"* (Frascati, 2002:30). Reference to R&D is made in line with this definition as provided by the OECD.

1.8 OVERVIEW OF REMAINING CHAPTERS

The remainder of this document will explore the underlying merits of using tax incentives to promote business related R&D activities. The design criteria as published by the OECD will then be evaluated and the reasons for utilising the framework for purposes of the comparison will be explored.

Thereafter, the current R&D environment in South Africa will be examined and the R&D tax incentives currently in place identified. The legislation as promulgated along with the interpretation notes subsequently released by the South African Revenue Services

(SARS) will be evaluated against the OECD guidelines derived from international best practice.

The policies of the United Kingdom (UK) will then be indentified and evaluated in terms of the same guidelines.

Following this, the two tax systems will be critically evaluated using the theoretical framework as underpin and shortcomings of the South African system will be highlighted. Where potential shortcomings have been identified improvements based on the experience of the UK model will be considered for applicability to the South African tax policies.

CHAPTER 2

OVERVIEW OF FISCAL INCENTIVES AND THE OECD FRAMEWORK

2.1 INTRODUCTION

In this chapter the effectiveness of utilising tax incentives to promote private expenditure on research and development is explored. It is considered whether fiscal incentives are regarded a worthwhile tool in stimulating increased private expenditure on R&D and as such whether the South African government rightfully pursued the implementation of such incentives. The origins of the OECD guidelines are then discussed along with the reasoning for subjecting the South African fiscal incentives to the OECD framework. Thereafter the key elements of the framework affecting the country specific evaluations are discussed.

2.2 EFFECTIVENESS OF TAX INCENTIVES

A question which continues to attract high levels of academic interest is whether fiscal incentives are indeed effective in stimulating increased business expenditure on R&D and consequently whether they are worthwhile introducing. The economic argument is that tax incentives essentially reduce the cost of privately funded R&D and as such increase the return on investment in such undertakings, thereby promoting increased interest and investment by the private sector (OECD, 2009:78).

Hall and Van Reenen (1999:27) find substantial evidence that tax incentives have an effect on the levels of R&D performed. They estimate that a tax elasticity of around unity is a fair measure and conclude that countries will increasingly turn to the tax system in order to promote increased business expenditure on R&D (Hall & Van Reenen, 1999:27).

These findings were replicated in an evaluation of R&D tax credits over a panel of nine countries using data from 1979 – 1997. The study found that fiscal provisions do indeed influence R&D intensity positively and concluded that they are effective in promoting increased R&D activities (Bloom, Griffith & Van Reenen, 2002:21).

Additionally, in an empirical analysis of policy and non policy factors that influence R&D intensity, Falk (2006:545) concludes that tax incentives for R&D have a substantial positive impact on business R&D spending regardless of the estimation techniques used. The study focused on a panel of OECD countries with data sets spanning 1980 – 2002 and concluded that a 1% reduction in the price of R&D leads directly to a 0.9% increase in the amount of long term R&D spending (Falk, 2006:545).

These studies indicate that when developed and implemented properly tax incentives can have a significant positive effect on private sector R&D spending. A key reason for utilising fiscal incentives above direct funding initiatives lies in the non discriminatory nature of R&D incentives towards different R&D sectors (OECD, 2008a:78). This is evidenced by the extensive use of tax incentives within member countries of the OECD. In 2008, 21 OECD member countries had implemented R&D tax incentives ranging from an immediate write off of current R&D expenditures to tax credits and accelerated depreciation allowances for equipment utilised in R&D undertakings (OECD, 2009:78). The findings of the 2008 OECD Technology and Industry Outlook revealed that governments are showing a tendency of shifting away from direct funding to indirect funding means and that recently several OECD member countries have adopted new tax incentives or adapted the existing incentives in order to make them more generous (OECD, 2008a:80).

The OECD report does, however, raise the concern that the increasing generosity of global R&D incentives may lie in countries seeking foreign direct investment by means of tax competition and that this fact reinforces the need to continuously evaluate the effectiveness of tax incentives in order to ensure that they are contributing to the desired long term R&D goals of the country (OECD, 2008a:80).

2.2 DISCUSSION OF THE OECD FRAMEWORK

Even though it has been demonstrated that fiscal incentives are generally effective in stimulating increased private sector spending on R&D the observation remains that innovation policies vary substantially across countries and over time (OECD 2008:235). Tax incentives that are deemed appropriate in one country may not be suitable for that of

another due to differing national objectives and economic conditions. It is with this in mind that an objective set of criteria for evaluating the South African tax policy is required.

The OECD has previously conducted a study comparing the design features and generosity of R&D incentives across OECD member countries. As a direct result of the study the OECD published a set of design criteria for discussion and consideration.

Through the development of these design criteria it was thought that member countries could learn from each other what works best to achieve various policy goals (OECD, 2002). The design criteria were established on the basis of international trends covering the most pertinent factors and differences affecting the OECD member countries. Thus the criteria are considered to be a sound basis for evaluating and covering the most important factors of any R&D tax incentive.

As South Africa does not form part of the OECD, the country specific allowances were not included in the initial evaluation and it is considered appropriate to subject the South African tax policies to the OECD guidelines. Further, it is anticipated that the evaluation of the South African and UK's incentives in terms of these criteria will provide a detailed basis for identifying the most pertinent issues and differences affecting the tax incentives in these countries.

The guidelines of the OECD framework suggest that tax incentives relating to R&D activities be evaluated in terms of the country specific requirements as well as the following key areas:

- the definition of qualifying research and development;
- the administration burden which will be introduced in order to claim and manage the proposed incentive;
- whether the incentive should take the form of a tax credit or tax allowance;
- whether the incentive should be volume based or incremental;
- whether targeted incentives should be promoted;
- the consideration of appropriate anti avoidance provisions; and
- the consideration of international factors affecting the incentive (OECD, 2002:4).

The key elements of the design criteria and the motivation for their inclusion in the OECD framework are discussed below:

2.2.1 Definition of R&D

In terms of the Frascati Manual published by the OECD, research and development is defined as: *"[c]reative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications"* (Frascati, 2002:30).

Due to the fact that the definition per the Frascati Manual is extremely wide and would tend to include any number of activities contributing to the advancement of the stock of knowledge of man, it is no surprise that for purposes of devising R&D tax incentives most OECD countries define R&D activities more restrictively than the OECD Frascati Manual (OECD, 2002:29).

According to the OECD guidelines, tax incentives should be developed with a view towards clarity and consistency. A key component of achieving these objectives lie in the development and adoption of a clear definition of what constitutes R&D for purposes of a tax incentive as well as a clear indication of what constitutes qualifying expenditure on R&D activities (OECD, 2002:27). OECD evaluations show that R&D incentives schemes which change frequently or are overly complex act as a deterrent to R&D investment (OECD, 2002: 27).

The research gap being addressed also needs to be considered carefully. The definition of research can be applied to basic or applied research depending on the demands of the economy (OECD, 2002: 29). According to the OECD guidelines the demands of government policy and economic drivers will determine whether a country will target blue sky research or focus more on applied R&D directed towards practical aims and products. However, the one key feature that is considered applicable by most countries is that there must be some form of scientific or technological (S&T) investigation in order for there to be qualifying R&D activities (OECD, 2002: 29).

2.2.2 Administration

According to the OECD guidelines, long term corporate planning should be encouraged by promoting certainty in the R&D tax reliefs and providing streamlined forms, procedures and information procedures in order to enhance the accessibility of R&D tax incentives. The premise is that there must be sufficient clarity, consistency and predictability in order for any enterprise to make an investment decision partly on the basis of available tax incentives. (OECD, 2002: 27.)

The key factors that the OECD determined as a hindrance to promoting the accessibility of R&D activities lie in the ease with which companies can comply with the requirements of claiming the allowance and whether the allowance itself is clear and easily understood.

2.2.3 Form of incentive

A decision must be made in providing R&D tax credits or R&D tax allowances. These different forms of government interventions were found to have different effects on large and small firms (OECD, 2002: 27).

The OECD guideline indicates that the preference of a taxpayer for a tax credit or allowance depends on the effective marginal tax rate of the entity. However, both tax credits and tax allowances lower the overall tax liability of firms. The study found smaller firms more likely to benefit from tax allowances where there may not be substantial taxable income available to utilise the credit. (OECD, 2002: 27.)

The report further emphasises that some international firms argue in favour of credits as these can be applied directly into the R&D budget of a firm. This increases the visibility of the credit to decision makers and may have a greater effect on additional R&D decision making (OECD, 2002: 27). The report concludes that over time tax credits have become more popular as a fiscal incentive method within OECD countries than tax allowances (OECD, 2002: 27).

2.2.4 R&D volume or increment

The administrative and financial implications of applying R&D incentives based on volumes or incremental levels above certain volumes needs to be considered carefully.

Volume based approaches that allow for the deduction of all qualifying R&D activities require less administration and are easier for both companies and governments to implement. However, the granting of tax allowances for R&D activities that would have been performed anyway can be very expensive for governments. (OECD, 2002: 28.) Incremental incentives are useful in addressing the issue of windfall gains for corporations but do create the complex issue of determining base levels of R&D in order to determine the increment (OECD, 2002: 16).

Several methods of determining the base period for calculating incremental increases in research expenditures have been determined and are used in some OECD countries. These methods include:

- the rolling-average base: This method determines the base period as the rolling average of R&D expenditure of a firm over a number of proceeding years. The method has previously been used in France and Austria;
- the fixed base: The base period is taken as the R&D expenditure in a specific year and consequently updated for inflation; and
- the sales base: The base period is taken as a ratio of R&D expenditure to a company's sales. When the R&D expenditure of that company as a ratio to sales exceeds the level as determined in the base year, the company becomes entitled to the incremental allowance (OECD, 2002:16). This method has been adopted previously in the United States of America. (Bloom, Griffith & Klemm, 2001: 15).

Although incremental policies used to be popular in many OECD countries, the difficulties of establishing and administering the base values for R&D activities resulted in the majority of countries moving towards purely volume based incentives. Some countries, such as Australia and Austria, have moved towards a combination of the methods in order to promote additional research over and above the recorded norm. (OECD, 2002:17.)

2.2.5 Targeted incentives

Many countries target small firms and co-operative public private research in order to achieve greater spill over effects. The policy of the country in question needs to be considered when deciding whether targeted incentives are necessary. Furthermore, consideration should be given to any specific sectors or fields of research that should be promoted by national policy (OECD, 2002: 28).

2.2.6 Avoidance provisions

The risk of firms claiming unwarranted tax reliefs must be carefully weighed up as these can result in significant reductions to tax collections without an appropriate increase in the levels of privately funded R&D. Special provisions can be applied to mitigate these risks or approval for projects can be forced upon applicants (OECD, 2002: 30).

2.2.7 International considerations

The ability of the country to attract multinational research and investment should be carefully considered when developing R&D incentives as well as the benefits accruing to the sponsoring government (OECD, 2002:30).

Requirements identified in some OECD countries include provisions that the R&D must be carried out within the country which provides the tax incentive or that a certain number of local research staff, equipment and facilities be utilised in the R&D work performed (OECD, 2002:30).

2.3 CONCLUSION

Internationally tax incentives have been proven an effective means of promoting increased levels of expenditure on privately funded R&D. As such the development of tax incentives in South Africa is likely to have a positive impact on the levels of privately funded R&D provided the incentives are designed and implemented appropriately.

Trends in international activities have shown that the nature of the incentives needs to be evaluated against the backdrop of the country specific requirements and that there is no single recommendation for all countries. As the criteria of the OECD framework draw on the experience of international developments they are deemed to be an appropriate basis for evaluating the design criteria of the South African and UK tax policies and should highlight the most pertinent differences between these tax policies.

CHAPTER 3

EVALUATION OF THE SOUTH AFRICAN R&D ENVIRONMENT

3.1 INTRODUCTION

The following chapter serves to provide an overview of the historical involvement of government in promoting research and development activities in South Africa and highlight the country specific needs which have been identified in developing and implementing the current fiscal incentives. The specific South African tax incentives that have been identified are then critically evaluated in line with the key components of the OECD framework.

3.2 OVERVIEW OF THE SOUTH AFRICAN R&D ENVIRONMENT

Pre 1994 the South African government focused heavily on research and development activities contributing strongly to the military dominance of the subcontinent and energy self sufficiency. With the introduction of the new government these areas fell away as key focus points and the country required a new national strategy in order to promote economic growth and prosperity for the entire population. (Government of the Republic of South Africa, 2002:19.)

During July 2002 cabinet reviewed and accepted the National Research and Development Strategy which represents the way forward for government regarding publicly funded science and technology pursuits and for creating an enabling environment for the National System of Innovation (Government of the Republic of South Africa, 2002:19).

The revised R&D strategy was developed based on three vital factors:

- innovation;
- the creation of an effective government science and technology system; and
- human resource development and transformation (Government of the Republic of South Africa, 2002:16).

The strategy aimed to re-focus the South African approach to R&D by promoting a clear understanding of the short comings of the existing Science and Technology environment and in doing so establish a new forward looking path for improved policy intervention by government (Government of the Republic of South Africa, 2002:81).

An overwhelming need for an increase in the national investment in R&D activities was identified so as to improve South Africa's position in terms of global competitiveness (Government of the Republic of South Africa, 2002:17). An indicator of a country's competitive potential is widely regarded as the total level of R&D expenditure to GDP and remains an important measure for the Department of Trade and Industry (Blankley & Kahn, 2005:151).

According to the country statistical profiles released by the OECD, the 2009 percentage of R&D spend to GDP averaged across the OECD member countries totalled 2,26%. In comparison South Africa's R&D spend to GDP for the same period totalled 0,95% (OECD, 2009a). This is a substantial increase from the base level of 0,7% as was reflected in the 2002 National Research and Development Strategy (Government of the Republic of South Africa, 2002:21).

Nevertheless the target of a R&D spend to GDP of 1% as set by the Department of Trade and Industry has, to date, not been achieved. In order to grow competitively within the global environment, the South African innovation system will need to be continuously revised and where necessary appropriately adjusted to incorporate the latest international developments (Department of Science and Technology, 2008: 2).

Part of the National Strategy on Research and Development focused on identifying the key hindrances preventing the implementation of successful national science and technology policy initiatives (Government of the Republic of South Africa, 2002:20). The weaknesses identified continue to drive policy initiatives by various government sectors and remain relevant to understanding the R&D environment specific to South Africa. The key barriers affecting the development and implementation of fiscal incentives to promote private spending on R&D activities are summarised below:

3.2.1 Strategic considerations

Critical technology areas were identified as being potential long term security risks should the appropriate funding not be secured to maintain and develop these areas (Government of the Republic of South Africa, 2002:17).

Within the context of the innovation system, the strategic areas aim at promoting two significant high level goals, namely, quality of life and wealth creation (Government of the Republic of South Africa, 2002:25). This was thought to be achievable by focusing on key technological missions allowing for accelerated innovation. The current missions accepted as critical from government's standpoint include:

- poverty reduction with a focus on the demonstration and diffusion of technologies in order to impact quality of life and enhance delivery;
- key technology platforms with a focus on knowledge intensive new industries, including biotechnology and information and communication technology;
- a focus on advanced manufacturing processes; and
- the leveraging of resource-based industries to promote the development of new knowledge based industries, thereby, mobilising the potential power of existing sectors (Government of the Republic of South Africa, 2002:42).

It is important to bear these policy objectives in mind when evaluating the design aspects of the South African tax incentives. As the critical missions need to be addressed in order to promote the competitiveness of the South African economy it stands to reason that they should receive particular focus in terms of the design aspects of all South African legislation impacting on scientific and technological research and development.

3.2.2 Human resource development

South Africa has, in the past, experienced a noticeable decline of suitably qualified and experienced human resources within the scientific and technological disciplines. The 2002 National Research and Development Strategy highlighted that the key research infrastructure composed of people nearing retirement age (Government of the Republic of

South Africa, 2002:2). The development of suitably qualified research staff therefore remains a top priority within the context of the South African R&D strategy.

Arguably an increase in the level of privately funded R&D activities will increase the demand for qualified research staff and over time promote individuals within the economy to pursue qualifications in the scientific and technological fields.

3.2.3 Declining research and development in the private sector

One of the key focus areas was noted to be declining research and development in the private sector (Government of the Republic of South Africa, 2002:21). As a means of partly addressing this negative tendency the strategy proposed that the Department of Trade and Industry, in conjunction with SARS, be given the mandate to explore the introduction of tax incentives in order to promote increased business R&D expenditure over and above the existing government grants available at the time (Government of the Republic of South Africa, 2002:71).

The mandate given to the Department of Trade and Industry, SARS and the Treasury by the National Research and Development Strategy was to develop incentives to strengthen the attractiveness and affordability of R&D in South Africa relative to countries with which South Africa trades and competes (Government of the Republic of South Africa, 2002:71).

In 2006 section 11D was introduced into the Income Tax Act 58 of 1962 to encourage private-sector investment in scientific or technological research and development. The section replaced the old research and development regime in terms of section 11B and offered significantly improved incentives to engage in R&D activities (SARS, 2009:3).

The scientific or technological research and development program or tax-incentive scheme offered an indirect approach by government to increase national scientific and technological research and development expenditure whilst complementing the government’s direct expenditure on scientific or technological research and development activities.

Section 11D of the Income Tax Act is the only section in the Income Tax Act directly aimed at incentivising the private funding of R&D activities. It came into effect on 02 November 2006 and grants an allowance for expenditure actually incurred by a taxpayer for activities undertaken directly for an R&D purpose when carrying on a trade in the Republic of South Africa (Income Tax Act, 2010).

In terms of the section 11D(1) of the Income Tax Act a 150% deduction of operating expenditure incurred for an R&D purpose is allowed as a deduction as well as an accelerated depreciation deduction in terms of section 11D(2) for capital expenditure incurred on buildings, machinery, plant, implements, utensils or articles used for R&D undertakings.

The allowance in terms of section 11D of the Income Tax Act represents an allowance against the normal taxable income of an entity and certain exclusions apply to the type of research that applies. Currently no provisions have been made for alternative or increased tax incentives for small and medium sized enterprises and the section applies to all qualifying taxpayers. The incentive as described above is now subjected to a detailed evaluation in terms of the OECD guidelines discussed earlier.

3.3 EVALUATION OF TAX POLICY AGAINST THE OECD GUIDELINES

3.3.1 Definition of R&D

Within the South African context allowances in respect of scientific or technological research and development will be granted in accordance with section 11D(1) of the Income Tax Act when expenditure is actually incurred within the Republic of South Africa directly for a qualifying research and development purpose.

Section 11D(1) defines qualifying research and development as:

- research that leads to the discovery of novel, practical and non obvious information; or

- the devising, developing or creating of an invention, design or computer programme as well as the knowledge necessary to use such development.

The research must further be of a scientific or technological nature and must be used or intended to be used by the taxpayer in the production of income or for the purpose of deriving income.

A degree of interpretation may be required in determining the intended meaning of certain words in the definition not specifically defined in section 11D or elsewhere in the Income Tax Act. This needs to be done in light of the interpretations provided by SARS, the common understanding of the terms with reference to international interpretation and potentially court rulings. In this regard the South African Revenue Services has released Interpretation Note 50 providing guidance to taxpayers on the intended meanings contained in section 11D(1). The elements of the definition are evaluated in more detail below.

The expenditure must be actually incurred. This principle has been validated by court rulings and an expense is considered to be actually incurred once a taxpayer has incurred an unconditional legal liability and is committed contractually to the expense (*Edgars Stores Ltd v CIR,* 1988 (3) SA 876).

The research and development must occur within the Republic of South Africa. The term Republic is defined in section 1 of the Income Tax Act as the territory of the Republic of South Africa, its territorial waters, contiguous zone and the continental shelf. This requirement, therefore, specifically excludes any R&D activities that are performed outside of South Africa, regardless of where the work is being funded (SARS, 2009:11).

The activities must constitute qualifying research and development. In essence this requires either a discovery of information or the development of a design, invention or computer programme as more restrictively defined in section 11D of the Income Tax Act (SARS, 2009:5).

To date there is no case law to support the meaning of qualifying research and development. As such this requirement is evaluated in light of the guidelines provided by SARS and the common understanding of the terminology on hand.

In terms of Interpretation Note 50 (SARS, 2009:6) “discovery” implies that there is a pre-existing state not previously available in the public domain whereas the term “*developing*” implies the creation of something completely new. The term *“novel”* implies that the discovery be unique, original and different from anything else already discovered anywhere in the world and “non obvious” is viewed by SARS as being “*inventive*” as defined in the Patents Act 57 of 1978.

The terms “design” “invention” and “computer programme” are defined directly in the Income Tax Act by reference to other South African legislation (SARS, 2009:5). Therefore any development work performed in the creation or development of a “design” “invention” or “computer programme” needs to be scrutinised further in terms of the specific Acts in which the qualifying criteria are actually defined.

Section 11D of the Income Tax Act defines a qualifying design as one which can be registered in terms of the Designs Act. A design is in turn defined in section 1 of the Designs Act 195 of 1993 as being either a functional or an aesthetic design.

An aesthetic design by definition has features which are judged purely by sight. A functional design is a configuration which has arisen out of necessity in order to allow the functioning of an item to which the design forms a part. In order to qualify for registration in terms of the Designs Act, a design must be new and original in terms of an aesthetic design and new and not commonplace in the case of a functional design. Section 14(2) of the Designs Act defines the term “new” as being different or not forming part of matter available in the public domain or a matter already registered within the Republic or elsewhere in the world.

Inventions will qualify in terms of section 11D(1) of the Income Tax Act provided they meet the definition as contained in the Patents Act and are capable of being patented, whether

such patent is actually registered or not (SARS, 2009:6). In order for an invention to meet the definition in terms of the Patents Act it must be a patentable invention as detailed in section 25(1) of the Patents Act. This requires the invention to be new, involve an inventive step and be capable of use or application in industry, trade or for agricultural purposes.

Section 25(2) of the Patents Act specifically excludes any scientific theories, mathematical methods, literary musical and artistic works, aesthetic creations, means of performing mental acts, playing games and performing business acts as well as the presentation of information and therefore any such activities will be excluded from the possibility of receiving increased tax relief in terms of section 11D of the Income Tax Act (SARS 2009:7).

In terms of section 11D(1) of the Income Tax Act computer programmes are specifically referred to in the definition of qualifying research and development and will qualify for tax relief if the definition as laid out in the Copyright Act 98 of 1978 is met. In terms of section 1(x) the Copyright Act, a computer programme is defined as a set of direct or indirect instructions that instruct the operation of a computer to bring about a certain result.

What is apparent from the above is that section 11D of the income tax Act relies not only on the interpretation of wording specific to the Income Tax Act but also opens itself up to interpretation of the other legislation in which the majority of the definitions are defined. Additionally once the criteria for a qualifying research and development purpose have been established the tax payer then needs to determine whether the research is of a scientific or technological nature before a potential claim can be pursued (SARS, 2009:5).

This may prove an onerous requirement as the term *'scientific or technological'* is not defined in the Income Tax Act or interpretation note as released by SARS. Interpretation Note 50 (SARS, 2009:12), only indicates that the words *'scientific or technological*' can be interpreted widely but that the anti avoidance provisions as contained in section 11D(5) of the Income Tax Act must be evaluated before a claim for relief is pursued. Vital from a taxpayer's perspective is that the onus remains on the claimant to prove that, at the outset of the R&D activity, it was the intention to resolve some or other scientific or technological

uncertainty (Sibanda & Zantwijk, 2007:1). According to Sibanda and Zantwijk (2007:1) this requires the ability to identify and document the particular scientific or technological gap to be addressed at or before the commencement date of the R&D activity. As such some degree of subjective interpretation will likely be required in order to comply with this requirement.

Interpretation Note 50 (SARS 2009:6), emphasises that the general advancement of scientific or technological knowledge is not sufficient in itself to claim the increased tax incentive. In order to qualify for the increased relief the taxpayer will need to meet the definition of a qualifying R&D purpose and prove that the advancement is of a scientific or technological nature.

Additionally the following element of section 11D(1) of the Income Tax Act also needs to be complied with before a claim can be pursued.

The expenditure must be incurred directly for an R&D purpose. Interpretation Note 50 (SARS, 2009:5) indicates that the R&D work must be undertaken directly for one of the specified R&D purposes. This implies that any activities performed indirectly with relation to an R&D project would not be eligible for deduction. In order to determine the precise meaning of *'direct'* it is useful to examine the ruling as laid down by the court in *SIR v Consolidated Citrus Estates Ltd*. Through the examination of the facts relating to this case, the court indicated that there should be a connection between the incurring of the expense and the object for which the expense was incurred. SARS has subsequently incorporated this understanding into the guidance for R&D allowances (SARS, 2009:12).

Noteworthy for taxpayers is that the incorporation of this understanding into the R&D relief means that indirect costs such as overhead expenditure and support staff to R&D projects may only be claimed to the extent that the costs directly affect the research and development work performed and an apportionment of partially qualifying costs may be required (SARS, 2009:11).

Interpretation Note 50 (SARS, 2009:35) details a number of activities that SARS has already indicated would be unacceptable based on its interpretation of the term direct.

Some of the key exclusions listed in Annexure B of Interpretation Note 50 are provided below:

- the costs of legal, financial and marketing activities associated with the R&D work or the resultant products;
- the costs of administration and general support, such as the human resource costs associated with supporting R&D staff and the repair and maintenance of equipment utilised in the R&D activities;
- the costs of information support services such as preparing the R&D findings report;
- the costs of training people in order to conduct and support R&D activities.
- research and data collection required in order to conceive new scientific or technological testing, surveys or sampling methodologies;
- phase IV clinical trials; and
- feasibility studies to determine the direction of an R&D activity (SARS, 2009:35).

As such it appears that the South African definition of qualifying R&D is no different from most OECD countries in that it is defined more restrictively than the Frascati Manual. In order to qualify for tax relief research and development must be directed at a closed list of specific activities as was described above (SARS, 2009:5).

The OECD guidelines recommend that the development of a clear definition as well as clear guidelines as to what constitutes qualifying R&D expenditure is key to promoting clarity and consistency in the R&D tax incentive, thereby promoting taxpayers to adopt the incentive (OECD, 2002:27).

It must be queried how successful the South African government has been in this regard. In order to meet the deduction requirements of section 11D of the Income Tax Act a taxpayer must navigate not only the tax legislation but also the numerous other legislation which impacts directly on the applicability of the tax legislation. This complicates the tax legislation and introduces a level of uncertainty relating to the interpretation of terminology within the different Acts. Companies without access to dedicated legal and accounting

advice may be discouraged by the potential cost implications of performing such analysis, even if their business could qualify for the deduction.

Although Interpretation Note 50 increases the clarity of the tax legislation by providing additional insight and practical examples it appears that key terminology such as *'scientific or technological'* has not been adequately defined leaving the legislation open to a fair degree of subjective interpretation. This could lead to expensive court interventions where significant discrepancies arise between the interpretations of tax payers and the South African Revenue Service. Furthermore the absence of such clarity may prevent certain companies from pursuing legitimate claims and reduce the uptake of the allowance until greater certainty is obtained.

Lastly, the inclusion of the requirement that the expenditure be directly attributable places some significant restrictions on the costs which may be claimed for qualifying R&D activities. In so doing it complicates the section for industry as traditional accounting and reporting systems will need to be re-evaluated and adapted so as to ensure that only appropriate amounts are presented for the income tax allowance. Traditional management views on the actual costs directly related to an R&D project may well vary from the restricted model that SARS is promoting.

In this regard it is of particular interest to determine how the UK R&D relief model has dealt with defining and restricting certain qualifying expenditure and how, over time, industry has reacted to the government rulings. As the definition of research and development is a key component to any fiscal R&D incentive scheme an evaluation to the UK approach may reveal significant learning experiences for South African policy makers.

3.3.2 Administration

The OECD design criteria specify that key hindrances promoting the accessibility of R&D activities lie in the ease with which companies can comply with the requirements of claiming the allowance and whether the allowance itself is clear and easily understood.

3.3.2.1 Administrative process

In terms of section 11D of the Income Tax Act the R&D allowance is claimed as a normal deduction for income tax purposes. This means that it forms part and parcel of the required annual tax calculation and the details of work performed are recorded and stored as part of the annual tax submission process.

Furthermore, it is necessary to complete and submit a prescribed R&D tax incentive form to the Department of Science and Technology within 6 months of the financial year end of the taxpayer (Department of Science and Technology, 2008:15).

Other than the two requirements mentioned above, it is not necessary to perform any other administrative processes in order to be eligible for the incentive. There is currently no requirement for firms to apply for the right to claim the allowance nor is it necessary to submit an application of the proposed research for approval prior to commencing with the research.

3.3.2.2 Clarity and consistency

The first draft of section 11D of the Income Tax Act was released for commentary during 2006 and has been evolving ever since. The initial draft was proposed in October 2006, passed into law in November 2006, amended in June 2007 and again in September and November 2007. (Sibanda & Zantwijk 2007:1.)

On the 28th of August 2009, the South African Revenue service also introduced Interpretation Note 50 providing guidance on the legislation contained in section 11D (SARS, 2009:1). This is a positive step which is likely to improve the taxpayers understanding of the limitations of section 11D and the actual intentions of the South African Revenue Services in promoting the allowance.

Although some changes have been made to the legislation since its inception, the fundamentals and type of allowance have not changed. This illustrates the teething problems which can be anticipated with any new piece of legislation. The annual report

which needs to be compiled by the Department of Science and Technology (2008:3) reporting on the benefits of the R&D tax incentives scheme had to be delayed for the 2006/2007 period, due to the non submission of forms and slow uptake by firms in the initial stages. This serves as an indicator that firms were uncertain of the procedures to be followed post implementation of the allowance.

Furthermore, as there is no requirement for taxpayers to validate the scope of any research they intend to conduct and the analysis of the definition of research and development has highlighted potential areas of uncertainty, this could lead to the situation whereby allowances are claimed for inappropriate work performed. Currently SARS has no structures in place to assist tax payers in assessing the validity of their claims prior to submission and this may delay the validation of R&D claims significantly.

Simply put, the R&D incentive as detailed in section 11D of the Income Tax Act is a relatively new tool available to taxpayers in order to reduce the cost of investing in R&D activities. The OECD (2002: 27) guidelines indicate that R&D tax incentives are more effective when provided over the long term. Invariably the longer the allowances remain available to South African taxpayers the greater the understanding of the incentives will become and the more likely they are to be correctly implemented.

The experience of the UK may offer increased insight into how these administrative activities could be enhanced over time.

3.3.3 Form of tax incentive

The South African specific environment must be considered. The National Research and Development Strategy aims to increase general research by all sectors within the economy (Government of the Republic of South Africa, 2002:70).

South Africa opted for the introduction of tax allowances rather than tax credits. This appears at first glance to be in line with the intention of government to increase the accessibility of all firms to the R&D incentive and in doing so increase the degree and value of work being performed within the country. The increased costs of administering tax

credits could also have been a key consideration when deciding to implement the current system of tax allowances. However, in terms of international best practice this may not be the optimum means of incentivising R&D in the private sector (OECD, 2002:27).

As there appears to be some debate as to the preference of industry for tax allowances or tax credits it will be useful to examine the detail of the UK R&D tax incentives for variations to the South African approach. In performing this comparison key efficiencies with the UK R&D relief system may be identified which could be incorporated into South African tax policy.

3.3.4 R&D volume or increment

Within the South African context a major obstacle affecting the introduction of an incremental allowance lies in the unreliable availability of historical information relating to research and development work performed by the private sector. According to Blankley and Kahn (2005:156) there was no statutory process to determine and track R&D activity in business enterprises prior to the implementation of the R&D survey in 2001/2002.

When exploring the history of R&D surveys in South Africa it becomes apparent that during the time period from 1991 to 2002 appropriate surveys on R&D activities became irregular and haphazard. No surveys were performed for the 1995/1996 period, 1999/2000 or 2000/2001 periods. Furthermore the surveys were performed by a range of different departments including, in some periods, private consultants (Blankley & Kahn, 2005:152).

The methods that are most popularly used in OECD countries in order to determine the base level of R&D expenditure all require a sound declaration of R&D activities and expenditures from participating R&D companies. Without accurate data it would be an impossible task to set an incremental allowance that is appropriate for the participating firms.

Furthermore many firms draw the information required for statistical purposes from their accounting data. There is the inherent risk that such data has been classified differently from what is considered allowable in terms of the definition of qualifying R&D. Basing any

form of future allowance on such data would likely result in irregularities and a level of unfairness for many firms.

It, therefore, appears that the only appropriate means for South Africa was to proceed with a volume based approach. However, as certain OECD studies have shown this is an option which can be re-evaluated at a later date should the allowance prove to have a significantly negative impact on the tax base without a corresponding increase in the recorded R&D activity in the country.

3.3.5 Targeted incentives

The South African National Research and Development Strategy outlined strategic guidelines to target poverty reduction (through the diffusion of technological innovation), advanced manufacturing as well as promoting key technology missions (including biotechnology and information communication technology) (Government of the Republic of South Africa, 2002:42).

The definition of qualifying research and development in section 11D promotes the development of inventions, information and computer technologies by directing the qualifying R&D expenditure to a closed list of R&D activities (SARS, 2009: 5). This leads to the exclusion of certain fields, such as the social sciences, and is in line with promoting the critical sectors as identified by the National Research and Development Strategy. It is also noteworthy that there are no special provisions targeting small to medium sized enterprises as can be found in countries such as Italy, the UK, Canada and Korea (OECD, 2002:17).

Many OECD countries have recognised a specific need for targeting and have implemented legislation to further promote small and medium sized enterprises by means of tax allowances and credits. As smaller firms are less likely to make investment decisions relating to R&D due to technical, financial and information-related constraints it is believed that they require additional incentivising in order to promote innovation in this sector of the economy. (OECD, 2002: 17.)

However, the definition of what qualifies as a small to medium sized enterprise differs from country to country and the distinguishing factors should be borne in mind. From an international perspective there is no single definition of what type or size of business qualifies as a small to medium sized enterprise (Smulders, 2006:93). Therefore, the allowance as devised by the South African government must again be considered in light of the National Strategy on Research and Development. In terms of this strategy the goal is to increase the general level of research and development and accessibility of all firms to the tax allowances. As the current legislation is available to all companies regardless of their size this appears to be in line with the government strategy.

The availability of targeted incentives in the UK will be examined and comparisons will be drawn to the South African policies within the context of the different trading environments. This may reveal worthwhile areas for South African policy makers to consider additional targeted incentives.

3.3.6 Avoidance provisions

The South African legislation does not seek approval for R&D projects and coupled with a potential level of uncertainty as to what may constitute appropriate research it remains a definitive risk that unwarranted tax relief may be claimed. In order to curb this risk some OECD countries require government departments to approve the research prior to it being accepted as eligible for any tax incentives.

The difficulty with this approach is that it prolongs the administration process and adds additional costs to each eligible research project. A fairly advanced reporting system is required in order to facilitate the process and firms are likely to take a longer time to respond favourably to such incentives (OECD, 2002: 30). This would seem inappropriate in light of the National Research and Development Strategy which aims to broaden the overall levels of research and development in the private sector within a relatively short time frame whilst still developing the necessary structures needed to monitor and appropriately diffuse the innovation developed.

Other avoidance provisions include restricting the nature or type of research that is considered applicable by government institutions.

Section 11D (5) of the Income Tax Act incorporates certain excluded activities that will preclude the tax payer from claiming the 150% super deduction or capital allowances in terms of the R&D relief even if the definition of qualifying R&D is met. The R&D allowances cannot be claimed if the R&D activities relate to one of the following:

- exploration or prospecting;
- management or internal business processes;
- trademarks;
- social sciences or humanities; and
- market research, sales or marketing promotion.

These exclusions restrict certain economic sectors and sciences from receiving any additional relief under the provisions of section 11D of the Income Tax Act. This is likely a pro active attempt to align the tax incentives with the objectives of the National Research and Development Strategy without adversely affecting the existing tax base of the country. The avoidance provisions add yet another layer of complexity and uncertainty to the nature of the R&D tax relief.

As the South African legislation clearly has a number of anti-avoidance provisions built into the legislation it will be of interest to determine how this compares with the UK model for R&D relief. In order to protect the tax base it is necessary that legislation defines clearly the purpose of the allowance so that unwarranted claims are not entertained.

3.3.7 International considerations

In term of the requirements of section 11D of the Income Tax Act, any activities which are conducted outside the territory of the Republic of South Africa, even if funded from within the country, will not be eligible for the section 11D allowance (SARS, 2009:5).

No restriction has been placed on the right of firms to utilise the research findings and results in other countries and developments which are achieved through R&D activities constitute activities of the company, regardless of whether a tax allowance was granted for such R&D. If the outcomes of the research result in patentable or copyrightable material this will in all instances remain the property of the company that conducted the research.

The current view taken by the South African government is that regardless of where the funding for R&D originates, if it is not performed within the borders of the country it is not eligible for the R&D allowances (SARS, 2009:11). This is in line with countries such as the United States and Canada (OECD, 2002:30).

Currently there are no evident national content or exploitation provisions in the South African legislation. This is explained by the low levels of research staff that the country has at its disposal as well as the generally low level of R&D activities as measured by the ratio of R&D spend to GDP. Regardless of the findings of the UK model it is unlikely that South Africa will be able to amend its policy regulations in this regard. Nevertheless, the experience of the UK initiatives will be examined to determine if any similar hurdles have been experienced by them in the past.

3.4 CONCLUSION

In this chapter the R&D environment specific to South Africa was explored and the relevant tax incentives pertaining to R&D were identified. These incentives were then evaluated in terms of the OECD guidelines and a summary of the key issues and findings is presented below.

It was established that the National Research and Development Strategy aims to promote general research and development activities by the private sector. The critical elements to this policy lie in the fact that all allowances must be easy to administer and simple for the tax payer to comply with.

The definition of a qualifying R&D purpose is relatively complex as the current definition requires an in depth evaluation of legislation outside of the scope of the Income Tax Act as

well as the subjective evaluation of terms not clearly defined. The interpretations as provided by SARS provide limited guidance in this regard although for tax payers without the appropriate legal and accounting resources this may still prove overly complicated and unclear.

The claiming of the actual allowance is simplified by the fact that no special approval is required in order to claim the R&D relief and the claim is processed by simply completing the relevant fields in the income tax return. The administration process and related costs are increased by the required submission of the additional paperwork to the Department of Trade and Industry (DTI) within 6 months of the financial year end.

Other than the above mentioned matters the adoption of a volume based allowance above a tax credit does simplify the administration of the incentive and should feel familiar within the context of the existing South African tax framework. Provided that the incentive remains in place and is not frequently altered, the applicability of the section should become more wide spread and better understood. On an overall basis, therefore, it can be argued that the South African incentive is relatively straightforward and easy to comply with.

A potential downside to the relatively simple approach followed by South Africa is that the R&D incentives may end up costing the government more in terms of tax losses than the return achieved through increased innovation and socio-economic development. This will only be evidenced over a period of time and the South African government will need to ensure that the mechanisms for collecting accurate data relating to the adoption of the R&D incentive scheme are appropriately implemented and monitored.

CHAPTER 4

EVALUATION OF THE UNITED KINGDOM'S R&D ENVIRONMENT

4.1 INTRODUCTION

The following chapter serves to provide an overview of the historical involvement of government in promoting research and development activities in the United Kingdom and highlights the country specific needs which have been identified in developing and implementing the current fiscal incentives. The specific tax incentives of the United Kingdom that have been identified are then evaluated in line with the key components of the OECD framework.

4.2 OVERVIEW OF THE UNITED KINGDOM'S R&D ENVIRONMENT

The United Kingdom's (UK) national strategy on innovation has identified business related R&D as a pivotal role player in raising the countries R&D spend from 1,78% to 2,5% of GDP. R&D tax allowances are currently being used as a means to target these objectives (OECD, 2008:160).

The UK introduced tax incentives for R&D in April 2000 for small to mediums sized enterprises and extended the tax relief to include large qualifying enterprises in April 2002. The tax concessions took the form of tax allowances based on qualifying expenditure for R&D activities and originally allowed for super deductions of 150% of the qualifying expenditure for SMEs and 125% for large enterprises. (Sharma & Grant 2006.) From April 2008 the deductions were increased to 175% for SMEs and 130% for large enterprises. Tax relief is further only available if the company claiming the relief spends £10,000 or more on qualifying R&D costs in any given accounting period and an upper limit of €7,5 million applies to the total amount of aid that can be received by an SME on any one R&D project. There is no upper limit for the large enterprise incentive. (HMRC, 2010.)

As productivity in the UK had for many years grown at a rate slower than that of the UK's main trading partners the government had identified a productivity gap which was believed

to be partly attributable to a low level of investment in R&D spending (International Tax review, 2003).

For many years key supporters backing enterprise and the need for innovation in order to grow the UK economy included former Prime Minister Tony Blair, Chancellor Gordon Brown and Science Minister Lord Sainsbury. In collaboration with the UK DTI they lobbied for the need to incentivise and reward private industry for genuine research efforts contributing to the national R&D investment (Sharma & Grant 2006). This coupled with increasing assertions from industrialists that the UK was becoming an increasingly unattractive environment to undertake R&D forced the government to consider and eventually implement tax measures to address these concerns (International Tax review, 2003).

The initial consultation process followed by the UK government when considering the implementation of tax incentives for business R&D raised questions as to what features of a tax incentive would have the greatest effect on company decision making. The response elicited from business enterprises were three fold. The incentive should be simple, it should be certain and it should be sufficiently attractive so as to make a material impact on the tax charge whilst being competitive with international policy. (International Tax Review, 2003.)

In essence the UK tax policy allows for a normal tax deduction at either a rate of 130% or 175% of actual qualifying expenditure incurred. The R&D claim is based on the volume of research performed and in certain instances the allowance can be converted into a tax credit repayable to the business incurring the R&D expenditure. Subject to the definition of the research and development allowance capital expenditure can be claimed at an accelerated rate of 100%. (HMRC, 2010.)

According to the survey results released by the Confederation of British Industry, the main complaint of the R&D tax relief incentive is that not all overhead expenses are deductible for allowance purposes as they do not meet the definition of directly contributing to the advancement of a scientific or technological uncertainty (CBI, 2009:7). Other than that, the survey has shown a marked uptake of the R&D incentives with the over 86% of companies satisfied with the pre-claim criteria (CBI, 2009:3).

The UK R&D policies have been selected for a direct comparison to the South African legislation as they have a strong reputation for world class research. This is evidenced by the fact that the country ranks second only to the United States in the production of highly cited research articles (OECD, 2008:160). Furthermore, the methodology followed to promote business expenditure on R&D activities by both the governments of the UK and South Africa appears at first glance to be very similar. Nevertheless, the United Kingdom enjoys an R&D spend of nearly double that of South Africa (OECD, 2009a).

In addition to the above the UK has had targeted R&D tax incentives in place since April 2000 and has, therefore, obtained significant levels of experience in administering this form of tax policy (Sharma & Grant: 2006). It is, therefore, possible that South Africa may be able to learn something from the design methodology and experience of the United Kingdom in promoting business related R&D by means of tax policy.

The incentives as described above are now subjected to a detailed evaluation in terms of the OECD guidelines discussed earlier.

4.3 EVALUATION OF TAX POLICY AGAINST THE OECD GUIDELINES

4.3.1 Definition of R&D

Within the context of the United Kingdom's tax system, allowances in respect of scientific or technological research and development will be granted when the requirements of section 837 of the Income and Corporations Taxes Act 1988 have been met (HMRC, 2010a).

In terms of the tax legislation the activity in question must be one that is capable of being treated as R&D under Generally Accepted Accountancy Practice for companies in the UK, as set out in the Statement of Standard Accountancy Practice. If the company is required to report in terms of International Financial Reporting Standards then the relevant International Accounting Standard (International Accounting Standard 38) applies (HMRC, 2010a).

The accounting definition is then modified by the guidelines on the meaning of research and development for tax purposes as are issued by the Secretary of State for Trade and Industry and given legal force by Parliamentary Regulations (HMRC, 2010a). The guidelines stipulate the following requirements in order for there to be qualifying research and development:

- the R&D project must seek to achieve an advance in science and technology;
- only activities that directly contribute to achieving the advance in science and technology through the resolution of a scientific or technological uncertainty are research and development;
- specific indirect activities related to the R&D project are also considered to be R&D. All other activities not contributing to the resolution of the projects scientific or technological uncertainty are not regarded as R&D (Secretary of State for Trade and Industry, 2004: 1).

The definition of R&D for UK tax relief purposes must first meet the more narrowly defined definitions of the DTI guidelines and must also be capable of being recognised as research and development for accounting purposes (HMRC, 2010b).

According to the DTI guidelines a scientific or technological uncertainty exist when it is unknown whether something is scientifically or technologically feasible and such uncertainty cannot be resolved by a competent professional working in that field of expertise (HMRC, 2010b).

The UK guidelines go a far way to define every term of the R&D definition and the guidelines are easily accessible from HMRC website. The concept of a qualifying expense is also covered in the guidelines and in terms of the definitions provided, an activity must meet the requirement of contributing directly to achieving the scientific or technological advance or must be an indirect qualifying expense in order to qualify as R&D (HMRC, 2010).

Expenditure which is considered to be indirect and therefore theoretically not qualifying research and development but that is, nevertheless, allowed in terms of the DTI guidelines is briefly considered below for purposes of comparison to the South African approach.

Qualifying indirect activities that are allowable in the UK include:

- scientific and technical information support services which are conducted in line with the qualifying R&D project such as preparing the original report on the R&D findings;
- indirect services essential to and supporting the R&D project such as maintenance cost of R&D equipment, security, payroll expenses and administration costs of finance, clerical and other staff;
- training required in order to directly support the R&D activity;
- research and data collection required in order to conceive new scientific or technological testing, surveys or sampling methodologies; and
- feasibility studies to determine the direction of an R&D activity (HMRC, 2010b).

The inclusion of indirectly qualifying costs widens the definition of allowable expenditure in the UK environment and as the DTI guidelines are given force by Parliamentary Regulation, HMRC must adopt the guidelines as promulgated.

4.3.2 Administration

The OECD design criteria specify that key hindrances promoting the accessibility of R&D activities lie in the ease with which companies can comply with the requirements of claiming the allowance and whether the allowance itself is clear and easily understood. As such the administration of the section is discussed in terms of these criteria.

4.3.2 Administrative process

In the UK any R&D relief is claimed in the company tax return submitted to the Her Majesties Revenue and Customs (HMRC). The claim must be made within two years of the end of the relevant corporation tax accounting period and is processed by simply entering the detail of the enhanced expenditure (175% or 130% depending on the nature of the claim) on the return. A company must indicate whether it is applying for any portion of the claim to be refunded in terms of tax credits and the form is completed as part of the year end process by ticking the appropriate boxes on the annual return. (HMRC, 2010.)

It is the company's responsibility to ensure that they are eligible for the claim and that they understand the detailed requirements of the sections they are applying for. HMRC encourages companies to disclose information relating to the projects they consider eligible for the R&D claim and to attach a schedule of how the qualifying costs were arrived at to the tax return. Nevertheless, this is not a legal requirement and the return will be processed whether the information is disclosed or not. At the discretion of HMRC a compliance check or enquiry may be opened looking into the return in which case detailed information will be requested from the company in question. (HMRC, 2010.)

HMRC introduced no specific record keeping requirements for R&D relief claims but does indicate to tax payers that the normal requirement of maintaining sufficient records to support the company tax return applies as normal (HMRC, 2010).

The latest survey conducted by the Confederation of British Industry on the impact of R&D tax incentives revealed that only 51% of companies surveyed were satisfied with the costs incurred in the claiming process (CBI, 2009:3). These costs relate directly to collecting the necessary data in order to produce claims as well as the time of employees required in order to finalise and submit accurate data. Until companies have established a level of confidence in the R&D relief scheme and incorporated the need for information into their regular reporting and accounting systems, this will likely remain a continued concern for UK industry.

As is the case with South African tax policy it is not necessary to obtain approval from HMRC for R&D tax relief prior to conducting the R&D work.

4.3.2.2 Clarity and consistency

In order to apply for the R&D relief as provided by the UK government a company needs to firstly determine whether it qualifies as an SME or large entity within the definition as provided by HMRC. It then needs to comply with the required definitions of qualifying R&D projects and determine the qualifying costs as defined by HMRC (HMRC, 2010).

Apart from the legislation which is readily available to corporations, HMRC have published a range of detailed documents to more fully assist tax payers in answering the questions raised above. The guidelines are written in simple English and are easily accessible directly from HMRC website. Although the supporting guidelines issued by the Inland Revenue service carry no legislative force (International Tax review, 2003), they are, nevertheless useful in establishing the relevant information needed to apply for the R&D relief.

Furthermore, the UK government has historically been quick to embark on consultation initiatives with industry in order to determine perceived shortcomings of the R&D relief and where possible make appropriate changes to the legislation in force. A year after the introduction of the large business R&D relief the government embarked on a review of the policies in order to address issues raised by industry and adapt the system to become more internationally competitive (International Tax review, 2003).

From 2006 onwards HMRC started investing in the creation of specialist R&D tax credit centres to deal with R&D tax relief claims outside of the Large Business division of HMRC. The centres were staffed with specially trained employees and set up across the country. The idea was that the centres would allow for more consistent treatment of the R&D claims whilst simultaneously raising awareness of the R&D incentive scheme. According to the survey performed by the Confederation of British Industry 75% of respondents surveyed were satisfied or fully satisfied with the service received from these centres. (CBI, 2009:3.)

According to the latest 2009 survey results by the Confederation of British Industry, the ability of HMRC to improve the manner and consistency with which R&D relief claims are treated has directly improved the confidence of UK companies in the R&D tax incentive scheme. According to the most recent survey results 83% of all companies surveyed are satisfied with the current claim process in the UK. This has been largely attributed to the establishing of the specialist centres, extensive training of HMRC staff and the direct engagement of HMRC with industry (CIB, 2009: 3).

Undoubtedly the most important factor to the success of the UK tax incentive scheme is that the overall nature of the R&D relief has not in itself changed over time. Although

definitions, rates and guidelines have been amended the manner in which the R&D relief has been treated has not changed materially and importantly has not changed to the detriment of the taxpayer. This is in line with the OECD guideline which indicates that R&D tax incentives become more effective when provided over the long term (OECD, 2002:27).

Evidence of the uptake of R&D tax relief in the UK is available from the UK tax credit statistics, the detail of which is provided below:

Financial year	No of companies	Growth rate %
2000 – 2001	1,780	
2001 – 2002	3,270	84%
2002 – 2003	5,110	56%
2003 – 2004	5,950	16%
2004 – 2005	6,310	6%
2005 – 2006	6,120	-3%
2006 – 2007	6,560	7%
2007 – 2008	7,450	13%

Although there are a multitude of reasons as to why the number of companies claiming R&D relief would fluctuate over time, there is a decided spike in claim activities post introduction of the initial allowance for SMEs in the year 2000 and introduction of the allowance for large enterprise in 2002. Additionally a substantial increase can be witnessed in 2008 upon the government's decision to increase the percentage allowance for R&D relief, thereby reducing the costs associated with claiming the allowances. (HMRC, 2010).

Even though the figures represent a strong uptake of the relevant R&D relief offered by the UK government, there are some industries that have raised concerns about the manner in which HMRC has interpreted the definition of qualifying R&D.

An article published in Professional Engineering described the R&D relief offered by the UK government as being so confusing that it may discourage companies from investing in R&D activities. According to the article HMRC had made a fundamental change in the

interpretation of the DTI guidelines in order to disallow claims which pre 2007 would have been accepted. (Anonymous, 2009:5.)

The point of uncertainty arose as a result of an interpretation of the DTI guidelines by HMRC relating to the requirement that a scientific or technical uncertainty must be resolved in order to apply for the R&D relief. This mainly impacted manufacturing and engineering concerns and raised questions over the consistency in which HMRC was administering the R&D relief. Although the claims of the article contradict the assertions of the latest survey of the CBI, which indicates that there is a positive balance of experience regarding the qualifying R&D definition and pre claim criteria, it remains a worthwhile point to keep in mind (CBI, 2009: 3). The assertion raises valid concerns over the consistent application of policy initiatives and should serve as a reminder for South African policy makers as to how vital the setting of clear guidelines and consistent application of the legislation is.

4.3.3 Form of tax incentive

The UK uses an innovative means of combining tax allowances and tax credits in the same tax incentive. As discussed above a super deduction of 175% of qualifying expenditure is available to SMEs and an allowance of 130% of qualifying expenditure is available to large enterprises (HMRC, 2010).

The allowances are claimed directly against the taxable income of the company applying for the R&D relief and if in a loss position the loss can be carried forward or backwards for corporation tax purposes (HMRC, 2010).

In the event that an SME finds itself in a loss making position the company can elect to convert the tax allowance into a refundable tax credit. This amount is paid in cash directly to the company applying for the tax relief and is calculated at a rate of £24,50 for every £100 spent on qualifying R&D (CBI, 2009:2). The option to convert tax allowances into credits is not available under the large enterprise relief (HMRC, 2010).

Although the system of converting the tax allowance to a payable credit is relatively straightforward for the taxpayer there are certain shortfalls to the system which need to be considered.

Firstly the payment of the credit involves additional procedures that increase the costs of administering the R&D relief for HMRC. These costs will be unavoidable as separate system information will need to be obtained and payments will need to be facilitated once appropriately approved. Although this can be factored into the rate at which the actual credit is refunded an additional layer of administration is added to the R&D relief increasing the complexity of the system.

Secondly, a tax credit may be unjustifiably refunded to an R&D claimant only to discover by means of a subsequent audit that the R&D relief did not qualify for the deduction. HMRC could face significant difficulties in retrieving the credits already repaid, particularly where the entity is in a loss making position. There is also the unavoidable risk that tax revenue is being used to fund a failing business that has no realistic ability of turning profitable. In this event the actual innovation achieved by the company is likely to be lost with the failure of the business and the funds spent by the government on such activities may not result in positive spill over effects for the country.

4.3.4 R&D volume or increment

As mentioned previously, when the UK government was exploring the introduction of the SME R&D incentive the original consultation process revealed that business interest would best be served by an incentive that was simple, certain and sufficiently attractive so as to make a material impact on the tax charge whilst being competitive with international policy (International Tax Review, 2003). Following the principles of this consultation it was decided to introduce a purely volume based approach in the United Kingdom. The complexities of dealing with base values, however they may be derived, was considered to introduce a level of complexity to R&D incentives that was not warranted or desirable in the UK.

4.3.5 Targeted incentives

Per the analysis of the OECD framework it is apparent that the design of targeted incentives depends largely on the policy objectives of the country in question. Targets can address any number of national policy objectives including specific types of R&D work, particular sectors within the economy or particular partnerships and collaboration activities.

The targeting of specific R&D objectives is achievable by defining the scope of desirable outputs and then defining the particular tax relief efforts around these objectives. It is noteworthy that the UK implemented R&D incentives for SMEs two years prior to the introduction of the large business allowance and the applicability of the legislation depends on meeting the appropriate definitions as set out in the legislation. SMEs enjoy a larger deduction for R&D claims as opposed to large enterprises and have the option of converting tax allowances into payable tax credits. This implies a strong focus area by the government to incentivise innovation within that sector of the market. Some OECD countries believe the distinction between SMEs and large enterprise is necessary as smaller firms are less likely to make investment decisions relating to R&D due to technical, financial and information related constraints (OECD, 2002: 17).

As such a move to allow a greater deduction for SMEs makes the allowance more attractive and indirectly reduces the costs associated with making R&D claims. In theory this should promote increased R&D activities within the SME sector of the market and may even induce some companies to actively pursue R&D work in line with their need to remain innovative.

For purposes of the R&D relief a company can be classified as an SME in the UK if the company employs less than 500 employees and has either:

- an annual turnover not exceeding € 100 million (Approximately R 1 billion); or
- a balance sheet not exceeding € 86 million (Approximately R 860 million).

It should also be noted that this definition is different from the definition that is used by HMRC in relation to corporation tax, PAYE and indeed other government agencies (HMRC, 2010).

4.3.6 Avoidance provisions

The definition of science as contained in the UK DTI guidelines excludes certain sciences from the definition of acceptable R&D activities. These include work done in the disciplines of the Arts, humanities and social sciences, including economics (HMRC, 2010b).

Further, the definition of an R&D project limits the available tax relief only to the components of a project which contribute to the resolution of a scientific or technological uncertainty contributing to the overall advance. Tax relief may therefore not be claimed on all activities relating to a qualifying R&D project (HMRC, 2010b).

A list of activities that are considered to be indirect and, therefore, not deductible include:

- the cost relating to the financial, development and marketing time of new processes or products related to the R&D activities;
- the costs of actually producing and distributing improved processes and products; and
- administration, support and general support services, including repairs and maintenance of R&D equipment, transport, storage and security services (HMRC, 2010b).

Although these expenses are in essence disallowed because they are not directly related to the R&D activity, a list of indirect qualifying R&D expenditure was determined so as to allow certain of the costs. The UK legislation has therefore incorporated the anti avoidance provisions into the definition of qualifying R&D. This promotes clarity in the tax incentive as it is only necessary to comply with the requirements of the definition in order to determine the applicability of an R&D incentive for tax purposes.

4.3.7 International considerations

Previously the UK government had placed a restriction on SME organisations attempting to claim the R&D relief stating that if intellectual property rights arose as a direct result of the R&D work performed then the company needed to be the owner of the intellectual property rights (HMRC, 2010).

However, this regulation was removed from the UK requirements for all accounting periods ending after 9 December 2009 as it was considered unnecessarily restrictive (HMRC, 2010).

Other than this no other national content or location provisions were noted during the investigation into the UK tax relief offered. According to Murray (2005:1) UK R&D activities can be performed anywhere in the world as long as they are being performed by a UK company.

4.4 CONCLUSION

In this chapter the R&D environment specific to the UK was explored and the relevant tax incentives pertaining to R&D were identified. These incentives were then evaluated in terms of the OECD guidelines and a summary of the key issues and findings is presented below.

The clarity of the UK legislation is improved by the fact that the DTI guidelines are accurately worded with all terminology clearly defined. Directly qualifying expenditure is defined within the actual legislation and no reference is made to other UK legislation.

The administrative process is relatively straightforward once the concepts of qualifying R&D activities have been established. No pre-approval of the intended R&D is required from HMRC and the allowance or tax credits are applied for by completing the annual tax return. There is no additional requirement to submit additional forms to any other government agencies and the record keeping requirements are in line with the standard requirements laid down by HMRC.

The tax incentive scheme is volume based which simplifies the administration of the incentive. The fact that the tax incentive can be converted into a tax credit for qualifying SMEs adds a level of complexity to the UK tax incentive scheme. It also creates the risk of unwarranted refunds to companies that may fail after receiving the payout.

Additionally the UK R&D incentive allows UK companies to claim the qualifying R&D incentives regardless of where the work is performed.

CHAPTER 5

POTENTIAL LESSONS ARISING FROM THE UK COMPARISON

5.1 INTRODUCTION

This chapter serves to compare the findings of the South African and UK evaluations of R&D tax incentives and highlight potential lessons from the United Kingdom's tax policy which may benefit the future development of tax policies in South Africa.

5.2 DEFINITION OF R&D

The OECD guidelines promote clarity in defining the concept of research and development and suggest that the definition be kept as uncomplicated as possible (OECD, 2002:27).

Key terminology utilised in the definition of qualifying research and development in South Africa is not as clearly defined as the terminology in the United Kingdom. The guidelines as provided by the Department of Trade and Industry in the UK define the key concepts of the R&D definition clearly without reference to other legislation. Furthermore, the UK DTI guidelines have legal force whereas the interpretations as released by the South African Revenue Services do not (SARS, 2009:1).

The South African Revenue Services could consider a simplification of the manner in which qualifying research and development is defined by removing the overly complex references to other legislation. Instead a guideline similar to that utilised in the United Kingdom could be drafted containing within itself the requirements for the tax relief. This is a contentious suggestion which needs to be assessed carefully against the equally valid point that changing the core components of the definition so early in its stage of adoption would in itself introduce increased uncertainty and complexity into the South African legislation.

Nevertheless, the term ‘scientific or technological’ should receive some attention and an interpretation of this meaning should be defined and released by SARS.

It should also be considered that smaller companies without the available resources, knowledge and expertise may be discouraged by the perceived complexity of complying with the definition of R&D in South Africa. This could be countered by the introduction of simplified guides promoting the section written in a manner which is easy for the general population to understand similar to those that are available in the United Kingdom.

Although the interpretation notes issued by SARS partly fulfil this purpose they effectively represent nothing more than a summary of the legislation in terms of which the tax relief is defined along with some examples. The interpretation may be perceived as being overly complex in itself as it still requires an intricate knowledge of the relevant income tax sections in order to be useful. The guidelines as utilised in the United Kingdom are much more straightforward as all the relevant definitions are defined within the text in clear unambiguous English.

Qualifying expenses that arise from the contribution directly affecting the outcome of the scientific or technological pursuits are more broadly defined in the UK definition than the closed list of activities that the South African policy allows. Certain expenditure which is considered allowable in terms of the UK definition has been indicated as being unacceptable for deduction purposes by SARS. In fact it appears that SARS has adopted the UK definition of ‘qualifying indirect activities’ to define an unacceptable ‘indirect activity’ in the South African legislation. These include items such as the training required to support the R&D activities or such costs as preparing the original report of R&D findings.

According to the survey results released by the Confederation of British Industry a main complaint of the United Kingdom’s R&D tax relief incentive was that not all overhead expenses are deductible for allowance purposes (CBI, 2009:7). This point is likely to be echoed by South African business sentiment as the overhead costs contribute a significant portion to the expenditure on R&D and are also excluded in terms of South African policy by not being ‘directly’ contributing.

This further complicates the South African legislation as traditional management accounting views as to the costs directly related to an R&D project will likely vary from the restricted model that SARS is promoting.

In doing so it complicates the section for industry as traditional accounting and reporting systems will need to be adapted to ensure that only appropriate amounts are presented for the income tax allowance. This may further prove a costly exercise which could reduce the interest of taxpayers in adopting the available tax incentives. SARS may wish to re-evaluate the deduction of certain qualifying indirect expenses in line with the UK model as this will reduce the perceived complexity of the R&D relief in South Africa and provide a greater incentive for companies to pursue the uptake of the incentive.

To summarise, South Africa could benefit from the UK experience by incorporating the UK view of more strictly defining the concepts of scientific and technological as well as other terms relating to the R&D definition. As these definitions are key to the claiming the R&D allowances in South Africa they are likely to be interpreted broadly by industry intending to claim the maximum increased allowance.

5.3 ADMINISTRATION

Currently South African legislation requires the submission of two forms in order to claim the R&D allowance. In the UK it is only necessary to complete the annual company tax return.

SARS in conjunction with the South African Department of Trade and Industry (DTI) could consider the possibility of combining the information requirements as set out by the DTI directly into the South African income tax return for scientific and technological R&D and recant the requirement for the second form to be completed. This would simplify the administration process surrounding R&D claims for both the claimant and provider of the tax relief, thereby driving down the cost of claiming the allowance. It would further ensure more accurate information is collected by the government as only one source would be relied upon. Efficiencies would also be attained as it would not be necessary to reconcile the data as collected by the tax system with that as collected by the DTI.

As is evidenced from the UK experience it appears that any uncertainty regarding the clarity of the legislation is likely to reduce the longer the legislation is available to taxpayers. The South African government may, however, seek to improve the visibility surrounding the legislation and promote the use of the section by directly marketing its advantages to taxpayers. A consultative approach as is followed in the UK could be implemented in order to track the success of the section by means of detailed surveys and workshops with major industrial role players. This would help identify any shortcomings of the legislation as perceived by the market place in a relatively short time frame. Where significant shortcomings are evidenced these should be acted upon promptly in order to promote the view that government is committed to the R&D incentive scheme. In the UK this has proven a helpful tool in signifying the intention of government to entrench the incentives in UK tax policy.

Additionally, SARS could follow the UK example of setting up dedicated R&D centres to promote the use of the R&D relief. The centres could be headed by highly trained field operatives that could provide guidance as to whether activities qualify for the R&D allowances. These centres could further speed up the processing of R&D claims and assist SARS in testing the compliance of claims with the relevant legislation, thereby reducing unwarranted losses to the South African fiscus.

Most importantly, the government should take a long term view of entrenching the allowances in the Income Tax Act and must resist any attempts to alter the form of the allowance in the short term. Also the definitions determining the nature of a claim should not be altered regularly or unnecessarily and SARS should look to apply the definitions with consistency. If this policy is followed the confidence of South African companies in the R&D incentives will undoubtedly grow leading more and more companies to adopt the allowances on a yearly basis.

5.4 FORM OF TAX INCENTIVE

The dual approach as followed by the UK offers the benefits of reduced complexity to the tax system (in relation to a pure credit system) as well as limited benefits to claimants of

R&D incentives that may prefer the payable tax credits to be applied directly against their R&D budgets. This may also be a significant tool in promoting R&D with smaller companies looking to get something back from the taxman.

The current South African tax policy provides only for super deductions of qualifying R&D expenditure. The losses can be carried forward to subsequent tax periods but it is not possible to have the R&D relief refunded by means of credits.

In light of the overwhelming requirement to maintain simplicity in the R&D incentive scheme the departure from traditional allowances as are popular in South Africa may have unintended consequences of alienating industry from adopting the new R&D allowances as the policies would ultimately become more complex.

The South African adoption of the allowances also seems appropriate when considering the increased administrative requirements of adopting tax credits above allowances. The contrary to this is that the actual refunding of tax credits may go a long way in promoting the visibility of the tax incentive and would possibly elicit a greater response from small to medium sized enterprises that may welcome a direct refund for cash strapped operations.

Although the trend within OECD countries is a movement towards tax credits, currently the approach followed by South African policy makers seems appropriate. Once the R&D incentives have been in place for a longer period of time and the state of the allowances can be better evaluated, policy makers may re-evaluate this position.

5.5 R&D VOLUME OR INCREMENT

The South African legislation also allows for the claiming of qualifying R&D activities based purely on the volume of research that is being performed. The downside of this policy is that it allows taxpayers to claim increased deductions for research that would have been performed anyway. This impacts the tax base negatively without necessarily resulting in increased levels of innovation.

The difficulty within the South African environment is that the legislation introduced is relatively new and unknown to the majority of tax payers. As was evidenced by the slow uptake of the incentive in its initial stages, it is a matter of time before taxpayers become familiar and confident enough to claim the available allowances. In smaller firms this diffusion of knowledge is likely to take even longer than in larger firms. This means that the initial introduction of the allowances needed to be easy to administer and understand.

Both the UK and South African R&D incentives base the R&D tax concession on the volume of the research performed as opposed to using an incremental approach. From the research performed it appears that this decision is based largely on the desire to keep the tax incentive as simple and clear as possible.

Within the South African context, it can further be concluded that until more reliable historical information becomes available on which to calculate potential base levels of R&D it will not be possible to introduce an effective and meaningful incremental allowance.

Therefore, the current approach as followed by South African policy makers seems appropriate. Once the R&D incentives have been in place for a longer period of time and the state and actual cost of the allowances can be better evaluated, policy makers may re-evaluate this position.

5.6 TARGETED INCENTIVES

In terms of the National Strategy on Research and Development a key objective of the South African policy is to promote an increase in the general level of R&D activities in the country. Due to the varying sizes and natures of the South African and United Kingdom's economies it is useful to evaluate the need for an SME allowance based on the definitions for SMEs in this case.

For purposes of the R&D relief a company can be classified as an SME in the UK if the company employs less than 500 employees and has either:

- an annual turnover not exceeding € 100 million (approximately R 1 billion); or
- a balance sheet not exceeding € 86 million (approximately R 860 million).

In South Africa there is no specific SME definition for R&D purposes. In fact the only reference which is made to a 'small business corporation' is contained in section 12E of the Income Tax Act. The key requirement in order to qualify as a small business corporation in terms of this section is that the gross income (revenue) of the entity may not exceed R14 million.

As is apparent from these massive discrepancies between the perceived sizes of small to medium sized enterprises there is a substantial difference between the nature of the two economies and accordingly it is expected that there will be noticeable differences in their national policy towards R&D.

Yet there are other means of targeting specific R&D activities. As was noted in the previous section covering the definition of R&D in terms of the OECD guidelines, a most effective means of promoting particular industries is by adjusting and limiting the scope of the R&D definitions.

The UK established targeted incentives for SMEs based on the argument that SMEs require additional incentivising in order to reduce the cost of applying for the allowance in order to promote R&D activities within that sector of the economy. South African policy makers could evaluate the introduction of a similar approach to smaller companies within the South African economy along with simplified regulations. As was shown from the UK experience, the definition of an SME can vary within sections of the tax acts and South African policy makers may consider deriving a new means of evaluating the size of an entity for R&D purposes.

What should be borne in mind is that the R&D allowance was introduced in order to promote increased private expenditure on R&D. A meaningful increase in the amount of R&D spend will only be achieved if all sectors in the economy can be engaged appropriately in adopting a climate of innovation.

5.7 AVOIDANCE PROVISIONS

The avoidance provisions as included in the South African policy aim to explicitly exclude certain expenses and scientific fields from claiming the R&D allowance. This is likely a pro active attempt to align the tax incentives with the objectives of the National Research and Development Strategy without adversely affecting the existing tax base of the country.

The UK model attempts to incorporate the anti avoidance provisions directly into the definitions of qualifying R&D. This simplifies the legislation as tax payers need only comply with one element rather than having to focus on compliance with several different factors.

The South African government should explore the possibility of including the anti avoidance provisions into the definitions of qualifying R&D. This will likely create a simpler piece of legislation which will be easier for tax payers to comply with.

5.8 INTERNATIONAL CONSIDERATIONS

Currently the South African legislation provides that the R&D tax incentive will only be applicable if the R&D activities are performed within the borders of the Republic of South Africa. The United Kingdom on the other hand allows for all qualifying research and development to be claimed provided the work is performed by a UK company.

Although allowing South African based companies to claim the increased R&D incentives for R&D work performed anywhere in the world may promote increased foreign investment, it could be argued that it is in conflict with the requirements of the National Research and Development Strategy. As the strategy aims to improve the level of suitably qualified research staff and promote the registration of increased levels of intellectual property within the borders of South Africa, promoting expenditure elsewhere in the world would likely lead to a conflict with these objectives.

5.8 CONCLUSION

This chapter has highlighted several areas of potential improvement to the South African R&D incentives from the evaluation of the UK model.

The complexity of the South African R&D relief could be reduced and greater clarity obtained by more clearly defining certain terminology utilised in the legislation and promoting active consultation with South African taxpayers. The administration of the tax incentive could be improved by removing unnecessary reporting requirements and providing simplified procedural guidelines. Targeted incentives, incremental allowances and the introduction of a credit system should only be explored once more accurate data relating to the success of the initial R&D incentive has been obtained.

CHAPTER 6

CONCLUSION

6.1 INTRODUCTION

The purpose of this study was to compare the South African legislation relating to R&D incentives to that in the United Kingdom using the theoretical framework as publicised by the Organisation for Economic Co-operation and Development as underpin and in doing so highlight any potential lessons that could benefit the design of the South African policy measures.

6.2 SUMMARY OF FINDINGS

The objectives were to identify and discuss the available tax incentives in South Africa and the UK in terms of the OECD guidelines. This was done in chapters 3 and 4. Using the OECD framework the discrepancies between the South African and UK tax policies were then evaluated and potential lessons relating to the South African tax policies were highlighted in chapter 5. This process revealed potential lessons which over the long term could be implemented in order to improve the effectiveness and uptake of the R&D tax incentives in South Africa.

It appears that the South African allowances have been developed along the basis of international practices and the requirements as set by the National Research and Development Strategy. However, compared to the UK incentive model, the South African legislation remains relatively complex and restrictive in terms of the eligible R&D activities and costs that can be deducted for such projects. In the long term this could impact negatively on the desired uptake of the incentives and increased R&D activity within the country.

South Africa could further learn from the consultative approach as followed in the United Kingdom and should explore means already implemented in the UK of simplifying the administration of the legislation whilst promoting a clear and consistent understanding of the available incentives. This could, in part, be achieved by providing simplified and clear

guidelines as are available in the UK and consulting pro actively with tax payers intending to claim the R&D tax incentive.

Most importantly, the findings show that the South African government must take a long term view of entrenching the allowances in the Income Tax Act and must resist any attempts to alter the form of the allowance in the short term.

6.3 CONCLUSIONS

The South African government will likely need to maintain the approach adopted for a longer period of time before the required information on the success of the R&D tax incentive becomes available. Only once a culture of innovation has been fostered should government re-evaluate the policy guidelines of the OECD and recommendations of this paper in order to determine whether improvements from these findings could be incorporated into the South African tax policy.

In the meanwhile the South African government could explore means of reducing the complexity of the section by providing simplified procedural and explanatory guidelines. Means of consulting directly with tax payers could be pursued in order to actively market and assist taxpayers in correctly understanding the tax legislation relating to the R&D incentive. The government may even consider relaxing the strict definition of directly contributing costs or introduce certain qualifying indirect costs as was done in the UK. This would improve the attractiveness of the incentive and likely promote increased uptake of the allowance by industry. Any other changes to the nature or functioning of the incentive would likely cause confusion and uncertainty at this point and as such should be avoided in the short term.

6.4 SUMMARY OF CONTRIBUTIONS

By means of critically comparing the design aspects of the South African R&D incentives to those of the UK, this paper has highlighted potential pitfalls of the South African design principles. As the evaluation has been done based on the criteria outlined by the OECD the evaluation draws on the most pertinent factors affecting the design factors of R&D

incentives in the developed world. Analysis of the discrepancies between the methodology followed in the UK and South Africa have revealed potential solutions to some of the design flaws identified in the South African tax policies. The recommendations made serve to highlight the most significant areas requiring potential improvement and may assist in directing future efforts of simplifying and promoting the use of R&D incentives in South Africa.

LIST OF REFERENCES

Anonymous, 2009. R&D tax credit system near breakdown. *Professional Engineering, 22(9):5.*

Blankley, W. & Kahn, M. 2005. The history of research and experimental development measurement in South Africa and some current perspectives. *South African Journal of Science*, 101(1):151-156.

Bloom, N. Griffith, R. & Klemm, A. 2001. *Issues in the design and implementation of an R&D tax credit for UK firms.* Briefing note no 15, Institute for Fiscal Studies.

Bloom, N. Griffith, R. & Van Reenen, J. 2000. London. Do R&D tax credits work? Evidence from a panel of countries 1979 – 1997. *Journal of Public Economics,* 85:1-31.

Confederation of British Industry, 2009. *Impact of the R&D tax credit.* [Online] Available from: http://www.cbi.org.uk/pdf/20090204-cbi-r&d-tax-credit-survey-report.pdf [Downloaded 2010-09-27].

Copyright Act, 2010. *Copyright Act, 98 of 1978.* [Online] Available from http://www.gpa.co.za/pdf/legislation/Copyright%20Act.pdf [Downloaded: 2010-11-05].

Department of Science and Technology. 2008. *Report on the research and development tax incentive programme and trends in research and development expenditure in South Africa.* [Online] Available from http://www.dst.gov.za/r-d/DST%20Report.pdf [Downloaded 2010-04-18].

Designs Act, 2010. *Designs Act, 195 of 1993.* [Online] Available from http://www.info.gov.za/view/DownloadFileAction?id=71070 [Downloaded: 2010-11-05].

Edgars Stores Ltd v CIR, 1988 (3) SA 876 (A) 50 SATC 81.

Falk, M. 2006. What drives business research and development (R&D) intensity across Organisation for Economic Co-operation and Development (OECD) countries? *Applied Economics,* 38:533-547.

Frascati Manual, 2002. *Proposed standard practice for surveys on research and experimental development* [Online] Available from http://www.lmt.lt/PROJEKTAI/TEKSTAI/Frascati.pdf [Downloaded: 2010-11-07].

Government of the Republic of South Africa. 2002. *South Africa's national research and development strategy.* [Online] Available from http://www.info.gov.za/otherdocs/2002/rd_strat.pdf [Downloaded: 2010-04-26].

Hall, B.H., Mairesse, J. & Mohnen, P. 2009. Measuring the returns to R&D. National Bureau of Economic Research, *NBER Working Paper Number 15622*, 33. [Online] Available from: http://www.nber.org/papers/w15622.pdf [Downloaded 2010-04-10].

Hall, B.H. & Van Reenen, J. 1999. How effective are fiscal incentives for R&D? National Bureau of Economic Research, *NBER Working Paper Number 7098*. [Online] Available from: http://www.nber.org/papers/w7098.pdf [Downloaded 2010-04-06].

Her Majesties Revenue & Customs (HMRC), 2010. *Research and development (R&D) relief for corporation tax.* [Online] Available from: http://www.hmrc.gov.uk/ct/forms-rates/claims/randd.htm [Accessed: 2010-09-25].

Her Majesties Revenue & Customs (HMRC), 2010. *CIRD81300 R&D tax relief: conditions to be satisfied: The definition of R&D for tax purposes* [Online] Available from: http://www.hmrc.gov.uk/manuals/cirdmanual/cird81300.htm [Accessed: 2010-09-26].

Her Majesties Revenue & Customs (HMRC), 2010. *CIRD81900 R&D tax relief: conditions to be satisfied: DTI guidelines (2004)* [Online] Available from: http://www.hmrc.gov.uk/manuals/cirdmanual/cird81900.htm [Accessed: 2010-09-30].

Income Tax Act, 2010. *Income Tax Act, 58 of 1962*. 2010. [Online] Available from http://www.acts.co.za/tax/index.htm [Accessed: 2010-11-01].

International tax review, 2003. London. *UK R&D credits in the spotlight,* October [Online] Available from http://0-proquest.umi.com.innopac.up.ac.za/pqdweb?index=4&did=437425531&SrchMode=5&Fmt=3&retrieveGroup=0&VInst=PROD&VType=PQD&RQT=309&VName=PQD&TS=1285411989&clientId=15443 [Accessed 2010-09-25].

Johansson, B. & Lööf, H. 2008. The impact of firm's R&D strategy on profit and productivity. *Centre of Excellence for Science and Innovation Studies*. [Online] Available from: http://cesis.abe.kth.se/documents/WP156.pdf [Downloaded: 2010-07-11].

Murray, K. 2005. *Research and development incentives: why pay the full cost yourself?* [Online] Available from: http://www.buildingipvalue.com/06KTI/043_046.htm [Accessed: 2010-10-28].

OECD. 2009. *Science, technology and industry scoreboard 2009* [Online] Available from http://oberon.sourceoecd.org/vl=7896578/cl=44/nw=1/rpsv/~6681/v2009n18/s1/p1l.pdf [Downloaded 2010-04-10].

OECD. 2009. *Country statistical profiles* [Online] Available from http://stats.oecd.org/viewhtml.aspx?queryname=18154&querytype=view&lang=en [Accessed 2010-05-18].

OECD. 2008. *Economic environmental and social statistics* [Online] available from: http://oberon.sourceoecd.org/vl=1982774/cl=25/nw=1/rpsv/factbook/070101.htm [Accessed 2010-05-23].

OECD. 2008. *OECD science, technology and industry outlook.* Paris: OECD Publications.

OECD. 2002. *Tax incentives for research and development: trends and issues.* [Online] Available from: http://www.oecd.org/dataoecd/12/27/2498389.pdf [Downloaded: 2010-04-10].

Patents Act, 2010. *Patents Act, 57 of 1978*. [Online] Available from http://www.gpa.co.za/pdf/legislation/Patents%20Act.pdf [Downloaded: 2010-11-05].

Secretary of State for Trade and Industry, 2004. *Guidelines on the meaning of research and development for tax purposes.* [Online] Available from http://www.bis.gov.uk/files/file13258.pdf [Downloaded 2010-11-02].

Sharma, R. & Grant, D. 2006. R&D: United Kingdom – An incentive to innovate. *Foreign Direct Investment,* February/March [Online] Available from http://0-proquest.umi.com.innopac.up.ac.za/pqdweb?retrievegroup=0&index=0&srchmode=5&vinst=PROD&fmt=3&startpage=1&clientid=15443&vname=PQD&RQT=309&did=1013342531&scaling=FULL&ts=1285411989&vtype=PQD&rqt=309&TS=1285411997&clientId=15443. [Accessed: 2010-09-25].

SIR v Consolidated Citrus Estates Ltd, 1976 (4) SA 500 (A) 38 SATC 126.

Smulders, S.A. 2006. *Taxation compliance burden for small business in South Africa.* [Online] Available from: http://upetd.up.ac.za/thesis/available/etd-04282009-172111/unrestricted/dissertation.pdf [Downloaded: 2010-04-10].

South African Revenue Services (SARS). 2009. *Interpretation note no. 50: deduction for scientific or technological research and development*. [Online] Available from: http://www.sars.gov.za/home.asp?pid=55888 [Downloaded: 2010-04-12].

Van Pottelsberghe, B., Nysten, S. & Megally, E. 2003. Evaluation of current fiscal incentives for business R&D in Belgium, *Solvay Business School*. [Online] Available from: http://solvay.ulb.ac.be/cours/vanpottelsberghe/resources/Pap12_SSTC.pdf [Downloaded 2010-05-18].