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A critical analysis of the relevance of the South African Research and Development Tax Incentive to small and medium-sized enterprises (SMEs) and start-ups

By

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Declaration

I, Thato Tau, declare that this research report is based on work carried out by myself and has not been submitted, in whole or in part, in any previous application for a degree. Any reference to work done by any other person or institution has been duly cited and referenced.

Signature: 

Date: March 2019

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“Have faith in the process. It knows how to get you to where you’re supposed to be”

- Lalah Delia

I wish to thank my family and friends for their unwavering belief in me. Their support and encouragement helped me considerably in terms of seeing this research paper to the end.

Abstract

Industries, companies, and economies; all are changing and staying still is not an option. This highlights the importance of innovation, and how it can no longer be dismissed as just another business buzzword. In the same vein, the important role that small and medium-sized enterprises (SMEs) and start-up companies play in driving innovation, job creation, economic growth, and social values cannot be ignored.

One way in which governments can better nurture and support the participation of SMEs and start-ups in the promotion of innovation, thereby driving productivity, growth and job creation, is through research and development (R&D) tax incentives.

There are a variety of ways in which the design of R&D tax incentives can be shaped. There is also scope to sharpen its focus by closer targeting of organisations identified as vital for society but have special needs for support. For instance, many countries who offer an R&D tax incentive either explicitly or implicitly target SMEs and start-ups who are often loss-making and for whom some incentives can be a highly-valued source of finance.

This research report explores whether the South African R&D tax incentive benefits SMEs and start-up companies by comparing various design features of the South African R&D tax incentive against some other countries' R&D tax incentives. The main findings show that although the Department of Science and Technology has gone some way to fixing the issues previously faced by the R&D tax incentive programme, there is still more that can and should be done to ensure that the incentive better meets the interests of SMEs and start-ups.

Keywords: Innovation, research and development (R&D), tax incentives, small and medium-sized enterprises (SMEs), start-up companies, economic growth, job creation

Acronyms

AU	African Union
BBBEE	Broad-Based Black Economic Empowerment
DST	Department of Science and Technology
EC	European Commission
EU	European Union
GDP	Gross Domestic Product
MSME(s)	Micro, small and medium enterprise(s)
NACI	National Advisory Council on Innovation
NCR	National Credit Regulator
NDP	National Development Plan
NRDS	National Research and Development Strategy
NSI	National System of Innovation
OECD	Organisation for Economic Co-operation and Development
PAJA	Promotion of Administrative Justice Act 3 of 2000
R&D	Research and Development
SARS	South African Revenue Service
SiMODiSA Start-Up	South African start-up support organisation
SMB(s)	Small and medium businesses
SME(s)	Small and medium-sized enterprise(s)
SMME(s)	Small, medium and micro enterprise(s)
STI	Science, Technology and Innovation
TA	Tax Allowance
TC	Tax Credit
TLAA	Taxation Laws Amendment Act
UN	United Nations

WB	World Bank
WTO	World Trade Organisation

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1 Introduction

1.1 Introduction and Background

1.1.1 Growth through Science, Technology and Innovation

Innovation, a popular buzzword, is often used in organisations due to its ability to provide organisations with a competitive advantage and ensure long term success. The central role played by innovation in terms of driving growth, competitiveness and ensuring sustainable success is not limited to organisations but applies to modern economies alike, with growth in modern economies being increasingly aligned to efforts to increase productivity through innovation (SiMODiSA, 2014:5).

Innovation has always been a foundation for economic growth and in today's world, plagued with financial, social and environmental challenges; innovation is more important than ever in seeking new, more sustainable ways forward (National Advisory Council on Innovation, 2016). This is evidenced by a growing number of countries highlighting the critical role that science, technology and innovation (STI) can play in addressing economic and social challenges by placing STI at the heart of their economic agenda.

For instance, the importance attached to innovation can be seen in Europe 2020, the strategy for growth set out by the European Commission (EC), which puts investment in research and development (R&D) as one of the five priorities for Europe to become more competitive (Straathof, Ladinska, Kox, Mocking, et al, 2014). Another example is the adoption, by the African Union (AU), of the Science, Technology and Innovation Strategy for Africa 2024 – a vision aiming to place STI at the 'epicentre of Africa's social and economic development' (African Union, 2014).

South Africa is no exception, with the ability of innovation to play a driving role in enhancing economic growth and development being highlighted in the country's various STI policies, namely; the 1996 White Paper on Science and Technology, the National Research and Development Strategy (NRDS) (2002) and the "Ten Year Innovation Plan: Innovation towards a knowledge-based economy 2008-2018". The

National Development Plan (NDP) also places significant emphasis on the role and contribution that STI can play in promoting and achieving national objectives, namely; to improve and sustain the quality of life of all South Africans, to build the economy, and to strengthen the countries competitiveness in the international arena (National Advisory Council on Innovation, 2016).

The role of innovation in economic growth and stability can also be seen in the aftermath of the global financial crisis of 2008/9, which resulted in significantly weakened world economic activity. The drop in economic activity highlighted the pivotal role of innovation as both countries and organisations alike had to rethink their strategies and reinvent themselves in some way or another. Post-crisis, countries were prompted to prioritise innovation to keep up with a rapidly changing competitive landscape driven by growing global competition, advances in technology, communication and access to information.

The crisis also revealed the importance of innovation through the resilience of emerging countries in Asia, such as China; where these countries used the opportunity to demonstrate their strengths in innovation to help them face the global financial crisis.

1.1.2 The role of research and development - is R&D really important?

Research and development plays an important role in the innovation process as it directly supports the development of one of the main ingredients in the recipe for innovation; knowledge. Knowledge economies are in turn driven by the knowledge generated, thereby fuelling stronger economic growth and building a globally competitive economy.

Therefore, R&D is important, in that it is an essential tool that exists to gain knowledge thereby driving innovation and economic growth.

1.1.3 Fuelling R&D and innovation – the role of start-ups and small and medium-sized enterprises

Time and again, the emergence of various small and medium-sized enterprises (SMEs) and start-ups continue to show how resourceful South Africans can be in the way in which they overcome obstacles. For example, in order to ease everyday problems faced by many school children living in South Africa's low-income communities, South African company Rethaka designed a recycled bag with a solar light that charges during the day so children can study at night. This bag is made from recycled plastic bags thereby addressing the issue of waste from this material. Furthermore, with a charger powered by solar energy, they provide light for children who lack electricity at home while also reducing the use of kerosene which often causes harmful accidents.

This innate entrepreneurial culture, where problem solving is a frequent occurrence, can be channelled towards innovation, lead to new job opportunities and will enable the attainment of important development objectives as expressed in the NDP (SiMODiSA, 2014).

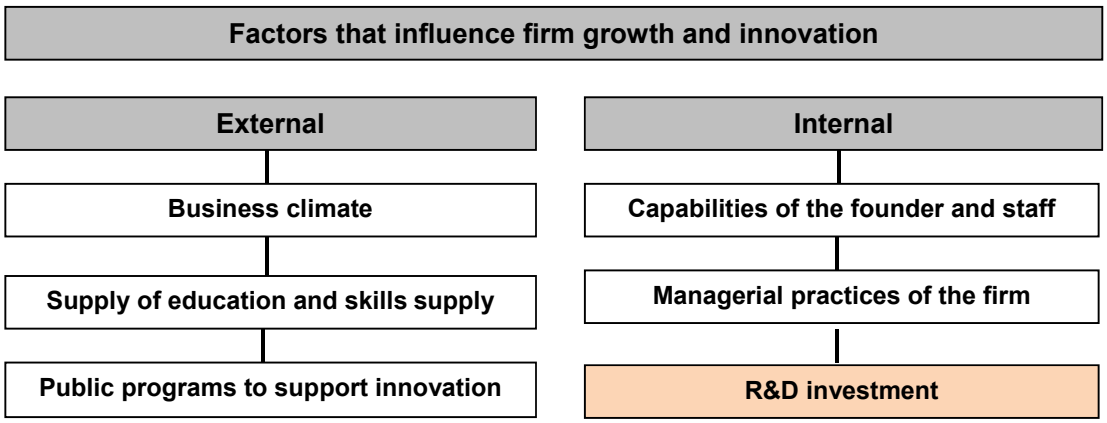
As such, South African start-ups and SMEs have a vital role to play in the development and upliftment of the country and its people, particularly through the ability of their businesses to create jobs and provide solutions that have a meaningful, sustainable socio-economic impact (SiMODiSA, 2014).

1.1.4 Research Problem

Given that innovation, knowledge and R&D are being seen as key factors in driving sustained long-term economic growth and competitiveness, increasing interest is being shown by policy makers on seeking ways in which these factors are designed and generated.

As shown in Figure 1, innovation activity is influenced by a range of internal and external factors, including R&D investment (Dessus, Goddard, & Hanusch, 2017). One of the instruments increasingly adopted by governments worldwide to stimulate innovation is fiscal incentives such as R&D tax incentives.

Figure 1: Internal and external factors affecting innovation



Source: (Dessus, Goddard, & Hanusch, 2017)

Countries across the globe are using tax incentives to stimulate R&D. During 2015, 28 of the 34 Organisation for Economic Co-operation and Development (OECD) countries and several non-OECD economies (such as Brazil, China, India and South Africa) offered R&D tax incentives to sustain business R&D. And as of 2016, 29 of the 35 OECD countries, 22 of 28 European Union (EU) countries and a number of non-OECD economies provide tax relief on R&D expenditures. (OECD, 2017)

In addition, given that more needs to be done globally to help SMEs and start-ups play a greater role in driving innovation, job creation and growth, and social value; several countries provide special treatment (implicitly and/or explicitly) to start-ups and/or SMEs investing in R&D to support them in realising their potential.

Given the role played by R&D investments as a means of stimulating innovation and the need to help SMEs and start-ups play a greater role in innovation, this research report aims to explore whether the South African R&D tax incentive benefits small and medium-sized enterprises and start-up companies by comparing various design features of the South African R&D tax incentive against some other countries' R&D tax incentives.

1.1.5 Research Question

Focusing on the needs of SMEs and start-ups, how does the SA R&D tax incentive compare to some other countries R&D tax incentives in terms of administrative and compliance considerations and targeted tax relief provisions?

The comparative analysis is based on principles of good practice established in a study conducted by the European Union (2014). The study identified and evaluated 83 separate R&D tax incentive programmes in 33 countries, including members of the European Union, Canada, Israel, Japan, Norway and the USA, and excluding South Africa. Each incentive programme was evaluated in terms of three broad categories; scope, targeting and organisation. Within each category were subcategories, where each subcategory was given a score representing principles of good practice, neutral or not recommended. (The Centre for International Economics, 2016)

Sub – Questions

- Based on international practices, what are the principles of good practice for R&D tax incentives in terms of administrative and compliance considerations and targeted tax relief provisions which focus on SMEs and start-ups?

- What are the design features of the SA R&D tax incentive with regards to administrative and compliance considerations and targeted tax relief provisions which focus on SMEs and start-ups?

- In terms of administrative and compliance considerations and targeted tax relief provisions, how does the SA R&D tax incentive compare to principles of good practice?

1.1.6 Research Objectives

The research objectives to be pursued are:

- To provide the policy rationale and objectives of the R&D tax incentive.

- To analyse the main features that shape the design of the R&D tax incentive and ensure a relevant and attractive incentive for SMEs and start-ups.

- To provide principles of good practice in relation to:
    - Administrative and compliance considerations – that is, does the process operate smoothly (speed, ease of use) for SMEs and start-ups?
    - Targeted tax relief provisions focussing on SMEs and start-ups – that is, are the "rules" appropriate for SMEs and start-ups?

- To provide an overview of South Africa's R&D tax incentive.
- To conduct a comparative analysis of the South African R&D tax incentive against principles of good practice.

- To analyse the key issues which may arise from the comparative analysis.

1.1.7 Scope and Limitations

The following does not fall within the scope of this research paper:

- R&D and eligible activities – that is, which types of R&D costs, activities, etcetera are eligible for tax relief

- Types of tax instruments – that is, tax credits versus allowances

- Volume based versus incremental schemes – that is, does the tax incentive apply to all qualified R&D expenditures (volume based) or only to the additional amount of R&D expenditure above a certain base amount (incremental)

1.2 Rationale for the Study

The rationale behind this research paper is based on the proposition that improving the design (that is, targeted relief provisions and administrative capacities) of the South African R&D tax incentive can help better support the emergence of SMEs and start-ups and help improve their growth potential and in turn South Africa's low growth environment.

In the World Bank's latest economic update on South Africa, focusing on Innovation for Productivity and Inclusiveness; the World Bank underscores the large untapped potential of innovation that could be mobilized to advance South Africa's economic and social development goals (Dessus, Goddard, & Hanusch, 2017). The World Bank's report also notes that although South Africa's ranking on the international metrics for innovation and competitiveness is not completely dismal (refer to Table 1) (Dessus, Goddard, & Hanusch, 2017), factors such as the lack of new high-growth companies (e.g. SMEs and start-ups) threaten the country's longer-term competitiveness.

Table 1: Innovation and competitiveness indices

Country	Global Innovation Index 2016		Global Competitiveness Index 2016-17	
	Ranking (1-128)	Score (0-100)	Ranking (1-138)	Score (1-7)
South Africa	**54**	**35.85**	**47**	**4.47**
BRICS				
Brazil	69	33.19	81	4.06
China	25	50.57	28	4.95
India	66	33.61	39	4.52
Russia	43	38.50	43	4.51
Knowledge Economies				
Finland	5	59.90	10	5.44
South Korea	11	57.15	26	5.03
Switzerland	1	66.28	1	5.81
United States	4	61.40	3	5.70
Other African Economies				
Kenya	80	30.36	96	3.90
Mauritius	53	35.86	45	4.49
Nigeria	114	23.15	127	3.39

Source: World Economic Forum (2016), Cornell University, INSEAD, and the WIPO (2016)

Globally, high-growth SMEs and start-ups typically play a leading role in innovation. Therefore, nurturing and supporting them by promoting a climate that is more conducive to the entry and growth of new companies, and to risk taking and experimentation (Dessus, Goddard, & Hanusch, 2017) is required to ensure the strong economic and social impact innovation can provide.

The World Bank Economic Update on Innovation for Productivity and Inclusiveness, published in September 2017, also highlights government support programmes as a formidable strength of South Africa's innovation ecosystem (Dessus, Goddard, & Hanusch, 2017). The report further notes that there is scope to improve the effectiveness of public support for innovation. This includes, but is not limited to, simplifying the R&D tax incentive process and allowing companies that are not yet profitable to benefit from it (Dessus, Goddard, & Hanusch, 2017). This will in turn help to boost the emergence of and growth potential of SMEs and start-ups in South Africa.

Given that SMEs and start-ups are often innovation pioneers, another concern emanating from the World Bank report is the diminishing number of small and young companies when compared with other emerging markets, where such companies played a leading role in driving innovation (World Bank, 2017). This, as World Bank Lead Economist for Trade and Competitiveness, Gabriel Goddard says, makes the "improvement of factors that either stifle the emergence of young firms or reduce their growth potential all the more important to boost South Africa's innovation capabilities and overall impact".

Therefore, considering the significant role of R&D in improving a country's economic performance, the ability of well-designed tax incentives to promote R&D, and the transformative role played by SMEs and start-ups in driving innovation; it makes sense that the comparative analysis of the South African R&D tax incentive against other R&D tax incentives would be a valuable exercise.

1.3 Research Methodology

The research will be conducted through a normative literature review. Both primary and secondary sources of literature were reviewed.

In addition, various STI policy documents such as the 1996 White Paper on Science and Technology, the National Research and Development Strategy, and the "Ten Year Innovation Plan: Innovation towards a knowledge-based economy 2008-2018" were consulted.

The research approach also consisted of reviewing published information available in the public domain such as:

- government reports and public statements by key role players;
- reports and/or working papers published by relevant organisations researching on innovation and economic policy such as SiMODiSA Start-Up, the National Advisory Council on Innovation (NACI), Organisation for Economic Co-operation and Development (OECD), European Commission and the World Bank;
- published articles.

1.4 Chapter Outline

Chapter two encompasses the literature review and considers the following:

- defining key terms;
- policy rationale for R&D tax incentives and objectives for the R&D tax incentive;
- an analysis of the main features that shape the design of the R&D tax incentive and ensure a relevant and attractive incentive for SMEs and start-ups, focusing on targeted relief provisions and administration and compliance features;
- an analysis of principles of good practice as established in a study conducted by the European Commission;
- an overview of various R&D tax incentive programmes exhibiting principles of good practice;
- an overview of the South African R&D tax incentive; and
- South Africa's R&D tax incentive compared against principles of good practice.

Subsequently, the third chapter will aim to identify and analyse any key issues which may arise from the comparison between South Africa's R&D tax incentive and good practice principles.

Chapter four provides recommendations that seek to address the issue(s) identified and improve the relevance and applicability of the R&D tax incentive to and for SMEs and start-ups

Lastly, the conclusion in the fifth chapter will summarise the research report, highlighting key points drawn in the research.

2 Literature Review

Chapter 1 provided a general overview of the study, explaining the significance and purpose of undertaking the study as well as briefly discussing the methodology used to achieve the objectives stipulated.

Chapter 2 includes a literature review which will begin by defining SMEs and start-ups, explaining the various categories applicable to them. The chapter will then follow with the following:

- a discussion of the policy rationale and objectives of the R&D tax incentive;
- an analysis of various design features of a R&D tax incentive targeted at improving the relevance of the incentive to SMEs and start-ups;
- an analysis of principles of good practice established in a study conducted by the European Commission; and
- a brief overview of R&D tax incentive programmes around the globe exhibiting these principles of good practice.

Chapter 2 will then conclude with an overview of the current South African R&D tax incentive programme and its comparison against principles of good practice which were established in a study conducted by the European Commission.

2.1 Defining Key Terms

2.1.1 Introduction

The contribution of SMEs and the critically important role they play in economies is widely accepted, particularly regarding propelling job creation, enhancing competitiveness, stimulating economy-wide efficiency, innovation and alleviating poverty. Consequently, governments worldwide have embarked on the development of start-ups and SMEs. South Africa is no exception, with the National Development Plan stating that:

> Small and expanding firms will become more prominent and generate the majority of new jobs created. They will also contribute to changing apartheid legacy patterns of business ownership. They will be stimulated through public and private procurement, improved access to debt and equity finance, and a simplified regulatory environment. (National Planning Commission, 2011)

In addition, the NDP identifies the SME sector as pivotal in driving growth, setting out several ambitious goals for the sector - including a target for 90% of employment opportunities to be created by this sector by 2030 (SBP, 2014). As such, prioritising the advancement of start-ups and SMEs and strengthening the role they can play in the economic and social development of South Africa remains a critical challenge currently facing our country.

Since 1994, with the dawn of a new democratic era, the South African government has recognised the crucial role it needs to play in fostering an enabling environment for the development and growth of SMEs. To this end, in 1995, the government published the White Paper on National Strategy on the Development and Promotion of Small Business in South Africa*,* in which it outlined the role of SMEs in the South African economy and articulated a number of measures to help create a conducive and enabling environment within which small businesses can operate.

Since the publishing of the White Paper, a number of initiatives and institutions have been put into place in pursuit of the objectives outlined and improve the operating environment for SMEs. Despite these efforts, various challenges still exist and government needs to continue addressing them and finding ways of creating an environment in which SMEs can grow and thrive.

2.1.2 Defining Small and Medium-Sized Enterprises (SMEs)

Defining an SME is important for policymakers in order to guide efforts, policies, development strategies and support programmes for the sector. The definition should be able to guide government in the identification of beneficiaries for state support, for instance through funding, tax concessions and procurement (Trade & Industrial Strategies, 2017). In addition, it should be easy to administer for both the businesses themselves and for government officials (Trade & Industrial Strategies, 2017).

2.1.2.1 International Overview

While the importance of the SME sector in any economy cannot be argued, defining an SME proves to be a challenging task, with the lack of a uniform definition resulting in confusion and difficulty with regards to SME measurement and a general understanding of the sector. This can be seen by the wide range of approaches taken by various institutions (for example; the OECD, World Bank, International Finance Corporation (IFC)) and governments across to globe in defining what an SME is (refer to Table 2). Be that as it may, because governments seek to develop and implement policies to support small business, it is important to define what that means.

While there is currently no universally accepted definition of a small business, there is a host of criteria which could be considered when defining it, including; turnover, number of employees, industry type, assets, etcetera. Some criteria are however used more widely, such as turnover and number of employees.

Table 2: Illustration of how SMEs are defined in various countries

	EU	USA	Asia (Malaysia)	Egypt	Ghana
Words	Small & Medium Enterprise	Small & Medium Business	Small and Medium Enterprise	Micro, Small & Medium Enterprise	Micro, Small & Medium Enterprise
Number of Employees					
Micro	< 10	0	< 5	1 to 4	Up to 5
Small	< 50	< 100	5 to 50	5 to 14	6 to 29
Medium	< 250	< 500	51 to 150	15 to 49	30 to 99
Turnover					
Micro	$3m	0	RM250 000	0	$10k
Small	$13m	0	RM250 000 to<RM10m	0	$100k
Medium	$67m	0	RM10m to RM25m	0	$1 million

Source: (National Credit Regulator (NCR), 2011)

	BRICS					
	Brazil		Russia	India	China	RSA
	Industrial	Commercial				
Words	Small & Medium Enterprise	Small & Medium Enterprise	Small & Medium Enterprise	Micro, Small & Medium Enterprise	Small & Medium Enterprise	Small, Medium & Micro Enterprise
Number of Employees						
Micro	Up to 19	Up to 09	0	0	0	< 20
Small	20 to 99	10 to 49	15 to 100	0	< 300	50 - 99
Medium	100 to 499	50 to 99	101 to 250	0	300 to 2000	100 - 200
Turnover						
Micro	0	0	0	< Rs50m	0	< R150k
Very Small	0	0	0	0	0	R150k to <R2m
Small	0	0	400m RUB max	Rs50m – 60m	< Y30m	R2m to R4.5m
Medium	0	0	1b RUB max	Rs60m – 99m	Y30m to Y300m	R4.5 to R50m

Source: (National Credit Regulator (NCR), 2011)

The acronym "SME" is generally used in the European Union (EU) as well as international organisations such as the World Bank (WB), the United Nations (UN) and the World Trade Organisation (WTO) (National Credit Regulator (NCR), 2011). "Small and medium businesses" or "SMBs" is mostly used in the USA (National Credit Regulator (NCR), 2011). In South Africa, the acronym “SMME” which stands for small, medium and micro-enterprises, is often used interchangeably with “SME”. In some African and non-African countries, “MSME” is used for micro, small and medium enterprises (National Credit Regulator (NCR), 2011).

2.1.2.2 Defining an SME in South Africa

As is the case internationally, there is currently no universally accepted definition of small and medium-sized business in South Africa (Davis Tax Committee, 2014). For example, the NDP, the National Small Enterprise Act, 1996 (Act 102 of 1996) and the Income Tax Act (Act 58 of 1962) as amended, as well as other statutes such as the Broad-Based Black Economic Empowerment (BBBEE) Act 53 of 2003 read with the BBBEE Codes of Good Practice, each have their own interpretations and definitions (Davis Tax Committee, 2014).

Definition in the National Development Plan

As outlined in the Davis Tax Committee's first interim report on small and medium enterprises, the NDP identifies three categories in the SME sector, namely: survivalist, lifestyle and entrepreneurial.

Survivalist businesses: are typically your home-based or street-based businesses who are largely cash businesses and have been established merely as a means of economic survival. Examples of survivalists include hawkers, taxi operators and casual construction workers. (Davis Tax Committee, 2014)

Lifestyle businesses: these are also your home-based businesses or businesses run from a single office. Such businesses are often in middle- and upper-class areas and are typically established as a means to a particular lifestyle with the owner often forgoing the certainty of being an employee in an existing business. Examples of such businesses would include doctors, electricians, engineers, accountants and consultant. (Davis Tax Committee, 2014)

Entrepreneurial businesses: such businesses are established by entrepreneurs who are looking to create something of long-term value (for example; develop a brand, grow market share, inventing a new process, product or even a new market), and continually seek to grow the business and make it more competitive. Entrepreneurial businesses are those considered most likely by the NDP to drive job creation. (Davis Tax Committee, 2014)

Definition in the Income Tax Act

For income tax purposes, two definitions are relevant with regard to "small or micro-sized" businesses, namely; a small business corporation as defined in section 12E(4) or a micro business per the Sixth Schedule.

Small Business Corporation

For tax purposes, the Income Tax Act provides a dispensation for a "small business corporation" (commonly referred to as "SBC"), where SBCs benefit from a reduced income tax liability through reduced income tax rates and an accelerated depreciation

allowance for movable assets. Not all small businesses qualify as an SBC as set out in section 12E(4) of the Income Tax Act. To qualify as an SBC, the business must be conducted as a close corporation, co-operative, private company or personal liability company, where all of the shareholders or members of that entity were at all times during the year of assessment natural persons. In addition, the following requirements must all be met in order to be regarded as a SBC:

i. The entity's gross income must be no more than R20 million for the year of assessment;

ii. No member or shareholder of the entity may, at any time during the year of assessment, hold any shares or have any interest in the equity of another company – subject to certain specific exceptions which include listed companies, collective investment schemes and others;

iii. Not more than 20% of the total receipts or accruals and capital gains of the entity may consist collectively of "investment income" and income from the provision of a "personal service"; and

iv. The entity may not constitute a "personal service provider" as defined in the Income Tax Act.

It is important to note what is defined as a "personal service", which for purposes of the SBC regime, is defined to include various field of activities and includes services provided by accountants, lawyers, architects, personal advisors, etcetera.

Micro businesses

The second definition to note in terms of the Income Tax Act is that of a micro business. As set out in Part 2 of the Sixth Schedule to the Income Tax Act, a person qualifies as a micro business if that person is (amongst other qualifying requirements relating to ownership and the types of business which may be carried on):

a) a natural person (or the deceased or insolvent estate of a natural person that was a registered micro business at the time of death or insolvency); or

b) a company where the qualifying turnover of that person for the year of assessment does not exceed an amount of R1 million.

Definition in the National Small Enterprise Act 102 of 1996, as amended

The South African official definition for a small business was initially introduced in 1995 in the White Paper on National Strategy on the Development and Promotion of Small Business in South Africa. The White Paper used the general term “small business” and the abbreviation “SMMEs” to define the diversity of small business and broadly classified small businesses into four categories, namely: survivalist enterprises, microenterprises, small enterprises and medium-sized enterprises (Trade & Industrial Strategies, 2017).

The broad classifications between the various types of small businesses provided by the White Paper formed the basis of the official definition in the National Small Business Act of 1996 as amended by the National Small Business Amendment Acts of 2003 and 2004 (NSB Act), which defines a ‘small business’ as:

> … a separate and distinct business entity, including co-operative enterprises and non-governmental organisations, managed by one owner or more which, including its branches or subsidiaries, if any, is predominantly carried on in any sector or sub sector of the economy mentioned in column I of the Schedule and which can be classified as a micro-, a very small, a small or a medium enterprise… *(*National Small Enterprise Act No. 102 of 1996, as amended)

As indicated, the NSB Act classifies small businesses into five distinct categories, namely; survivalist, micro, very small, small and medium-sized enterprises. Furthermore, it distinguishes small businesses by Standard Industrial Classification (SIC) sector or sub-sector and by classifying them according to key indicators, including the total full-time equivalent of paid employees, the total turnover, and the total gross asset value (excluding fixed property) (Trade & Industrial Strategies, 2017). Table 3 provides a summary of the broad definitions of SMMEs in the National Small Business Act (see full schedule in **Annexure A**).

Table 3: Broad Definitions of SMMEs in the National Small Business Act

Enterprise Size	Number of Employees	Annual Turnover (SA Rand)	Gross Assets, (excluding fixed property)
Medium	Fewer than 100 to 200, depending on industry	Less than R5m to R64m depending upon industry	Less than R5m to R23m depending on industry
Small	Fewer than 50	Less than R3m to R32m depending on industry	Less than R3m to R6m depending on industry
Very small	Fewer than 10 to 20 depending on industry	Less than R500 000 to R6m depending on industry	Less than R500 000 to R2m depending on Industry
Micro	Fewer than 5	Less than R200 000	Less than R100 000

Source: (National Credit Regulator (NCR), 2011), (National Small Enterprise Act No. 102 of 1996, as amended)

The various categories are described as follows:

i. **Survivalist enterprise:** such businesses are established as a means of economic survival and largely form part of the informal economy with limited opportunities for growing the business. The income generated is less than the minimum income standard or the poverty line. This category typically includes hawkers, etcetera. (National Credit Regulator (NCR), 2011)

ii. **Micro-enterprise:** With a turnover that is less than R200 000, these enterprises employ no more than 5 people and, as is the case with survivalists, typically operate informally. This category includes, for example, spaza shops. (National Credit Regulator (NCR), 2011)

iii. **Very small enterprise:** These enterprises employ fewer than 10 paid employees, except for the mining, electricity, manufacturing and construction sectors, in which the figure is 20 employees. These enterprises operate in the formal economy and have access to technology (National Credit Regulator (NCR), 2011).

iv. **Small enterprise:** The upper limit is 50 employees. Small enterprises are generally more established than very small enterprises and display more complex organisational practices. (National Credit Regulator (NCR), 2011)

v. **Medium enterprise:** The maximum number of employees is 100, but 200 for the mining, electricity, manufacturing and construction sectors. These enterprises comply with the law and are often characterised by the decentralisation of power to an additional management layer. (National Credit Regulator (NCR), 2011)

In a review by the organisation Trade and Industrial Strategies (TIPS) with regards to assessing the extent to which the NSB Act's definition had been adopted within the state, it was found that there had only been limited adoption of the official definition by government agencies and SMEs themselves, with alternatives being introduced in labour legislation, tax legislation and some Broad-Based Economic Empowerment Charters (Trade & Industrial Strategies, 2017).

These findings, coupled with findings from various other reviews and focus group discussions conducted by TIPS on the official definition, speak to the need to amend the definition so as to ensure that, amongst other things, targeting of state support programmes are improved. The development of a more appropriate and useful definition is required for the following reasons:

- The current definition is inconsistent with international practice, which favours a simpler formula (Trade & Industrial Strategies, 2017).

- The fact that the definition has not been adopted by a large number of government departments or by SMEs themselves (Trade & Industrial Strategies, 2017).

- The definition sector thresholds have not been steadily updated for inflation and therefore do not reflect the current realities of SMEs (Trade & Industrial Strategies, 2017).

In terms of a working definition of an SME for the purposes of their 2014 research paper, accelerating growth of small and medium enterprises in South Africa: Policy recommendations for enhancing the start-up / SME ecosystem in South Africa, SiMODiSA considered relatively simple thresholds applied under the Broad-Based Black Economic Empowerment (B-BBEE) framework, which identify Qualifying Small Enterprises as those businesses with a turnover of up to R50 million (SiMODiSA, 2014). With regards to the 'medium' portion of SMEs, SiMODiSA applied a practical approach that loosely considers medium-size enterprises as those with a turnover of R50 million to R100 million (SiMODiSA, 2014).

For the purpose of this study, the abovementioned working definition adopted by SiMODiSA is followed.

2.1.3 Defining Start-up Businesses

This type of business speaks to the number of years the business has been in operation. For the purposes of this study, a start-up business refers to a new business in the early stages of its lifecycle (SiMODiSA, 2014).

See **Annexure B** for the specific definitions that apply to SMEs and young firms assigned by some countries which provide preferential treatment to these organisations.

2.2 Policy rationale and objectives of the R&D tax incentive

2.2.1 Policy rationale - do governments need to fund R&D?

Innovation is critical in South Africa's growth, development and preparedness for emerging social, economic and environmental challenges. In addition, finance is important for innovation as it allows organisations to conduct research as well as develop and commercialise innovations. Unfortunately, accessing finance for innovation often proves to be a challenge, particularly so for SMEs and start-ups.

To address this, governments worldwide are key funders of R&D. There are various reasons why governments encourage and play a role in funding R&D, these include:

1. As is widely accepted, R&D is regarded as a crucial contributor to the long-run economic growth of economies.

2. R&D investments are key in addressing key societal challenges and building more inclusive economies. One way in which R&D investments help support social prosperity and well-being is through playing an important role in driving job creation, which is particularly important in times of crisis.

   This can be illustrated by government's ability to influence the success or failure of business through their support for R&D investments made by the business sector. For example, to help companies weather the storm of the financial crisis, some countries introduced more generous but temporary R&D tax incentives such as allowing a longer carry-forward of unused credits to the following years (Japan) (OECD, 2010).

3. R&D is a key factor for driving national competitiveness, which is a big advantage in today's global competitive economy where nations are engaging in a race for global advantage in innovation.

4. R&D investment is often perceived as risky – that is, low tolerance of risk and failure.

   In a market-based society there may be instances where, for some reason, markets fail to lead to efficient outcomes. These market failures tend to induce underinvestment in research and innovation below what is socially desirable and would include; high risks, sunk costs, uncertainty concerning the return on investment, long time lags before realising payback, or unavailability of funding, etcetera. Therefore, in such instances, there may be a role for governments to intervene to achieve a more efficient outcome for society (The Centre for International Economics, 2016).

5. R&D activity generates “public” goods – that is, the existence of spillovers from innovation.

   In the case of investment in R&D, it is generally recognised that government intervention is warranted due to the public good qualities of knowledge. That is, knowledge is (to a large extent) non-rival (that is, is not diminished by use) and non-excludable (that is, is freely available to all). In other words, the use of a piece of information by one organisation or individual does not necessarily reduce the benefit of that information to others (non-rival) and it is difficult to limit the use of a piece of information by another (non-excludable).

   Although there may be costs involved in accessing knowledge generated by another party, the non-excludable nature of knowledge is largely the focus of most justifications for government involvement in R&D efforts. In other words, the benefits in terms of the creation of new ideas, technologies or skills are also positively felt by other organisations or, more broadly, in an economy which can use these ideas, technologies or skills to develop or apply new technologies or innovations (European Commission, 2017a). These spillover benefits of knowledge mean that the social returns to investments in R&D are higher than the private benefits that can be realised by the party investing in the R&D. This likely underinvestment in R&D therefore provides a rationale for government intervention to increase investment in R&D towards socially optimal levels.

   Therefore, public funding for R&D is important to ensure that the level of investment in R&D is increased towards the socially optimal level thanks to positive knowledge spillover effects (European Commission, 2017a).

2.2.2 Policy objectives

The objective of the R&D tax incentive is to encourage R&D activity in the business sector that might otherwise not be conducted in the absence of government support. That is, to ensure that the incentive fuels additional investment in R&D, rather than simply encouraging R&D that would have otherwise occurred. This is important in order to maximise the economic and social returns that flow to South Africa by:

- Increasing the overall investment in R&D
- Promoting innovation, that is, development of new products, processes and services
- Promoting technological advancement and competitiveness
- Securing positive innovation spillovers to the rest of society through knowledge transfer and skills upliftment and retaining R&D workforce.

(Department of Science and Technology, 2015)

2.3 Design features of the R&D tax incentive

2.3.1 Introduction

How do tax incentives work?

Prior to discussing the various features that shape the design of the R&D tax incentive, this section will begin with a description of the different types of R&D tax incentives governments use to finance innovation, namely; tax credits, enhanced or super deductions and depreciation allowances.

R&D tax incentive – what is it?

An R&D tax incentive effectively reduces the marginal cost of undertaking R&D and innovation activities, and by lowering the private cost of R&D, encourages organisations to invest in innovation activities.

There are several types of incentives which fall under the below mentioned broad approaches used for tax incentives – namely, tax credits, super or enhanced deductions and tax allowances. These can be classified as follows:

- Tax credits: A tax credit is an amount subtracted directly from the tax liability due after the liability has been calculated. In other words, a tax credit affects corporate taxes directly instead of taxable income. With tax credits, the tax incentive is the product of the applicable tax credit rate and qualifying R&D expenditures.

- Enhanced or Super deductions: In this case, the taxpayer can deduct a larger amount than their actual R&D expenditures. This is because enhanced deductions allow the taxpayer to deduct 100% of the eligible R&D expenditures plus an additional deduction equal to a certain percentage of qualifying expenditure. In this case, the tax incentive is the product of qualifying R&D expenditures, the applicable tax allowance, and the applicable corporate income tax rate.

- Depreciation allowances: As is the case with enhanced / super deductions, depreciation allowances allow for a deduction from taxable income. These tax deductions recognise the fact that the value of an asset diminishes over time due to usage, and accordingly, R&D depreciation allowances are granted on capital R&D expenditure.

Based on the European Commission's study on R&D tax incentives, R&D tax credits are the most popular type of R&D tax incentive (present in 21 countries), followed by enhanced allowances for expenditure on R&D (16 countries) and accelerated depreciation (13 countries). (European Commission, 2014a)

2.3.2 The Design of a Tax Incentive

How can government use the R&D tax incentive to help create an enabling environment that nurtures SMEs and start-ups and allows them to thrive?

The generosity of public support for R&D is inherently linked to the design of the tax incentive (Appelt, Bajgar, Criscuolo, & Galindo-Rueda, 2016). Support for R&D through tax incentives can take the form of advantageous tax treatment of R&D expenditure (expenditure-based provisions) or preferential treatment of incomes from licensing or asset disposal attributable to R&D or patents (income-based provisions) (Appelt, Bajgar, Criscuolo, & Galindo-Rueda, 2016). This research paper will focus on the former.

There is a wide variety of ways in which countries providing R&D tax incentives have shaped the design of the incentive. This illustrates how, despite the incentive being a generic policy instrument, the specific design of the R&D tax incentive can differ substantially across countries. This also means that policy makers can learn from other countries, particularly from those which have had their incentive programmes in place for a long period of time, in terms of designing an effective R&D tax incentive programme.

The various differences in the design of a R&D tax incentive programme can be divided into three main categories (European Commission, 2014a):

1. **Scope of the instrument**: How does the tax incentive work? That is, how is the incentive applied and which expenditures are eligible? (Department of Science and Technology, 2016)

2. **Targeting**: Does the instrument target specific types of firms, explicitly or implicitly? (Department of Science and Technology, 2016)

3. **Organisational practice**: How does the application procedure work (that is, administrative practices) and is the tax incentive evaluated? (Department of Science and Technology, 2016).

As highlighted in Chapter one, this research paper will focus its analysis on the targeting and organisational practice design elements of a R&D tax incentive.

2.3.3 Targeting

Despite the neutrality of tax incentives (that is, tax incentives are generally seen as the more market-based, non-discretionary alternative to direct support such as grants), several countries make support more generous for certain target groups. For instance, some R&D tax incentives are targeted towards particular types of organisations, industries or activities (Appelt & Galindo-Rueda, 2017).

2.3.3.1 Explicit targeting

R&D tax incentives can be shaped in a way which addresses particular target groups. These targeted measures may reflect government's view that some groups of organisations with observable characteristics (e.g. size or age, region) need extra support, have strong innovation activities and/or can be more responsive to a given unit of financial support (European Commission, 2014a). Therefore, the scope and type of targeting can, therefore, depend on the specific policy issue at hand (European Commission, 2014a). As shown in Figure 2, targeting can be defined over different aspects. Also, the various targeting characteristics can overlap thereby specifying a very particular target group.

Many countries offer preferential treatment to SMEs and start-ups to try and alleviate the challenges they face, such as difficulties in attracting finance, lack of cash flow, etcetera. Tax incentives can also have a geographical focus or promote R&D in specific industries that are considered either to be of strategic importance or face increased challenges (European Commission, 2014a). Furthermore, R&D tax incentives can also be tied to certain types of technologies; for example, environmentally friendly technologies (European Commission, 2014a).

Figure 2: Targeting of tax incentive programmes across various countries

Size
• France
• Greece
• Hungary
• Japan
• Malta
• Norway
• Poland
• Portugal
• United Kingdom
• United States

Age
• Belgium
• France
• Israel
• Netherlands
• Portugal
• United States

Legal Status
• Austria
• Bulgaria
• Canada
• Czech Republic
• Finland
• Malta
• Netherlands
• Poland
• Slovenia
• Sweden

Region
• Canada
• Greece
• Israel
• Poland
• Spain
• United States

Field of activity / type of technology
• Belgium
• Bulgaria
• Canada
• Greece
• Israel
• United States

Source: (European Commission, 2014a)

2.3.3.2 Implicit Targeting

In addition to explicit targeting, a number of other design considerations implicitly favour organisations of different size and age, or those with low or no profits (which would, most notably, include start-ups and SMEs). These include brackets and ceilings, carry-over provisions and cash refunds (European Commission, 2014a).

Carry forward Provisions

Providing organisations with the ability to carry forward any unused tax allowance or credits is crucial for the effectiveness of a R&D tax incentive programme as it enables organisations to take full advantage of the tax incentive and provides them with more flexibility in their investment decisions (MME & Nestle, 2015).

In practice, companies will not always have sufficient taxable income to fully benefit from the R&D tax incentive, which implies that a certain portion of the allowance or credit that the company is entitled to will remain unused (Van Pottelsberghe, Megally, & Nysten, 2003). Therefore, making the ability to carry forward the unused portion of the allowance or credit is another type of targeting.

Carry forward provisions are important tools to avoid unfair biases with respect to SMEs and start-ups. This is because SMEs and start-ups tend to have limited current corporate income taxes against which the allowance or credit can be applied and/or are carrying forward accumulated losses from previous periods.

As shown on Table 2, carry forward provisions are in place in most OECD and partner economies (Appelt & Galindo-Rueda, 2017). In the various countries, companies can carry forward unused allowances or credits over different periods of time. For example, in Poland companies can carry forward the unused portion for three years, twenty years in the United States of America, and over an indefinite period in various countries including South Africa (Appelt & Galindo-Rueda, 2017).

From a financial point of view it should be noted that carry forward provisions are not the perfect tool to avoid inequality with respect to start-ups and SMEs. This is due to the time value of money effect which, when applied, puts start-ups and SMEs at a disadvantage (Van Pottelsberghe, Megally, & Nysten, 2003). Based on the time value of money, the present value of a certain amount is worth more than the same amount in the future. Therefore, due to their cash flow constraints, start-ups and SMEs are more likely to be subject to this effect as they would only be able to utilise the unused allowance or credit once they become profitable sometime in the future.

Cash Refund Mechanism

Cash flow constraints can prevent start-ups and SMEs from investing in innovative projects, commercialising ideas, covering working capital requirements, etcetera. Where a tax allowance or credit is refundable, organisations are provided with cash relief for the earned but unused portion of the allowance or credit. Refundability can

be particularly beneficial for start-ups and SMEs (who are often in an assessed loss position) by boosting cash flow thereby addressing possible liquidity constraints inhibiting further development and growth, and by bringing forward the tax benefit. Given the time value of money, the timing of the cash refund would be as important as the refund itself (Van Pottelsberghe, Megally, & Nysten, 2003).

On page 7 of its 2014 report, A Study on R&D Tax Incentives, the European Commission found:

> As R&D expenditure may precede revenue generated by innovation by several years, it is good practice to provide a carry-over facility and an option to receive the benefit even in case a company is not profitable (cash refunds). Such features offer companies more flexibility and certainty for investment decisions. **This is especially relevant for young companies that typically are not profitable in the first years of operations** [own emphasis]. (European Commission, 2014a)

While carry-over provisions are common across OECD and other major economies, only 12 out of the 29 OECD countries that provide tax support for R&D in 2016 offer refundable (payable) or equivalent incentives (Appelt & Galindo-Rueda, 2017).

Table 4: Treatment of unused claims in OECD, EU and other major, economies, 2016

Carry-forward option	
3 – 5 years	Belgium (R&D TC), China, Czech Republic, France (large companies), Greece, Korea, Poland, Slovak Republic, Slovenia
6 – 10 years	Portugal, Romania, Russian Federation (R&D TA)
14 – 20 years	Canada, Hungary (R&D TC), Spain (unreduced, non-payable TC), United States
Indefinite	Australia, Belgium (R&D TA), Chile, Ireland, Italy, Latvia, Lithuania, South Africa, Turkey, United Kingdom

Source*:* (Appelt & Galindo-Rueda, 2017)

Brackets and Ceilings

Another way in which countries can implicitly target certain groups of companies is by imposing brackets and ceilings.

Imposing a ceiling on the amount that companies can claim can be effective in increasing the relative generosity of the tax incentive towards start-ups and SMEs (Appelt & Galindo-Rueda, 2017). This is because the upper limits are more likely to be attained by larger companies than start-ups and SMEs. In addition, such provisions also work to manage the overall financial burden on the public finances (Appelt & Galindo-Rueda, 2017).

On the other hand however, imposing a minimum threshold would often serve to exclude small companies from accessing benefits under a R&D tax incentive programme. Therefore, imposing a minimum threshold would not be attractive for start-ups and SMEs as it puts them in a disadvantageous position.

2.3.4 Organisational Practice

Administrative capacities

The administrative capacities of a tax incentive programme for business R&D are important for its success as they determine the operational efficiency of the instrument (that is, speed, and ease of use), which also affects the compliance costs of organisations (European Commission, 2014a).

This theme is highlighted in SiMODiSA's report on policy recommendations for enhancing the start-up / SME ecosystem in South Africa, which lists various important principles that start-ups and SME stakeholders consider that a R&D tax incentive should embody in order to improve its attractiveness and uptake (SiMODiSA, 2014).

The above-mentioned principles include:

i. A simple and cost-effective application form and process should be implemented so that start-ups and SMEs can apply.

An important aspect of the administrative procedure of a R&D tax incentive programme is an effective application procedure. That is, ensuring that the programme is simple and straightforward to understand and interact with, thereby minimising the compliance burden to companies (Ferris, Finkel, & Fraser, 2016).

The majority of countries that provide a R&D tax incentive offer the possibility of an online application together with a 'one-stop' application process. This is crucial in terms of enhancing the efficiency of the incentive programme as it reduces the administrative burden for governments and compliance costs for organisations. (European Commission, 2014a)

Additionally, having information programmes helps to increase the awareness and understanding of the availability of the R&D tax incentive. Providing public sessions, increasing the availability of individuals to field possible enquiries, collaborating with industry associations to develop advisory programmes for first-time and smaller claimants, and making greater use of internet sites are all ways in which to increase the transparency and accessibility of R&D tax incentives (OECD, n.d).

ii. A speedy turn-around time on pre-approvals and/or refund time.

A company's interest in utilising the R&D tax incentive will also depend on how swiftly it is delivered (European Commission, 2017b). With a preapproval system, taking a long period of time to provide companies with a decision on the success of their pre-approval makes it difficult for companies to plan their investment. It also acts as a deterrent to companies with smaller projects to apply (Department of Science and Technology, 2016).

iii. A dispute resolution process

Most people can agree that preventing disputes is by far the best way of resolving them. Due to a multitude of reasons, this cannot always be achieved. As such, a dispute resolution process with a clear appeal procedure is recommended as it is likely to increase the confidence of businesses in the R&D tax programme (European Commission, 2017b).

While not specifically included as a separate design feature of a R&D tax incentive, OECD country experience also highlights the following key areas with regards to the administration of a R&D tax incentive (OECD, n.d).

- Awareness – that is, are companies aware of the R&D tax incentive?

  Encouraging more companies, particularly SMEs and start-ups, to undertake R&D is an important part of the objective of any R&D tax incentive programme, and this cannot be achieved if companies are not aware of the incentive. As such, most countries engage in promotion and communication activities such as the provision of guidelines on the website of the authority delivering the tax incentive, various agencies arrange workshops, conferences and webinars targeting both the potential claimants, as well as intermediaries (business associations, tax advisors, auditors, etcetera.) (European Commission, 2017b).

- Understanding – that is, other than understating the eligibility criteria (which is not within the scope of this research paper), do companies understand the application and claims process?

The objective of the R&D tax incentive is to induce companies to undertake more R&D than they would have done otherwise. To this effect, the administration rules and practices must therefore be understandable (European Commission, 2017b). Therefore, efforts to ensure that applications and claims are correct reduce administrative burdens for both businesses and authorities (European Commission,

2017b). In addition, accurate applications and claims contribute to businesses getting the incentive they are entitled to (European Commission, 2017b).

2.4 Principles of good practice

In terms of the relevance of a R&D tax incentive to SMEs and start-ups, what aspects constitute a well-designed R&D tax incentive programme and what design features should be avoided?

In order to determine what course of action(s) would need to be undertaken in order to improve the relevance of the R&D tax incentive to SMEs and start-ups, and to reduce the barriers which impede its uptake by SMEs and start-ups, an understanding of the principles of good practice relating to a R&D tax incentive programme is required. As such, this section will seek to establish what the principles of good practice are. This will be done with reference to a benchmarking exercise conducted by the European Commission.

In 2014, in order to identify good practice principles, the European Commission conducted a comprehensive cross-country comparison and benchmarking exercise of different R&D tax incentives (European Commission, 2014a).

The European Commission's study identified and evaluated 83 separate R&D tax incentive programmes in 33 countries, including members of the European Union, Canada, Israel, Japan, Norway and the USA, and excluding South Africa. Each incentive programme was evaluated in terms of three broad categories; scope, targeting and organisation. Within each category were subcategories, with each subcategory representing principles of good practice. (The Centre for International Economics, 2016).

Principles of good practice based on the European Commission's study

Table 5 and Table 6 describe the 'good practice' and 'not recommended' recommendations in respect of targeting and organisational practices, for R&D tax incentives based on the European Commission's study (European Commission, 2014a). In addition, each subcategory is briefly discussed.

2.4.1 Targeting

Table 5: Benchmarks for the target of R&D tax incentives

Subcategory	Good Practice	Not recommended	Neutral
Firm size	No targeting on firm size	Targeting of different large, multinational firms	Targeting of SMEs
Firm age	Targeting young firms	Targeting of incumbents	No targeting based on firm age
Minimum R&D expenditure	No minimum	A very high threshold, which is equivalent to targeting large firms	
Brackets & ceilings	No brackets	Lower rate for smaller amounts	Ceilings
Negative tax (refunds)	Yes, for young firms	No refunds	Not Applicable
Carry forward provisions	Yes	No carry forward provision	Not Applicable

Source*:* (European Commission, 2014a)

2.4.1.1 Firm size

Providing a more generous incentive for small firms is not necessarily desirable.

There is no reason, supported by empirical evidence, which explains why a R&D tax incentive programme's generosity should vary with firm size. Rather, it is submitted that age, rather than size, is the main common feature among innovative firms. In addition, it has been found that the gap between social and private returns to R&D is more profound for large firms (Bloom et al 2013 cited in (European Commission, 2014a). That is, spillovers from large firms are potentially larger which implies that knowledge spillovers are not necessarily stronger for small firms (European Commission, 2014a).

That being the case, it is not recommended practice to target large multinational firms. Such companies have better access to finance and are able to take advantage of cross-border tax planning opportunities that put them at an advantageous position as compared with domestic companies (European Commission, 2014a).

2.4.1.2 Firm age

Young firms, particularly start-ups and SMEs, face more difficulties obtaining access to external finance. This is because they lack collateral and a track record that can provide a greater level of comfort and certainty for financiers. Targeting young firms will help to alleviate these barriers to entry, thereby stimulating competition and pressure on incumbents to innovate (European Commission, 2014a).

Preferential treatment of incumbent firms is not recommended as this will result in the reduction of incentives for new entrants to innovate, thereby reducing competition (European Commission, 2014a).

2.4.1.3 Minimum R&D expenditure

Although minimum expenditure requirements may reduce the administrative costs of an R&D tax incentive programme, they are not recommended as they may bias the incentive against small or young companies who tend to have lower R&D budgets (European Commission, 2014a).

2.4.1.4 Brackets and ceilings

Brackets and ceilings on expenditure indirectly target the R&D tax incentive based on firm size. This is because expenditure on R&D for small companies tends to be small compared to larger companies. As has been argued previously, there is no justification for targeting the R&D tax incentive based on firm size (European Commission, 2014a).

Brackets and ceilings may also have the unintended result of distorting R&D planning by companies as they will have the incentive to distribute the expenses over time so as to maximise the tax benefit (European Commission, 2014a).

2.4.1.5 Negative tax (that is, cash refund mechanism)

Typically, start-ups and SMEs are in a loss-making position in the first few years of operation. This means that in the absence of a cash refund, they would be unable to benefit from the tax incentive simply because they have insufficient taxable income against which they can deduct the allowance (European Commission, 2014a). That being the case, delays in effecting cash refunds needs to be avoided in order to make this feature efficient.

2.4.1.6 Carry forward provisions

Providing carry forward provisions ensures that companies that are not yet profitable and have insufficient taxable income are able to benefit from the R&D tax incentive programme. This provision is particularly important for start-ups and SMEs, where there tends to be a considerable lag between R&D outlays and generated profits (The Centre for International Economics, 2016).

2.4.2 Organisational practice – administrative practices

Table 6: Benchmarks for the organisation of R&D tax incentives

Subcategory	Best Practice	Not recommended	Neutral
Decision/refund time	Minimum decision time	More than 1 year after R&D expenditure	Not Applicable
Electronic application and one-stop agency	Yes	No	Not Applicable

Source*:* (European Commission, 2014a)

2.4.2.1 Decision / refund time

The time it takes for authorities to make a decision on applications and to reimburse claimants should be as short as possible, preferably not exceeding a year (European Commission, 2014a). This is particularly important for SMEs and start-ups who have liquidity constraints and where access to external finance is crucial for growth. In the case of a refund, if the decision on the refund is made long after the investment has been made, SMEs and start-ups may not respond to the policy (European Commission, 2014a).

2.4.2.2 Electronic application and one-stop agency

It is considered as good practice to have a one-stop, online application procedure and guidelines for organisations as this will improve the take-up rates and the efficiency of the administrative process (MME & Nestle, 2015).

2.4.3 Summary of principles of good practice

Investment in R&D by businesses can be increased by better targeting the R&D tax incentive, and this can be achieved either explicitly or implicitly. Based on international experience, principles of good practice in terms of targeted relief measures focussing on start-ups and SME's are as follows:

Explicit targeting

In this case, the R&D tax incentive may be targeted only to SMEs and/or start-ups.

Implicit targeting

In addition to explicit targeting, a number of other design considerations also implicitly shift the relative generosity towards start-ups and SMEs. These include **cash refunds** and **carry-over provisions**, which are crucial in ensuring that the R&D tax incentive is relevant and more effective in stimulating R&D by SMEs and start-ups.

Carry forward provisions

The ability to carry forward unused tax allowances or credits is an important tool with respect to start-ups and SMEs. This is because such companies are typically already carrying forward accumulated losses from previous periods and/or have limited taxable income with which to offset against the allowance or credit.

Cash refund facilities

For start-ups and SMEs, the refundability of tax allowances or credits is considered as good practice as it will have an immediate effect on their cash flows.

Organisational practice – administrative practices

Principles of good practice in terms of the administration of a R&D tax incentive programme provide for a simplified, streamlined process for accessing the R&D tax incentive by companies. This is especially important in enabling SMEs and start-ups to benefit from the incentive and involves:

- Electronic application and one-stop agency
- Minimal decision / refund time
- Dispute resolution process

2.5 Good practice cases

Overview of various R&D tax incentive programmes exhibiting principles of good practice

2.5.1 Targeting

Explicit targeting

Over and above the general design characteristics that are relevant to all organisations, R&D tax incentive programmes can be further designed in such a way as to address the needs of particular target groups. This focus usually reflecting the respective government's view on parts of the economy requiring additional support and/or having the strongest innovative activities (European Commission, 2014a).

It is no secret that SMEs and start-ups often face greater difficulties in attracting finance. As such, many countries try to alleviate these capital market imperfections by offering preferential tax treatment to SMEs (e.g. France) and/or young start-up companies (e.g. Denmark) (European Commission, 2014a).

France: Crédit d'Impôt Innovation (CII)

France offers a tax credit targeted to SMEs, Crédit d'Impôt Innovation (CII), which was introduced in 2013 as an extension of the general R&D tax credit (Crédit d'impôt recherché - CIR). The CII is available solely to SMEs with the aim of inducing the competitiveness and growth of SMEs by encouraging them to raise their innovative activities. Under the CII, organisations that qualify as SMEs can benefit from a tax credit in respect of certain expenditure relating to downstream activities, that is, certain expenditure relating to prototypes or pilot trials of new products.

Description of good practice

In addition to a 20 percent tax credit being applied to eligible expenditure, companies that qualify as SMEs can carry forward any unused amount of the credit or can obtain a refund of the unused amount of the credit under certain conditions.

France: Jeune Entreprise Innovantes (JEI)

In addition, France also provides a tax credit for young innovative enterprises (Jeune Entreprise Innovantes – JEI*)* that are less than eight years old, and for which R&D expenditure is at least fifteen percent of the total expenses (European Commission, 2014a).

Although various reviews and evaluations of France's longstanding general R&D tax credit programme, Crédit d'impôt recherché – CIR which was introduced in 1983, had concluded that the CIR was effective in encouraging more R&D expenditure; France was of the view that it did not sufficiently address young, R&D intensive organisations who face additional challenges in obtaining finance (European Commission, 2014b).

Based on this view, France established the JEI, a new programme that targets young SMEs with relatively large R&D budgets by offering them preferential tax treatments (European Commission, 2014b).

Description of good practice

JEI is one of the few R&D tax incentive programmes that is explicitly targeted to young SMEs, where organisations can enjoy the benefits of the programme only for eight years thereby ensuring that support is given only at the very early stage of the business cycle (European Commission, 2014b). In addition, the programme was recommended as good practice by the European Commission in its 2014 study due to the programme's immediate refund option and short response time. The short response time is of significance as it translates to the organisations obtaining the funding faster thereby allowing them to invest the additional funds obtained in other activities (European Commission, 2014b). This is especially important for the target group of the instrument.

Denmark: Skattekreditordningen

As part of its growth plan for Denmark, the government introduced a R&D tax incentive programme (Skattekreditordningen). Proposed in 2013, a time where organisations, particularly SMEs and start-ups, were hard hit by the economic recession; Skattekreditordningen was aimed at promoting and strengthening the growth of the private sector.

The programme indirectly supports young, small organisations as only loss-making organisations qualify for the tax credit. This is based on the idea that the cash refund option will strengthen the liquidity of especially those small organisations in the start-up phase where the R&D activities have not yet yielded any income (European Commission, 2014b).

Description of good practice

Skattekreditordningen is unique in that it specifically targets its support to organisations that have liquidity problems by providing those that qualify a cash refund on losses made in the current year. Such approach is especially relevant for SMEs and start-ups that, in their initial years of operating, lack the financial resources required to grow and develop (European Commission, 2014b).

Implicit targeting

Some countries address the inadequate incentive that organisations with limited tax liability (that is, SMEs and start-ups) receive from the generic tax relief provisions by providing for:

- A refund option (can be exclusively available to SMEs and start-ups)
- A carry-over of tax benefits

While most of the R&D tax incentives offer a carry forward facility, cash refunds are available only in some countries. For example:

Australia, where SMEs may be able to receive a refund of their unused R&D tax credits in monetary terms, when the firm is in a tax loss position. Nevertheless, for ineligible companies, the tax credit is not refundable (OECD, 2015).

Similarly, in the **United Kingdom,** unused R&D deductions are able to be refunded to SMEs in a tax loss position (OECD, 2015).

2.5.2 Organisational practice

The administrative practices of a R&D tax incentive programme are important for its success.

Netherlands - Research and Development Promotion Act (Wet Bevordering Speur-en Ontwikkelingswerk - WBSO) and Research and Development Allowance (RDA)

The Promotion of Research and Development Act (WBSO), introduced in 1994, is a payroll withholding tax credit for R&D personnel costs. In 2016 this programme was merged with the Research and Development Allowance (RDA) and offers a tax benefit for non-personnel costs (European Commission, 2017b). The new programme continues under the name WBSO (European Commission, 2017b).

The WBSO is highlighted here as it presents administrative practices identified as good practice. Applications are submitted online and a one-stop agency, the Netherlands Enterprise Agency, is available and decisions are made within a short period of time (three months) (European Commission, 2017b).

Once the application is complete, internal technical consultants from the Netherlands Enterprise Agency review all information submitted to reach a decision on an organisation's application. Where an application is unsuccessful in full or in part, an organisation may lodge an appeal against the full or partial rejection of its application for a WBSO tax credit by submitting a notice of objection, with reasons. If the organisation does not agree with the decision taken on its notice of objection, then it can lodge an appeal with the Trade and Industry Appeals Tribunal. (European Commission, 2017b)

Other countries where the R&D tax incentive exhibits good practices and performs especially well in terms of its organisational practices include **Canada** and **Ireland**. These countries have thorough organisation systems which offer one-stop agencies and where applications can be done electronically (European Commission, 2017b).

Norway – SkatteFUNN

In terms of raising awareness, the Norwegian approach is worth noting. With the aim of inducing more organisations to undertake R&D and improving uptake of the incentive by businesses, the Research council of Norway increased its communication activities, spending a substantial amount of time and effort to increase awareness of the tax incentive programme (European Commission, 2017b).

In past years, Norway launched an updated website and a three-part seminar called "The SkatteFUNN school"; the aim of the school being educating intermediaries (incubators, mentors and industry consultants, etcetera.) in the use of the programme (European Commission, 2017b).

In addition, the Council also expanded their outreach activities with a series of events called "SkatteFUNN Open day." This involved presentations about the programme, presentations from local companies about their projects and experiences, and one-on-one meetings with the participants (European Commission, 2017b). During these one-on-one meetings, companies got to meet advisers who deal with the tax incentive programme and discuss their project ideas (European Commission, 2017b).

Canada – Scientific Research and Experimental Development Tax Incentive Programme (SR&ED)

In Canada, the Canada Revenue Agency (CRA) also places significant effort into its outreach activities for its Scientific Research and Experimental Development (SR&ED) programme. These include online videos and webinars to raise awareness (European Commission, 2017b). A dedicated service called the First-Time Claimant Advisory Service (FTCAS) is provided to all first-time claimants where the CRA assists them to “Get it right from the start” (European Commission, 2017b).

2.6 Overview of the South African R&D Tax Incentive

2.6.1 Background

The evolution of the science and technology landscape in South Africa has been guided by various interventions that developed with time since the dawn of democracy in 1994. One of these interventions, being the 1996 White Paper on Science and Technology, set the scene for transformation in the science and technology arena, introducing the notion of a 'national system of innovation' (NSI) (Manzini, 2012). As a construct used to characterise a country's collective efforts towards fostering technological innovation, a key function of the NSI entails providing fertile ground to encourage a culture of innovation (Manzini, 2012).

In 2002, following the introduction of the Science and Technology White Paper (1996), the South African government adopted a National Research and Development Strategy (NRDS) which emphasised the need to strengthen the place of research and development in promoting economic growth, and in turn growth in the knowledge economy. The aim was to increase South Africa's R&D spending to one percent of gross domestic product (GDP) over the medium term, with private institutions being recognised as key role players in reaching this target (Department of Science and Technology, 2002).

Against this background, government in consultation with the South African Revenue Service (SARS) and the National Treasury looked into the development of tax incentives to strengthen the attractiveness and affordability of carrying out R&D in South Africa (Department of Science and Technology, 2002).

The South African Research and Development Tax Incentive Programme is government's principal fiscal instrument for encouraging investment in R&D activities by the private sector. In line with the NRDS, the incentive was initially introduced in November 2006 with the purpose of stimulating higher levels of investment in scientific or technological R&D by private institutions.

Previously, the R&D tax incentive was governed by the provisions of Section 11B of the Income Tax Act 58 of 1962 (the Act). It allowed a taxpayer to deduct 100 percent of operational R&D expenditure and wear and tear allowances on new and unused

buildings and machinery purchased. Section 11D was then introduced to repeal section 11B of the Act and allowed a taxpayer to deduct an additional 50 percent on qualifying R&D expenditure, increasing the total tax deduction to 150 percent of qualifying expenditure. Since its promulgation, section 11D has undergone various amendments to streamline and simplify the regime. These refinements included, for example, amendments to the definition of R&D.

When initially introduced, SARS was responsible for administering the incentive and was required to deliberate on both the technical and financial merits of applications made. This undermined the success of the programme as SARS did not have the requisite skills and experience to evaluate the technical merits of applications.

In response, in a move to reinforce the policy intent behind the legislation, major amendments to section 11D were made in October 2012 which saw the Department of Science and Technology (DST) taking over the responsibility of the technical elements of the incentive and the introduction of a pre-approval application process.

Table 7: Synopsis of Legislative and Regulatory Changes

YEAR	DESCRIPTION
2006	The 150% R&D Tax Incentive deduction was introduced. Companies had to submit retrospective R&D Tax Incentive claims directly to SARS and only report to the DST about their R&D activities.
2012	The pre-approval process was introduced on 1 October 2012. Companies are required to obtain approval for R&D activities from the Minister of Science and Technology before claiming for a tax deduction from SARS.
2014 – 2015	Various new amendment became effective in 2014 and 2015 in terms of Taxation Laws Amendment Act (TLAA) 39 of 2013 and 43 of 2014. Refinements to the section, including amending the definition of R&D, were done to streamline and simplify the regime to ensure that genuine R&D is supported and to more closely align legislation to policy objectives.

Source: 2015/2016 Research and Development Tax Incentive Programme Report to Parliament

2.6.2 Overview of the Design of the South African R&D Tax Incentive

Targeting

For businesses in a tax loss position, any unused portion of the allowance is:

- Not refundable to the taxpayer
- Can be carried forward indefinitely (that is, until fully utilised)

Organisational practice

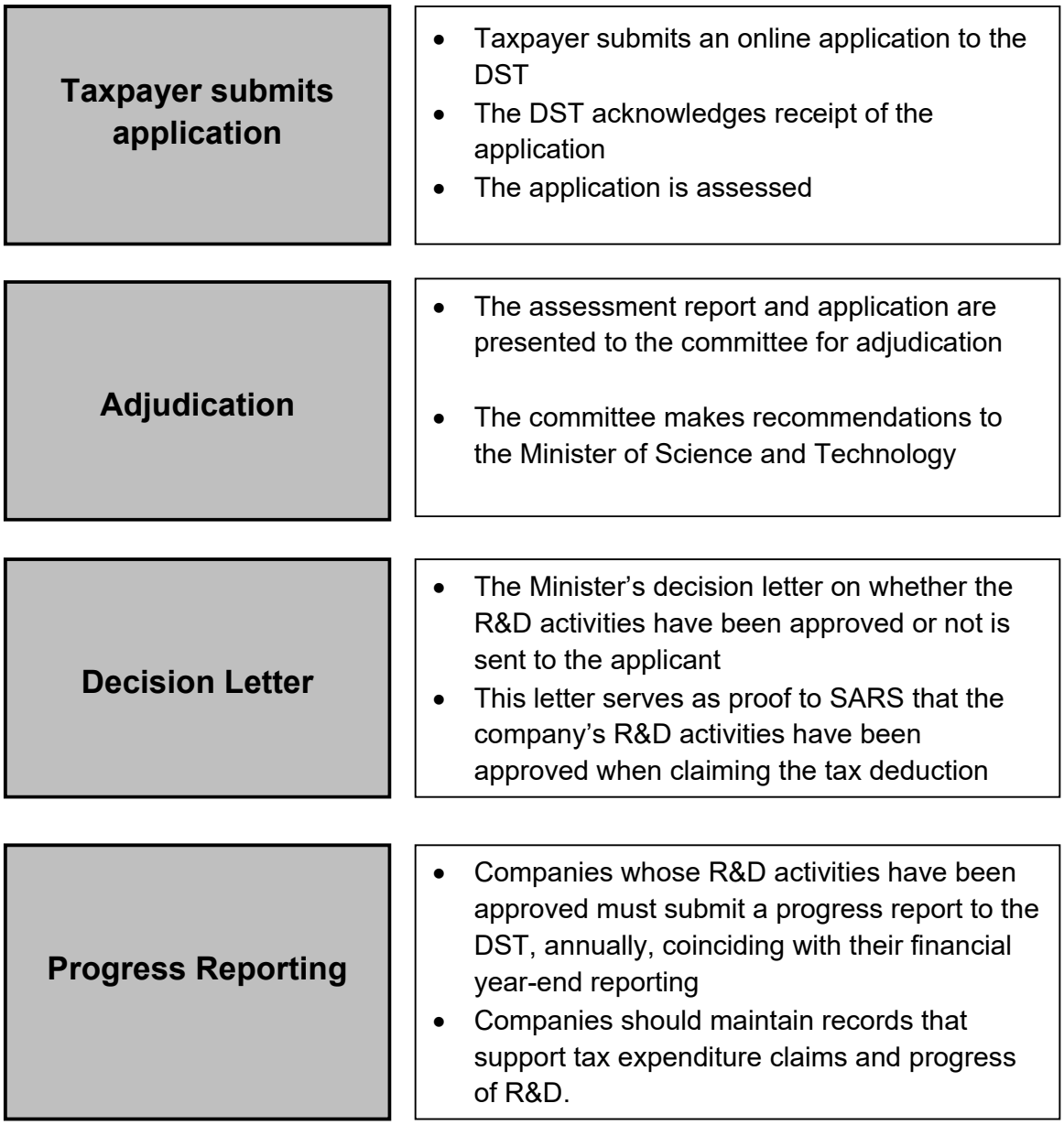
The introduction of the incentive, particularly the pre-approval process in 2012, has not been without its growing pains, with taxpayers expressing concerns regarding seemingly endless paperwork and red tape.

Various problems, including administration and capacity problems, experienced by the pre-approval adjudication committee led to substantial delays and backlogs in the processing of applications. Other issues of concern included the lack of guidelines on the interpretation of the legislation and the lack of an appeals process which taxpayers feel is procedurally unfair, particularly where applications are rejected long after application without any substantive reasons being provided.

The DST has gone some ways to rectifying the issues. For instance, in response to calls by taxpayers, tax practitioners and industry stakeholders, etcetera., the Minister of Science and Technology established a joint government-industry task team to evaluate the challenges identified and make recommendations on the improvements to the R&D tax incentive that will enhance the accessibility of the incentive to businesses.

Based on the task team's findings and recommendations, the government has implemented various measures including an online system of submitting applications. This will act to expedite the application process and improve turnaround times in providing decisions to applicants. In addition to registering and completing the application online, applicants will also be able to track the progress of their application and, in the future, be able to submit progress reports on approved R&D.

Figure 3: The Application Process



Source: (Department of Science and Technology, 2017)

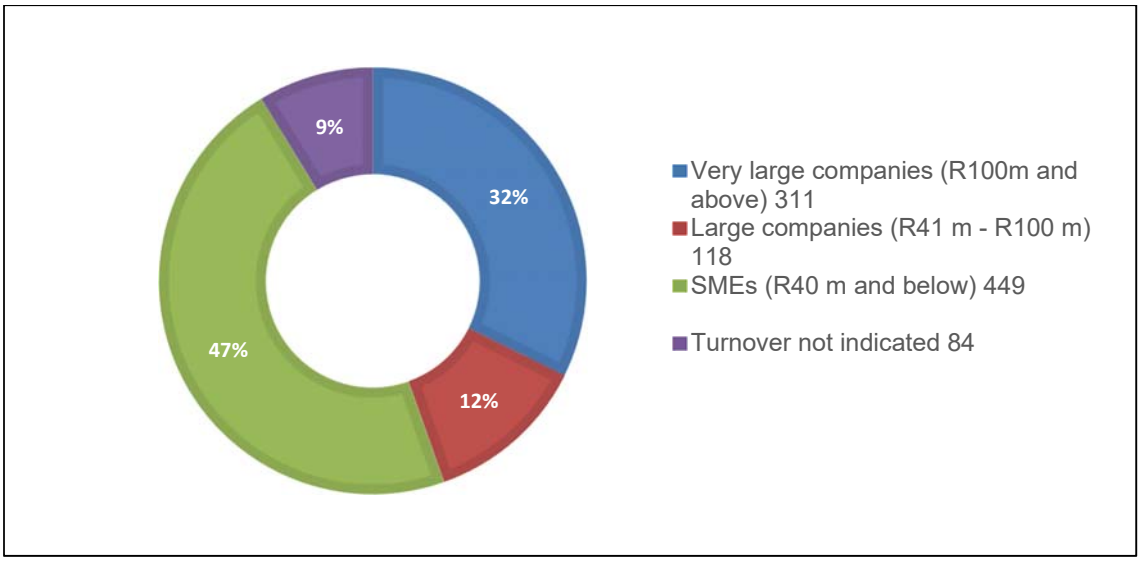
As the administration rules and practices of the programme must be understandable and user-friendly in order to improve uptake of the incentive by businesses, the DST also embarked on a number of activities to raise awareness and assist applicants to understand the conditions of the tax incentive programme. This includes the publication of updated guidance tools which are said to be user-friendly and easily accessible. Presentation of information about the R&D Tax Incentive on the DST website has also been updated. Government also expanded their promotion and

communication activities through various relevant stakeholder events and industry meetings which have been said to be good for information sharing and raising awareness.

2.6.3 Uptake of the incentive

The 2015/2016 DST report to parliament indicates that about 962 companies participated in the incentive from November 2006 to February 2016. Of this number, very large companies (turnover above R100 million) make up 32.3% of the companies, 46.7% are SMEs (turnover < R40 million) and the remainder comprises large enterprises (12.3%) and those that did not disclose turnover size (8.7%).

Figure 4: Profile of companies participating in the R&D Tax Incentive (Nov 2006 to Feb 2016)



Source: (Department of Science and Technology, 2017)

Based on the DST report, about R36.1 billion in R&D expenditure is estimated to be supported over the period November 2006 to February 2016.

In its February 2016 Budget Review, the National Treasury estimated that approximately R6 billion in tax revenue was forgone due to R&D tax deductions claimed during the period 2005/06 to February 2015. These figures represent deductions allowed by SARS on claims made by companies for each particular tax

year and are revised annually as companies submit their claims. These figures also include claims that have been made under section 11B which was applicable before November 2006 (Department of Science and Technology, 2017).

3 Gap Analysis

3.1 Gap analysis – identifying what needs to be done

Innovation is critical to the future of modern economies where improved competitiveness and economic growth is increasingly aligned to efforts to increase productivity through innovation (SiMODiSA, 2014). South Africa is no different with its prospects for improved competitiveness and economic growth relying, to a large extent, on knowledge generation and exploitation (that is, R&D).

In South Africa, SMEs and start-ups employ a significant proportion of the country's work force and contribute substantially to GDP. Consequently, SMEs and start-ups continue to be highlighted as a critical area of focus due their significant contribution to job creation, economic growth, and therefore the achievement of objectives outlined in the country's strategic development agenda and plan, the NDP. Unfortunately, despite this fact, South Africa still has a way to go in terms of creating a conducive and enabling environment within which SMEs and start-ups can grow and develop.

With an economy that has shown lacklustre growth rates and high unemployment rates, the South African government cannot afford to ignore the numerous barriers that cripple the growth and development of SMEs and start-ups. For example, such barriers would include an R&D tax incentive where the design and implementation thereof does not speak to the stage, capacity or interests of SMEs and start-ups, resulting in limited relevance and low uptake of the incentive by them (SiMODiSA, 2014). Therefore, creating a more supportive environment within which SMEs and start-ups operate would include the government's ability to create an innovation-friendly regulatory environment.

It is within this context and need that this research report is presented and performing a gap analysis will assist in identifying what needs to be done in order to improve the relevance of the R&D tax incentive to SMEs and start-ups, thereby enhancing its uptake by such companies.

Performing a gap analysis

This section will compare the targeting and administration design features of the South African R&D tax incentive against the principles of good practice identified in Chapter three, in so doing, identifying and highlighting the ‘gaps’ that exist or needs to be ‘filled’.

The table below provides a summary of the gaps identified.

Table 8 and Table 9 provide a summary of the gaps identified in respect of targeting and organisational practices, thereby outlining the roadblocks that need to be addressed for a relevant and attractive R&D tax incentive to be developed that is applicable to and beneficial for SMEs and start-ups (SiMODiSA, 2014).

Table 8: Gap analysis - targeting of R&D Tax Incentives

Subcategory	**Best Practice**	**SA R&D Tax Incentive**	**Gap**
Firm size	No targeting on firm size	Agrees with best practice – that is, no targeting in terms of firm size	None
Firm age	Targeting young firms	Neutral – that is, no targeting in terms of firm age	None
Minimum R&D expenditure	No minimum	Agrees with beast practice	None
Brackets & ceilings	No brackets	Agrees with best practice	None
Negative tax (refunds)	Yes, for young firms	No refunds available	Lack of a cash flow benefit in the form of a cash refund provides limited incentive for SMEs and start-ups since most are in a tax loss position
Carry forward provisions	Yes	Agrees with best practice	None

Table 9: Gap analysis - administrative practices of R&D Tax Incentives

Subcategory	Best Practice	SA R&D Tax Incentive	Gap
Decision/refund time	Minimum decision time	New measures introduced (for example - online application system), have resulted in improved turnaround times of decision making on new applications. This is a step in the right direction towards the 90-day turnaround time that the DST committed to in its strategic plan	Currently no cash refund mechanism is available
Electronic application and one-stop agency	Yes	Yes – electronic application system, however, no one-stop agency	No one-stop agency
Dispute resolution process	Yes	None	No appeal process in place, that is, legislation does not provide a recourse mechanism to applicants whose projects have been rejected

3.2 Analysis of key issues

3.2.1 Cash Refund Mechanism

SMEs and start-ups face various obstacles which often prevent them from investing in R&D activities, often due to restricted access to finance and uncertain cash-flows. Access to finance and strong cash flows are key drivers in the growth, development and survival of SMEs and start-ups, and the lack or restriction thereof is likely compounded by the current design of the tax incentive, which delays the ability of loss-making businesses to use their unutilised tax deductions.

As it stands, although the R&D tax incentive allows for tax losses to be utilised, it does cause a delay for loss-making companies who are prevented from claiming a tax deduction on their approved R&D expenditure until they are in a profit-making position and have taxable income against which to claim the deduction. This may take a number of years to achieve resulting in the seeming inability of SMEs and start-ups to access the tax deduction in a timely fashion, or even at all, thereby having a negative impact on the ability of SMEs to invest in R&D. As many SMEs and start-ups have a high chance of being in a tax loss position, this creates a cash-flow bias against them and leaves very little incentive for them to take up the incentive.

Additionally, cash flow management is in part affected by a company's ability to raise funds. As SMEs and start-ups typically find it more difficult to raise capital than larger, mature companies; refundable cash credits are largely designed to improve their cash flow to help fund their R&D activities. For the most part, companies that benefit the most from refundability are those that expect to be loss-making for a number of years.

3.2.2 Dispute Resolution

The Constitution

Prior to 1994, South African taxpayers were at the mercy of SARS. During this time, judicial review was subject to parliamentary supremacy or sovereignty. This meant that it was considerably difficult to challenge the lawfulness of decisions, actions or conduct of the Commissioner officials as such challenges were confined to very narrow common law principles.

On 27 April 1994, the constitutional order changed where South Africa became a constitutional state and parliamentary supremacy was replaced with constitutional democracy. Soon thereafter, in 1996, the Interim Constitution was replaced by the Constitution of the Republic of South Africa Act 108 of 1996 ("the Constitution") which contains the Bill of Rights.

The Bill of Rights

Enshrined in the Constitution is the Bill of Rights. The Bill of Rights consists of 27 fundamental human rights which capture and affirm the values underpinning the Constitution, and which provide taxpayers certain rights.

Of the various rights included under the Bill of Rights, the following rights would have a direct bearing on the powers conferred on SARS by the various fiscal statutes of the country; the right to privacy, equality, human dignity, property, access to information, just administrative action and access to courts.

Therefore, the Bill of Rights marked a material change in the nature and extent of the rights of South African taxpayers. This is because, as an organ of the state, SARS is required to respect, protect, promote and fulfil the various rights afforded to taxpayers in their dealings with SARS.

It should be noted, however, that the rights contained in the Bill of Rights are not absolute and are subject to limitation in terms of section 36 of the Constitution, which states that said rights may only be limited if the limitation is reasonable and just in an open and democratic society.

Dispute Resolution and the Constitution

Dispute resolution in respect of tax matters is governed by Chapter 9 of the TAA read together with the Rules promulgated under section 103 of the TAA ("the Rules"). These provisions and rules set out the rights and obligations of taxpayers and SARS with regards to the dispute resolution process.

Unfortunately, legislation does not currently provide an explicit process where R&D tax incentive applicants can seek recourse for projects that are not approved. This

means that if a company feels that an application has been wrongfully rejected, the only recourse available to them is to approach the courts.

Nevertheless, given that the Constitution is the supreme law, it goes without saying that the Constitutional rights afforded to a taxpayer need to be taken into consideration. In this instance, the Constitutional right that is most relevant is the right to just administrative action. In addition, of particular importance would be the Promotion of Administrative Justice Act 3 of 2000 ("PAJA") which entrenches the right to just administrative action.

Just Administrative Action

Section 33 of the Constitution affords every person the right to administrative action which is lawful, reasonable and procedurally fair, and the right to written reasons for administrative action that adversely affects rights. It also states that these rights must be enforced by judicial review by a court or, where appropriate, an independent and impartial tribunal.

i. Administrative Action

Naturally, the first question which arises is; what is meant by the term "administrative action"?

Section 1 of the PAJA defines administrative action as:

any decision taken, or any failure to take a decision, by-

(a) an organ of state, when-

i. exercising a power in terms of the Constitution or a provincial constitution; or
ii. exercising a public power or performing a public function in terms of any legislation; or

(b) a natural or juristic person, other than an organ of state, when exercising a public power or performing a public function in terms of an empowering provision, which adversely affects the rights of any person and which has a direct, external legal effect.

Therefore, a decision (or failure to make a decision) by SARS in exercising its power in accordance with legislation which adversely affects the rights of a taxpayer constitutes administrative action.

ii. Procedural fairness

In addition, the question as to what "procedurally fair" administrative action relates to also arises. More detail in this regard is provided in sections 3 of the PAJA, which deals with the procedures to be followed by SARS in making decisions that affect a taxpayer. Such procedures include those that must be followed both before and after a decision is taken.

iii. Reasons

It is generally considered good practice to provide an explanation of why one took a particular decision. Accordingly, the PAJA requires SARS to give adequate reasons for its administrative action to a person who requests them.

iv. Judicial Review

Lastly, the PAJA also states that people have the right to ask a court to review administrative action that they do not agree with. This means that where a taxpayer is unhappy with a decision taken by SARS, they can challenge the decision in court.

Before a taxpayer can ask a court to review an administrative action, the taxpayer has to comply with the rule of exhaustion of internal remedies.

Section 7(2)(a) of PAJA, provides that –

'. . . no court or tribunal shall review an administrative action in terms of this Act unless any internal remedy provided for in any other law has first been exhausted.'

Therefore, before a taxpayer can approach the court, they need to follow the procedures allowing someone to review or appeal a decision of the administration as set out by the law. This in effect means that a taxpayer can only ask for judicial review as a last resort.

R&D tax incentive programme - Handling of disputes

As stated previously, legislation does not currently provide an explicit dispute resolution process. This means that if a company feels that an application has been wrongfully rejected, the only recourse available to them is to approach the courts. This lack of a dispute resolution process is in conflict with the provisions of PAJA, specifically the rule of exhaustion of internal remedies.

In addition, given that most countries have a recourse mechanism whereby an applicant may dispute a decision without going to court, the lack thereof is not ideal as such a mechanism increases trust and transparency in the administration and overall working of the system (Department of Science and Technology, 2016).

On a positive note however, the recent improvements in turnaround times in providing a decision should translate into a reduction in the number of appeals brought forward. This is because the quicker turnaround time should translate into the applicant being given the opportunity to reapply, something which would not be feasible in instances where applicants receive rejections long after application.

This however, does not take away from that fact that a dispute resolution or appeal process is required to deal with any disputes with regard to the rejection of projects.

3.2.3 Lack of a one-stop agency

As there are different role players involved (that is, SARS and the DST) with regards to the R&D tax incentive programme, the lack of a one-stop office can result in a disintegrated process of providing support to SMEs and start-ups.

4 Recommendations

An analysis of the key issues identified in the previous chapter provided insight in terms of finding a way in which government can improve the relevance and applicability of the R&D tax incentive to and for SMEs and start-ups, thereby highlighting ways in which government can meaningfully enhance the attractiveness and uptake of the incentive by SMEs and start-ups.

4.1 Introduction

SMEs and start-ups are hugely important in our economy, with SMEs contributing a significant proportion to national GDP. Despite the key role they play in job creation, innovation, and driving economic growth; they still face significant obstacles in obtaining the necessary support to ensure their growth and development. One way in which government can lend their support is to make the incentive more meaningful for them. Based on the 'gaps' identified in Chapter three, this chapter will provide recommendations on how this can be achieved.

4.2 Refundable cash credit

As SMEs and start-ups are typically in a tax loss position, with limited cash flow, the fact that the cash flow benefit of the incentive is only enjoyed by the company when it is in a tax paying position makes the incentive relatively unappealing to SMEs and start-ups.

A recommendation has been submitted by the joint government-industry task team that the feasibility for enabling pre-profit SMEs and start-ups to have a refundable cash credit under section 11D be investigated (Department of Science and Technology, 2016). This recommendation is aligned with one of the findings of this paper as it addresses one of the key issues identified.

This is not to say that disallowing the refund of unutilised tax allowances, and instead requiring these to be carried forward, has no merit. A potential downside of a refund mechanism is that it could encourage the creation of artificial losses by taxpayers to reduce their taxable income, thereby potentially reducing government tax revenue as

well. For instance, it can attract unintended behavioural responses such as business restructuring (companies starting new small entities) in order to exploit the regime through tax avoidance, which could further drive up the cost of the programme (Department of Science and Technology, 2016).

In addition, given current strains on the fiscus, one appreciates that government may be hesitant to implement this recommendation as there may be a strong desire to rein in the programme's cost and ensure its long-term sustainability.

As such, requiring taxpayers to carry losses forward is an essential integrity measure. In the same vein though, the creation of an enabling environment for SMEs and start-ups also provides for a strong case in support of a change in the treatment of tax losses. This is because bringing forward the benefits of deductibility and providing a refund for eligible SMEs and start-ups, is likely to:

- provide some relief for the financing constraints faced by SMEs and start-ups, and
- have a positive impact on the propensity of SMEs to take up the incentive, invest in R&D and improve the chances of successful innovation

Therefore, although introducing a refund mechanism has its disadvantages, such a mechanism should be investigated. This mechanism provides a time value of money benefit to eligible businesses as it reallocates tax benefits from the future to the present. As such, it would make sense for SMEs and start-ups as a valuable source of cash flow given that they have little benefit in carrying forward the credit to future tax periods.

There are however provisions which government can introduce to help reduce the cost of a refundable cash credit. This includes limiting the size of the refund that can be received under the programme, with remaining unused credits to be treated as a non-refundable credit carried forward for use against future taxable income (The Centre for International Economics, 2016).

4.3 Dispute resolution process

At the end of the day, preventing disputes is the best way of resolving them, however, this is not always possible. Usually, in such instances where an application is rejected, there is a possibility for the applicant to appeal the decision. Having an appeals process raises the legitimacy of the programme thereby improving its relevance and attractiveness, especially among SMEs and start-ups who often cannot afford judicial appeal processes.

Once again, a recommendation has been submitted by the government-industry task team for the handling of appeals. This recommendation is aligned with one of the findings of this paper as it also addresses one of the key issues identified.

A multiple stage system of dispute resolution which has a clear appeals procedure whereby unsuccessful applicants can follow certain steps before resorting to the courts is likely to increase the confidence of businesses in the whole R&D tax incentive programme.

First and foremost, this would entail the company obtaining written, detailed reasons for the rejection by the DST. This will ensure that the company's grounds of objection are properly formulated and set out in detail the issues at hand, and that the company accurately addresses the basis on which the DST has issued its decision.

Also, as recommended by the task team, an additional step should be allowed where an applicant is free to present the information included in its application to the Adjudication Committee, thereby enabling them to respond to observations by the committee and amend, modify or stop their application entirely based on the feedback received.

Arguably, there is the possibility that a multiple stage system would create an administrative workload and create a backlog (Department of Science and Technology, 2016). This feeds into the following recommendation where opening additional lines of communication where regular updates and guidance on the incentive are sent out is recommended.

4.4 Awareness of the tax incentive programme

The research and development tax incentive is an important part of the government's business strategy, however, its effects will not be fully felt if the incentive does not reach its intended targets. For this reason, raising awareness for R&D tax incentive programme should be a priority.

Although not specifically identified as a gap under the gap analysis, it is recommended that government need to better engage the public to help increase uptake of the tax incentive programme. Raising awareness of the potential to claim the R&D tax incentive is a vital key to SMEs and start-ups accessing the available relief.

Government need to go beyond the provision of guidelines for applicants and consider, for example, distributing publicity/educational tools to educational establishments dealing with potential innovators. For example, engineering schools, research labs and innovation hubs. In addition to focusing on existing SMEs and start-ups, future innovators need to be educated to have regard to the R&D tax incentive programme.

Also, given the digital age we live in, government need to also better utilise one of the crucial pillars of the digital world – social media. As one of the most important forms of communication in today's digital age, it would make sense to utilise social media as a tool to disseminate information and interact with the public.

5 Conclusion

Innovation has become more important than ever and policies to stimulate it, and thereby stimulate economic growth, are high on the agenda worldwide. Against this backdrop, the role of government has become more important in generating sustained economic well-being for its country. This can be achieved by putting in place incentives, legislation and other mechanisms that promote a strong system of innovation. For example, governments in many countries have introduced an R&D tax incentive in an attempt to promote innovation through support for R&D which drives new idea generation and exploitation.

SMEs and start-ups are also increasingly seen as having a vital role to play in driving economic growth, employment and social value. In order to realise their potential of significant job creation and economic development, SMEs and start-ups need a conducive and enabling environment within which to operate.

There are many options available to the government when designing a R&D tax incentive and, based on the objectives set for the tax incentive, the choice between the options needs to be carefully fine-tuned. As such, there is scope with the R&D tax incentive to sharpen its focus by closer targeting organisations identified as vital for society but have special needs for support. For instance, many countries who offer an R&D tax incentive either explicitly or implicitly target SMEs and start-ups who are often loss-making and for whom the incentive can be a highly-valued source of finance.

Given South Africa's pressing need for growth, innovation and greater global competitiveness, we need to follow suit and therefore give serious consideration to developing a R&D tax incentive that is relevant, attractive and beneficial for SMEs and start-ups.

In its comprehensive cross-country comparison and benchmarking exercise, the European Commission (2014) identified good practice principles in the design of R&D tax incentives. Recognising that it is important to support SMEs and start-ups who, in their early stages, may not be seen as "winners" and are often in a tax loss position; good practice principles include provisions that promote the relevance and benefit of the incentive to SMEs and start-ups. These include, amongst others, a refundable

cash credit and carry forward provisions. In addition, it is generally good practice to have an appeals process catered for in the legislation and having ways in which continual and open communication channels for interaction with the public and other relevant stakeholders is maintained.

It is encouraging to see that the DST has gone some way to fixing the issues previously faced by the R&D tax incentive programme by implementing various recommendations put forth by a joint government-industry task team established to evaluate the R&D tax incentives and make recommendations on possible improvements to the incentive. Nevertheless, there is still more that can, and should be done to ensure that the incentive better meets the interests of SMEs and start-ups. This includes investigating the possibility of introducing a refundable tax credit. Also, in order to increase the confidence of businesses in the whole R&D tax incentive programme, government need to introduce an appeals process if a company's application is rejected. And lastly, uptake of the incentive by SMEs and start-ups will not improve if they are not aware of the incentive. As such, government need to continually communicate and engage with the public through various outreach activities.

6 References

African Union. (2014). *Science, Technology and Innovation Strategy for Africa 2024.* Available from: http://www.hsrc.ac.za/uploads/pageContent/5481/Science,%20Technology%20and%20Innovation%20Strategy%20for%20Africa%20-%20Document.pdf [Accessed: 17 October 2017]

Appelt, S., and Galindo-Rueda, F. (2017). OECD Review of National R&D Tax Incentives and Estimates of R&D Tax Subsidy Rates, 2016. Available from: http://dx.doi.org/10.1787/5jlr8fldqk7j-en [Accessed: 10 October 2017]

Appelt, S., Bajgar, M., Criscuolo, C., and Galindo-Rueda, F. (2016). R&D Tax Incentives: Evidence on design, incidence and impacts. *OECD Science, Technology and Industry Policy Papers, No. 32*. Available from: http://dx.doi.org/10.1787/5jlr8fldqk7j-en [Accessed: 10 October 2017]

Bloom, N., Schankerman, M., and Van Reenen, J. (2013). *Identifying technology spillovers and product market rivalry, Econometrica, vol. 81, no. 4.* Available from: http://eprints.lse.ac.uk/46852/1/__lse.ac.uk_storage_LIBRARY_Secondary_libfile_shared_repository_Content_Schankerman%2C%20M_Identifying%20technology%20Econ_Schankerman_Identifying%20technology%20_Econ_2014.pdf [Accessed: 20 February 2018]

Cornell University, INSEAD, and WIPO. (2016). *The Global Innovation Index 2016: Winning with Global Innovation*. Available from: http://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2016.pdf [Accessed: 25 October 2017]

Davis Tax Committee. (2014). *Small and Medium Enterprise Taxation Considerations, Interim Report, July.* Available from: http://pmg-assets.s3-website-eu-west-1.amazonaws.com/140714dtc_sme_report_for_public_comment_14_july_2014.pdf [Accessed: 5 May 2018]

Davis Tax Committee. (2016). Small and Medium Enterprise Taxation Considerations, Second and Final Report, April 2016. Available from: http://www.taxcom.org.za/docs/20160414%20DTC%20Final%20SME%20Report.pdf [Accessed: 5 May 2018]

Department of Arts, Culture, Science and Technology. (1996). *White paper on science and technology: Preparing for the 21st century*. Pretoria: Department of Arts, Culture, Science and Technology. Available from: http://www.esastap.org.za/download/st_whitepaper_sep1996.pdf [Accessed: 17 October 2017]

Department of Science and Technology. (2002) *National Research and Development Strategy.* Pretoria. Available from: http://www.esastap.org.za/download/sa-natrdstrat_aug2002.pdf [Accessed: 2 November 2017]

Department of Science and Technology. (2008). *Ten Year Innovation Plan: Innovation towards a knowledge-based economy 2008-2018*. Available from: http://www.esastap.org.za/download/sa_ten_year_innovation_plan.pdf [Accessed: 17 October 2017]

Department of Science and Technology. (2015). *Status update on processing of application for the R&D tax incentive.* Available from: https://pmg.org.za/files/150804dst.ppt [Accessed: 5 May 2018]

Department of Science and Technology. (2016). *Report of the Joint Government Industry Task Team on the Research and Development Tax Incentive.* Available from: https://www.dst.gov.za/rdtax/index.php/reports/other-publications/23-16-066-task-team-report-rd-tax-incentive-final-report-31may2016/file [Accessed: 10 October 2017]

Department of Science and Technology. (2017). *Research and Development Tax Incentive Programme Report to Parliament 2015/2016.* Pretoria. Available from: https://www.dst.gov.za/rdtax/index.php/reports/annual-reports/17-2015-2016-1/file [Accessed: 20 February 2018]

Dessus, S. C., Goddard, J. G., and Hanusch, M. (2017). *South Africa Economic Update, September 2017: Innovation for Productivity and Inclusiveness.* World Bank, Washington, DC. Available from: http://documents.worldbank.org/curated/en/779551505322376708/pdf/119695-WP-PUBLIC-SA-EU-2017-Digital-Version-Sep-19.pdf [Accessed: 10 October 2017]

European Commission. (2014a). *A study on R&D tax incentives: final report, Taxation Papers working paper N. 52 – 2014. Luxembourg.* Available from: https://ec.europa.eu/futurium/en/system/files/ged/28-taxud-study_on_rnd_tax_incentives_-_2014.pdf [Accessed: 10 October 2017]

European Commission. (2014b). *A Study on R&D Tax Incentives Annex: Good practice cases.* Available from: https://ec.europa.eu/taxation_customs/sites/taxation/files/resources/documents/taxation/gen_info/economic_analysis/tax_papers/good_practice_cases.pdf [Accessed: 10 October 2017]

European Commission. (2017a). *The Economic Rationale for Public R&I Funding and its Impact.* Available from: https://ri-links2ua.eu/object/document/326/attach/KI0117050ENN_002.pdf [Accessed: 2 November 2017]

European Commission. (2017b). *Mutual Learning Exercise: Administration and Monitoring of R&D tax incentives.* Available from: https://rio.jrc.ec.europa.eu/en/policy-support-facility/mle-administration-and-monitoring-rd-tax-incentives [Accessed: 28 January 2018]

Ferris, B., Finkel, A., and Fraser, J. (2016). *Review of the R&D Tax Incentive.* Australia. Available from: https://aiia.com.au/__data/assets/pdf_file/0004/83695/October-2016-R-and-D-Tax-Incentive-Review-Response-2.pdf [Accessed: 9 December 2017]

Herrington, M., Kew, P., and Mwanga, A. (2017). *GEM South Africa 2016/2017 Report.* Available from: http://www.gemconsortium.org/report/49833 [Accessed: 12 April 2018]

Manzini ST. *The national system of innovation concept: An ontological review and critique.* S Afr J Sci. 2012 108(9/10), Art. #1038. Available from: http://dx.doi.org/10.4102/sajs.v108i9/10.1038 [Accessed: 2 November 2017]

MME, & Nestle, i. c. (2015, June). *Feasibility Study - Best Practice for a Swiss Input Tax Incentive.* Available from https://www.mmw.ch/fileadmin/files/documents/MME_Machbarkeitsstudie_Inputfoerderung.pdf [Accessed: 9 December 2017]

National Advisory Council on Innovation. (2016). *Strategic Plan 2016-2021 and Annual Performance Plan 2016/17.* Available from: http://www.naci.org.za/wp-content/uploads/NACI-2016-21-Strategic-Plan-2016-17-Annual-Perfomance-Plan.pdf [Accessed: 17 October 2017]

National Credit Regulator (NCR). (2011). *Literature Review on Small and Medium Enterprises' Access to Credit and Support in South Africa.* Pretoria. Available from: http://www.ncr.org.za/pdfs/Literature%20Review%20on%20SME%20Access%20to%20Credit%20in%20South%20Africa_Final%20Report_NCR_Dec%202011.pdf [Accessed: 7 May 2018]

National Planning Commission. (2011). *National Development Plan 2030: Our Future - Make it Work*. Pretoria: The Presidency, Republic of South Africa. Available from: http://www.dac.gov.za/sites/default/files/NDP%202030%20-%20Our%20future%20-%20make%20it%20work_0.pdf [Accessed: 10 October 2017]

OECD. (2010). *R&D Tax Incentives: rationale, design, evaluation.* Available from: http://www.oecd.org/innovation/policyplatform [Accessed: 10 October 2017]

OECD (2015), *Taxation of SMEs in OECD and G20 Countries, OECD Tax Policy Studies, No. 23,* OECD Publishing: Paris*.* Available from: http://dx.doi.org/10.1787/9789264243507-en [Accessed: 12 February 2018]

OECD. (2017). *OECD Review of National R&D Tax Incentives and Estimates of R&D Tax Subsidy Rates, 2016.* OECD. Available from: http://www.oecd.org/sti/RDTaxIncentives-DesignSubsidyRates.pdf [Accessed: 10 October 2017]

OECD. (2018). *OECD Review of National R&D Tax Incentives and Estimates of R&D Tax Subsidy Rates, 2017*. Available from: http://www.oecd.org/sti/rd-tax-stats-design-subsidy.pdf [Accessed: 5 May 2018]

OECD. (n.d.). *Tax Incentives for Research and Development: Trends and Issues.* Available from: http://www.oecd.org/science/inno/2498389.pdf [Accessed: 9 December 2017]

SBP. (2014). *Examining the challenges facing small businesses in South Africa.* Available from: http://www.sbp.org.za/uploads/media/SBP_Alert_-_Examining_the_challenges_facing_small_businesses_in_SA_01.pdf [Accessed: 12 April 2018]

SiMODiSA. (2014). *Accelerating growth of small and medium enterprises in South Africa: Policy recommendations for enhancing the start-up/SME ecosystem in South Africa.* Available from: http://www.savca.co.za/wp-content/uploads/2015/08/SiMODiSA-STARTUP-Research.pdf [Accessed: 10 October 2017]

Straathof, B., Gaillard-Ladinska, E., Kox, H., Mocking, R., et al. (2014). *A study on R&D tax incentives: Final Report.* EU Taxation Paper No. 52. Available from: https://ec.europa.eu/futurium/en/system/files/ged/28-taxud-study_on_rnd_tax_incentives_-_2014.pdf [Accessed: 10 October 2017]

The Centre for International Economics. (2016). *R&D Tax Incentive Programme Review.* Available from: https://www.industry.gov.au/sites/g/files/net3906/f/May%202018/document/extra/research-and-development-tax-incentive-review-report-cie_0.pdf [Accessed: 10 October 2017]

Trade & Industrial Strategies. (2017). *The State of Small Business in South Africa.* The Real Economy Bulletin. Available from: https://www.tips.org.za/images/REB_Small_Business_Edition_September_2017_.pdf [Accessed: 5 May 2018]

Van Pottelsberghe, B., Megally, E., and Nysten, S. (2003). *Evaluation of Current Fiscal Incentives for Business R&D in Belgium.* Working Paper WP-CEB 03/011, Université Libre de Bruxelles, Solvay Business School, Centre Emile Bernheim. Available from: https://www.researchgate.net/publication/24131021_Evaluation_of_current_fiscal_incentives_for_business_RD_in_Belgium [Accessed: 7 December 2017]

World Economic Forum. (2016). *The Global Competitiveness Report 2016-2017*. Available from: http://www3.weforum.org/docs/GCR2016-2017/05FullReport/TheGlobalCompetitivenessReport2016-2017_FINAL.pdf [Accessed: 21 October 2017]

World Bank. (2017). South Africa Economic Update, September 2017: Innovation for Productivity and Inclusiveness. World Bank, Washington, DC. Available from: https://openknowledge.worldbank.org/handle/10986/28439 [Accessed: 31 October 2017]

Statutes

Constitution of the Republic of South Africa Act 200 of 1993

Constitution of the Republic of South Africa Act 108 of 1996

Income Tax Act 58 of 1962

National Small Enterprise Act 102 of 1996

Promotion of Administrative Justice Act 3 of 2000

Broad-Based Black Economic Empowerment (BBBEE) Act 53 of 2003

7 Annexures

Annexure A: SMME Classifications

Threshold for the classification of micro, very small, small and medium enterprises in terms of Schedule I of the National Small Enterprise Act 102 of 1996, as amended

Schedule of the small business definition in the National Small Enterprise Act as updated in 2003

Column 1	*Column 2*	*Column 3*	*Column 4*	*Column 5*
Sector or subsector in accordance with the Standard Industrial Classification	**Size of class**	**The total fulltime equivalent of paid employees**	**Total turnover**	**Total gross asset value (fixed property excluded)**
Agriculture	Medium	100	R5m	R5m
	Small	50	R3m	R3m
	Very small	10	R0.50m	R0.50m
	Micro	5	R0.20m	R0.10m
Mining and Quarrying	Medium	200	R39m	R23m
	Small	50	R10m	R6m
	Very small	20	R4m	R2m
	Micro	5	R0.20m	R0.10m
Manufacturing	Medium	200	R51m	R19m
	Small	50	R13m	R5m
	Very small	20	R5m	R2m
	Micro	5	R0.20m	R0.10m
Electricity, Gas and Water	Medium	200	R51m	R19m
	Small	50	R13m	R5m
	Very small	20	R5.10m	R1.90m
	Micro	5	R0.20m	R0.10m
Construction	Medium	200	R26m	R5m
	Small	50	R6m	R1m
	Very small	20	R3m	R0.50m
	Micro	5	R0.20m	R0.10m

Column 1	*Column 2*	*Column 3*	*Column 4*	*Column 5*
Sector or subsector in accordance with the Standard Industrial Classification	**Size of class**	**The total fulltime equivalent of paid employees**	**Total turnover**	**Total gross asset value (fixed property excluded)**
Retail and Motor Trade and Repair Services	Medium	200	R39m	R6m
	Small	50	R19m	R3m
	Very small	20	R4m	R0.60m
	Micro	5	R0.20m	R0.10m
Wholesale Trade, Commercial Agents and Allied Services	Medium	200	R64m	R10m
	Small	50	R32m	R5m
	Very small	20	R6m	R0.60m
	Micro	5	R0.20m	R0.10m
Catering, Accommodation and other Trade	Medium	200	R13m	R3m
	Small	50	R6m	R1m
	Very small	20	R5.10m	R1.90m
	Micro	5	R0.20m	R0.10m
Transport, Storage and Communication	Medium	200	R26m	R6m
	Small	50	R13m	R3m
	Very small	20	R3m	R0.60m
	Micro	5	R0.20m	R0.10m
Finance and Business Services	Medium	200	R26m	R5m
	Small	50	R13m	R3m
	Very small	20	R3m	R0.50m
	Micro	5	R0.20m	R0.10m
Community, Social and Personal Services	Medium	200	R13m	R6m
	Small	50	R6m	R3m
	Very small	20	R1m	R0.60m
	Micro	5	R0.20m	R0.10m

Annexure B: Definition of qualified SMEs, start-ups and young firms, 2017

Small and Medium Enterprises (SMEs)	
Australia	The definition of **SME** applicable for R&D tax incentive purposes is: Firms are eligible to claim the corresponding refundable tax offset if both of the following apply: 1. the firm is not controlled by one or more exempt entities; and 2. the firm's aggregated turnover is less than AUD 20m.
Canada	The definition of **Small firm ~ CCPC** (Canadian-Controlled Private Corporation) is: 1. a private corporation; 2. a corporation that was resident in Canada and was either incorporated in Canada or resident in Canada from June 18, 1971, to the end of the tax year; 3. not controlled directly or indirectly by one or more non-resident persons; 4. not controlled directly or indirectly by one or more public corporations (other than a prescribed venture capital corporation, as defined in Regulation 6700); 5. not controlled by a Canadian resident corporation that lists its shares on a designated stock exchanges outside of Canada; 6. not controlled directly or indirectly by any combination of persons described in the three previous conditions; 7. if all of its shares that are owned by a non-resident person, by a public corporation (other than a prescribed venture capital corporation), or by a corporation with a class of shares listed on a designated stock exchanges, were owned by one person, that person would not own sufficient shares to control the corporation; and 8. no class of its shares of capital stock is listed on a designated stock exchange.
France	The definition of **SME** is in accordance with the EU definition: “A firm with: 1) less than 250 employees; 2) a turnover less than EUR 50m or an annual balance sheet total not exceeding EUR 43m; 3) the ceilings apply to the figures for individual firms.”
Japan	The definition of **SME** is: 1. corporations whose stated capital or equity investment does not exceed JPY 100m; 2. corporations without stated capital nor equity investment where the number of persons employed regularly does not exceed a thousand; 3. self-employed persons who hire other persons regularly and do not exceed a thousand; 4. agricultural cooperatives; and 5. not controlled by large corporations (independent).

Korea	The definition of **SME** in Korea varies across industry sectors and for tax purposes. In general, SMEs: 1. employ less than 1000 workers; 2. have total assets less than KRW 500b; 3. have less than KRW 100b in equity capital; 4. have an average of three last year's sales less than KRW 150b; and 5. are independent.
Norway	The definition of **SME** is in accordance with the EU definition: "A firm with: 1) less than 250 employees; 2) a turnover less than EUR 50m or an annual balance sheet total not exceeding EUR 43m; 3) the ceilings apply to the figures for individual firms."
Poland	The definition of **SME** is in accordance with the EU definition: "A firm with: 1) less than 250 employees; 2) a turnover less than EUR 50m or an annual balance sheet total not exceeding EUR 43m (both amounts expressed in PLN); 3) the ceilings apply to the figures for individual firms."
Portugal	The definition of **SME** is in accordance with the EU definition: "A firm with: 1) less than 250 employees; 2) a turnover less than EUR 50m or an annual balance sheet total not exceeding EUR 43m; 3) The ceilings apply to the figures for individual firms."
Spain	The definition of **SME** is in accordance with the EU definition. An Innovative SMEs also: 1. Has received public funding in the last three years, without undergoing revocation due to an incorrect or insufficient implementation of the funded activity, through public calls under: • the Sixth National Plan for Scientific Research, Development and Technological Innovation, • the State Scientific and Technical Research and Innovation Support for the realization of R+D+i, • the Center for Industrial Technological Development and d. the 7th Framework Programme for R+D+I of the Horizon 2020 Programme of the EU. 2. Has proved its innovative nature through their own activity by: • having a patent itself in operation over a period not exceeding five years preceding the exercise of application to the deduction; • having obtained in the three years prior to the application for the deduction a reasoned binding and positive report allowing the company to apply for the deduction.

	3. Has demonstrated its capacity for innovation, through one of the following recognized certifications: • Young Innovative Company (JEI), according to the specification AENOR EA0043; • Innovative small or micro enterprise according to specification AENOR EA0047; • Certification according to the UNE 166.002 "Management Systems R & D + i".
United Kingdom	The definition of **SME** is: A company with less than 500 employees and revenues less than EUR 100m or gross assets less than EUR 86m. A company may not be considered to be a SME if it is part of a larger enterprise that, taken as a whole, would fail these tests.
United States	An eligible small business is a non-publicly traded corporation, a partnership, or a sole proprietorship, if the average annual gross receipts for the three-tax-year period preceding the credit year do not exceed USD 50 million. In determining gross receipts, rules similar to those of section 448(c), paragraphs (2) and (3), apply: 1. All persons treated as a single employer under section 52(a) and (b) or section 414 (m) or (o) are treated as one person. 2. If the small business was not in existence for the entire three-year period, then the gross receipts requirement is applied on the basis of the period during which such entity was in existence. 3. For a short tax year, gross receipts are annualized by multiplying the gross receipts for the short period by 12 and dividing the result by the number of months in the short period. 4. Gross receipts for any tax year is reduced by returns and allowances made during such year. Furthermore, for a partnership or S corporation, the gross receipts test must be met both by the entity and by the partner or shareholder for the tax year

Stat-ups	
Netherlands	The following criteria determine whether a firm is deemed to be a **Start-up** company: 1) number of years in which the company has employed personnel or number of years in which the applicant has been an entrepreneur: • a company can be deemed to be a start-up company when the company did not act as a withholding agent in at least one of the previous five calendar years. That is, the applicant has employed personnel for a maximum of four calendar years. Self-employed persons may have acted as entrepreneurs for a maximum of four of the past five calendar years. Neither of the aforementioned periods need to be consecutive periods; 2) the number of years in which the company has been issued an R&D Declaration: • The applicant can be deemed to be a start-up company or entrepreneur for a maximum of three years. When the applicant has been issued R&D Declarations in three or more of the past five years then the applicant no longer qualifies for the start-up status. This does not need to be a consecutive period. Each calendar year in which the applicant was issued one or more R&D Declarations then counts as one year. When specific conditions are met, the R&D Declarations issued to a company that preceded the company are also taken into account. This is determined by the continuation and ownership structure criteria that are explained below; 3) whether the company continues the activities from another company owned by the applicant (continuation of activities): • If the company took over activities from another company or has done so in the past, it is deemed to constitute the continuation of a company. When this is the case, the R&D Declarations issued to that other company may in some instances be taken into account when determining the start-up status of the company. This is determined by the ownership structure of the company.
Portugal	The definition of **Start-up** is a SME company, according to the EU regulation, that has not yet completed two fiscal exercises and that did not benefit from the incremental rate.
United States	The definition of **Certain start-ups** is: small businesses that have gross receipts for the tax year of less than USD 5 million, and no gross receipts for any tax years preceding the five-tax-year period ending with the tax year. A small business that is not a corporation or partnership (such as a sole proprietor) must take into account the aggregate gross receipts the taxpayer receives in carrying on all its trades or businesses. For corporations and partnerships, the gross receipts and the credit limitation applies on a controlled group basis.

Young firms	
Belgium	A **Young Innovative Company** (YIC) must meet the requirements of a small company. Especially, it may not exceed more than one of the following criteria: 1) an annual average of 50 employees; 2) an annual turnover (excluding VAT) of EUR 7.3m; 3) total assets of EUR 3.65m (unless annual average workforce exceeds 100 employees). In addition, a YIC must: 1) be younger than 10 years old; 2) not be created in the context of a merger, restructuring, extension of a previous activity or acquisition of such activities; 3) use at least 15% of the total cost of the previous tax period for R&D activities; The YIC must meet those conditions at the end of the previous taxable year preceding the taxable year during which salaries are paid.
France	**Young Innovative Companies** (Jeune Entreprise Innovante - JEI) must: 1) be a SME according to the EU regulation; 2) be younger than 8 years old; 3) have an investment on R&D of at least 15% of all fiscally deductible expenditures; 4) be truly independent (at least 50% of the capital hold by individuals, other YEI, foundations with public utility and scientific purpose, associations, or research centers, not resulting from restructuring). **Young University Companies** (Jeune Enterprise Universitaire - JEU) must: 1) be a SME according to the EU regulation; 2) be younger than 8 years old; 3) be independent (more than 50% of capital hold by individuals, public associations with scientific objectives or research centres); 4) be genuinely new (not resulting from concentration, restructuration, or from the extension of a pre-existing activity); 5) be managed or owned by at least a 10% by students, PhD or master holders having graduated less than 5 years ago, or people with teaching or research activities. Furthermore, it must have stablished a connection with a higher education institution.

Source: (OECD, 2018)