PROBLEMS OF TAX INCENTIVE ON RESEARCH AND TECHNOLOGY DEVELOPMENT: COMPARISON WITH MALAYSIA AND SINGAPORE

BY

MR. NATTAPOL TECHAPRASERTPORN

A THESIS OUTLINE SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF MASTER
OF LAWS IN BUSINESS LAWS (ENGLISH PROGRAM)
FACULTY OF LAW
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ENTITLED

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was approved as partial fulfillment of the requirements for
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Chairman _____
(Assistant Professor Supreeya Kaewla-iad, Docteur en droit)

Member and Advisor _____
(Professor Wiriya Namsiripongpun)

Member and Co-Advisor _____
(Arthit Satthavorasit, Ph.D)

Member _____
(Assistant Professor Munin Pongsaparn, Ph.D)

Dean _____
(Professor Udom Rathamarit, Docteur en droit)

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Author	Mr. Nattapol Techaprasertporn
Degree	Master of Laws
Department/Faculty/University	Business Laws (English Program) Faculty of Law Thammasat University
Thesis Advisor	Professor Wiriya Namsiripongpun
Thesis Co-Advisor (If any)	Arthit Satthavorasit, Ph.D.
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ABSTRACT

We cannot refuse that the growth of this current world is based on technology and innovation. Governments in many countries use different measures for stimulating Research and Development (R&D) activities among private entities. One of the most effective measures used is granting tax incentives. Since other countries are searching for the way to add value to its product and service by improving technology and innovation, Thailand cannot avoid going through the same path with those countries. In Thailand, there are some measures that have been enforced to promote R&D, such as the exemption of income equal to the amount spent for R&D activities under Royal Decree issued under the Revenue Code regarding reduction and exemption from revenue taxes (No. 297) B.E. 2539 (The Royal Decree No.297). Under this measure, companies can spend money on hiring a registered R&D service provider to conduct R&D on their behalf in order to qualify for the exemption. In practice, if a company or R&D Unit would like to become a R&D service provider, they have to file an application to Ministry of Finance (MOF) through the Revenue Department. If a

company hires the approved R&D service provider, they will be entitled to the exemption, while those registered R&D service provider will only gain more business.

Since the R&D tax incentive program was implemented in Thailand in 1996, there are questions concerning proper implementation of this measure, and whether or not the Thai R&D tax incentive scheme really stimulates R&D investment in the country. Questions also arise whether the 200 per cent of tax allowance was enough to effectively encourage private sectors to invest in R&D. Even though Thailand has recently enacted the Royal Decree issued under the Revenue Code regarding reduction and exemption from revenue taxes (No. 598) B.E. 2559 (The Royal Decree No.598) for the expenditures paid on research and development of technology and innovation in February 2016, considerations must still be taken on the appropriateness of this Royal Decree towards the promotion of R&D, and whether such new tax scheme would encourage private entities to invest in R&D. It is also important to consider whether such investment would be sufficient to solve the current R&D issues in Thailand.

This thesis aims to expand on the understanding of Thailand's current R&D tax policy, compared to other counties, as well as providing recommendations on how to promote R&D activities or R&D investments in the private sector more effectively.

Keywords: Tax Incentive, R&D, Royal decree No.297, Royal Decree No.598

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Thammasat University
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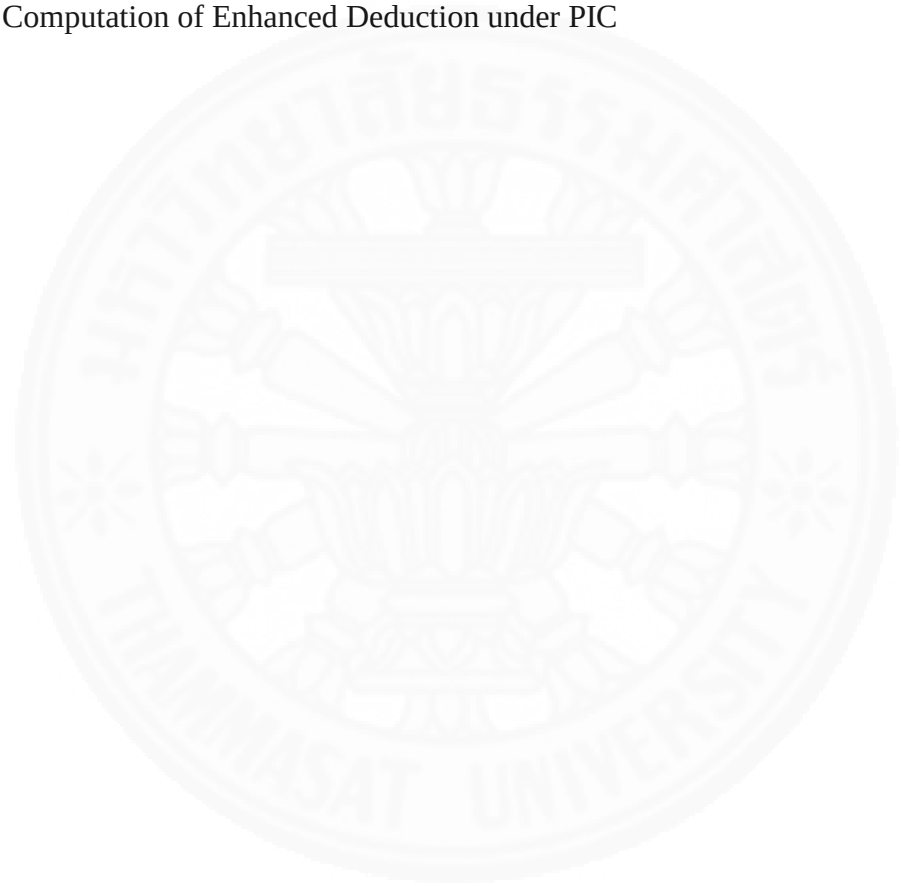

LIST OF ABBREVIATIONS

Symbols/Abbreviations	Terms
BOI	Board of Investment
CSA	Cyber Security Agency
CSC	Committee on Singapore's Competitiveness
FTE	Full-Time Equivalence
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GERD	Gross Expenditure on R&D
IMD	International Institute of Management Development
IRBM	Inland Revenue Board of Malaysia
ITA	Investment Tax Allowance
MIDA	Malaysian Investment Development Authority
MIRB	Malaysian Inland Revenue Board
MITA	Malaysian Income Tax Act
MOF	the Ministry of Finance
MOST	the Ministry of Science and Technology
NSTDA	National Science and Technology Development Agency
OECD	Organization for Economic Co-operation and Development
PIA	Promotion of Investments Act
PIC	Productivity and Innovation Credit
R&D	Research and Development
RDA	Research and Development Tax Allowance Scheme
RISE	Research and Development Incentive for Start-up Enterprise
SARA	Semi-Autonomous Internal Revenue Administration
SITA	Singapore Income Tax Act
SME	Small and Medium-Sized Enterprises
TDRI	Technical Research and Development Institute
YA	Year of Assessment

CHAPTER 1
INTRODUCTION

1.1 Background and Problems

Due to increasing intensity of domestic and international competition in global free trade, research and development of products and manufacturing processes are vital to the continued expansion of Thailand's economy that may lead to the creation of long-term competitive advantage for the country. Since Thailand has been losing its competitive advantage in labor costs, which are now higher than neighboring countries, and since most natural resources are limited, it is essential that the country restructure its basic industrial structure from traditional use of labor to a more sophisticated utilization via research and development activities.[1]

In terms of research and development expenditure, Thailand lags behind a number of middle-income countries and behind the now high-income countries. Comparing the investment on research and development in Thailand in 2014, it is found that investment in research and development (R&D) has been stable over the past decade. Thailand has spent very little on R&D, totaling only 0.39 percent of gross domestic product (GDP), which is lower than many countries in Asia such as South Korea, China, and Japan, whose R&D spending was around 4.15, 2.01 and 3.4 percent respectively. In comparison with Thailand's neighboring countries in ASEAN[2],

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[1] National Science and Technology Development Agency, *"R&D Project Approval for Income Tax exemption for expenses paid out as R&D expenditures"*, (สำนักงานพัฒนาวิทยาศาสตร์และเทคโนโลยีแห่งชาติ, "การขอรับรองโครงการวิจัยและพัฒนาเทคโนโลยีเพื่อขอยกเว้นภาษีเงินได้นิติบุคคลสำหรับรายจ่ายที่ได้จ่ายไปเพื่อทำการวิจัยและพัฒนาเทคโนโลยี"), *See:* http://www.nstda.or.th/rdc/index.php/aboutrdp, accessed on September 9,2015

[2] World Bank, *"World Development Indicators"*, *See:* http://data.worldbank.org/data-catalog/world-development-indicators, accessed on May16, 2016

Singapore and Malaysia invest 2.15% and 1.13% of its GDP on R&D.[3] In terms of developers and researchers[4], there are very few R&D personnel at only 9.3 out of 10,000 people comparing to other developed countries in Asia such as China at 19.3 out of 10,000 people, Malaysia at 42.1, Singapore 116.8 and South Korea at 128.1, which are over ten times more than Thailand.[5] So, it is not surprising why Thailand has lost its ability to compete against other countries. Thus the urgent need for the state to promote more R&D activities and to encourage the private sector to overcome its weakness in knowledge-based infrastructure.

There are several methods to encourage more R&D, but the most interesting and effective mean for encouraging the private sector to invest in R&D is creating tax incentives towards R&D activities by offering additional tax deduction of the expenditure paid towards R&D activities. In order to promote and encourage the private sector to invest in R&D of technology in Thailand, the government, by virtue of Section 3 (1) of Thai Revenue Code, issued the Royal Decree No. 297 B.E. 2539 (Royal Decree No.297)[6] to provide income tax exemption for the income of the company or partnership amounting to 100% of the expenses paid out as an expenditure incurred on R&D activities. This means that for every 100 baht spent in research and technology development for any business, a 100 baht exempted amount can be deducted from a changeable income, then more profit left over after deduction; as such, the

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[3] Data for Thailand are for 2011, Data for the Republic of Korea and the People's Republic of China are for 2013; data for and Singapore and Malaysia are for 2012.

[4] UNESCO Institute for Statistics, Data Centre, *See:* http://www.uis.unesco.org/datacentre/pages/default.aspx, accessed on May 16, 2016.

[5] Data refer to full-time equivalent number of researchers from various fields. Data for Thailand are for 2011; for Republic of Korea, and for the People's Republic of China 2013; data for and Singapore and Malaysia are for 2012.

[6] In this thesis, the author has commenced writing and researching the issue from since the Royal Decree No. 297 was in effect, and during the progress of conjuring this thesis, the Royal Decree No. 598 has been enacted in February 2016, replacing Royal Degree No. 297. The new Royal Decree does not entirely replace the previous decree, but is only an amendment adding more benefits to the previous benefits offered to R&D investors. As such, the author has revised and updated the information provided in this thesis to be most up-to-date. Thus, the information and details discussed in this thesis is the most recent and correct information up to June 15, 2016.

benefit from R&D investment will appear to be impressive. This will prove to be a good incentive for the private sectors to invest in R&D.

However, statistics show that the growth of Thailand R&D activities has been lower than it should be, with a small number of companies adopting this measure for the proposed benefits. Most of these companies are large companies with enough money to set aside for such big investments.[7] Statistics also show that the lost in tax revenue incurred by the Thai government is almost negligible. For the past 11 years, the government has lost a mere 1,700 million baht in revenue. Compared to other measures such as the measure for investment promotion issued by the Board of Investment (BOI) to attract foreign investors to invest in Thailand by offering tax exemption to foreign companies, the government has incurred a loss of over 280,000 million baht of revenue from collecting income tax and customs in 2012; as additionally, the Central Government's First Car Refund Project has incurred a loss of over 920,000 million baht from tax exemption of excise tax. In the same year, tax exemption for R&D activities has only cost the government a loss of 440 million baht in revenue.[8]

R&D activities in Thailand have also been neglected by many businesses, as they consider R&D costs as expenses rather than investments. The Tax incentive in place since 1996 for companies with R&D projects are not very attractive and have had limited results so far. Having considered the current R&D definition as defined by The Notifications of Ministry of Finance No.3, which is not clearly understandable and not applicable for Thailand's industrial or commercial activities, in addition to the content of the Royal Decree No.297 concerning a 200 per cent of tax allowance, the incentive is not enough to encourage private sectors to invest in R&D. It is also not suitable for uplifting Thailand's current R&D capabilities. This tax scheme does not offer enough benefits to encourage start-up companies, which have insufficient budget for operating

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[7] Somkiat Tangkitvanich, Interview by Nattha Komolvadhin, Kid yok kum lung 2, the Thai PBS, August 23, 2013 (สมเกียรติ ตั้งกิจวานิชย์. สัมภาษณ์โดยณัฏฐา โกมลวาทิน,รายการคิดยกกำลังสอง, ไทยพีบีเอส, 23 สิงหาคม 2556), *See:* http://tdri.or.th/multimedia/thinkx2-12/

[8] *Id.*

its business, let alone conducting R&D activities. In the case of a loss-incurring situation, if the R&D expenditures are more than the net income received in the same year, the exempted amount of R&D expenses cannot be deducted to an amount exceeding the gross amount of income. In addition, this tax scheme has limited impact on firms' technological activities, since they have burdensome operational and administrative requirements, and in part are subject to the tax auditors' ability to draw a consistent distinction between R&D and other expenditure according to National Science and Technology Development Agency's final approval (NSTDA). Moreover, the soft loans that has been granted through the Research and Technology Development Resolving Fund (operated by the Ministry of Science and Technology (MOST) and the NSTDA Soft Loan Facility are minimal at this stage due to limited budgets.

Although Thailand has already enacted issued the Royal Decree under the Revenue Code regarding reduction and exemption from revenue taxes (No. 598) B.E. 2559 (The Royal Decree No.598) in to increase the rights and privileges of companies or juristic partnerships in relation to expenses incurred in connection with research and development innovation, and has recently enforced the Decree in February 24, 2016, considerations still need to be taken into account as to the appropriateness of this Royal Decree towards the promotion of R&D activities; whether such new R&D Tax scheme would encourage private entities to invest in the R&D, and whether such investments would be sufficient to resolve the current R&D issues in Thailand.

1.2 Hypothesis

Even if the country may benefit from promoting R&D activities, statistics show that the growth in Thailand's R&D activities have been quite low. Due to certain limitations of the current tax incentive measures, only a small number of companies can truly benefit from them. Thus, the proposed hypotheses are:

i. The R&D tax incentives under The Royal Decree No. 297 does not provide enough benefits to encourage research and development activities in Thailand.

ii. The new R&D tax scheme under The Royal Decree No.598 does not meet the private sector's demand concerning R&D activities, and thus, is insufficient to solve current R&D issues in Thailand.

ii. The requirement for the tax incentive claims are inapplicable to businesses' R&D activities.

iii. In addition to improving and modifying existing tax measures, other tax incentives schemes need to be considered to stimulate R&D investment in the private sector.

1.3 Objective of Study

The study aims to analyze existing tax measures in Thailand, comparing Thai R&D tax measures to neighboring countries such as Singapore and Malaysia, which can be applied to improve the implementation of the current R&D tax incentive policy or to modify existing policies in order to enhance their effectiveness.

1.4 Scope of Study

This thesis paper mainly focuses on the study of tax measures for promoting R&D activities in Thailand, as compared to neighboring countries like Singapore and Malaysia, whose R&D promotion schemes seem to be much more effective above any other countries in this region.

The thesis will also be studying the tax measures of neighboring countries (Singapore, Malaysia) and applying appropriate measures to Thailand, with the goal of increasing the number of R&D activities in the country by stimulating the private sector to invest more on R&D.

1.5 Study Methodology

The study methodology of this thesis is based on documentary research using texts and documents which include educational institution journals, law articles, government publications, legal publications, newspapers, domestic and international laws as well as internet databases as source materials.

1.6 Anticipated Benefits

i. Understanding the significance of R&D, the legal measures for promoting R&D, the various types of R&D tax incentives as well as the tax measures in certain foreign countries regarding R&D promotion.

ii. Comprehending the problems of R&D in Thailand and identifying existing Thai tax incentives for R&D.

iii. Providing the appropriate recommendations to tackle the problem of Thai R&D tax incentive schemes as well as providing other appropriate tax measures that will encourage more R&D activities in Thailand.

CHAPTER 2
BACKGROUND AND OVERVIEW OF R&D IN THAILAND

2.1 Definition and Importance of R&D

2.1.1 The Definition of R&D

The most authoritative definition of Research and Development (R&D) comes from Organization for Economic Co-operation and Development (OECD) Frascati Manual, published in its first edition 50 years ago.[9] Since then, the definition has been revised several times, and its latest 6th edition was published in 2002.[10]

The Frascati Manual is not only a standard for R&D data collection in the OECD member countries, but a result of initiatives by the OECD, UNESCO, the European Union and various regional organizations.[11] Today, the guidelines of the Frascati Manual have become de facto standard for both for collecting and analyzing R&D activities across the globe.

The latest definition of R&D proposed by the Frascati is as follow:

"Research and experimental development (R&D) comprise creative work undertaken on a systematic basis in order to increase the stock of knowledge,

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[9] The first official version of the manual, Proposed Standard Practice for Surveys of Research and Development, was published in 1963 after an OECD expert meeting at Villa Falconieri in Frascati, Italy.

[10] Revision of the OECD Frascati Manual : 1963 (1st edition), 1970 (2nd edition), 1976 (3rd edition), 1981 (4th edition) and 1993 (5th edition)

[11] OECD (2015), *"Frascati Manual 2015: Guidelines for Collecting and Reporting Data on Research and Experimental Development"*, **The Measurement of Scientific, Technological and Innovation Activities**, OECD Publishing, Paris, 4 (2015)

including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications"[12]

The Frascati Manual also distinguishes between basic research, applied research and experimental development as such:

i. **Basic research** is experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundation of phenomena and observable facts, without any particular application or use in view.

ii. **Applied research** is also original investigation undertaken in order to acquire new knowledge. It is, however, directed primarily towards a specific practical aim or objective.

iii. **Experimental development** is systematic work, drawing on existing knowledge gained from research and/or practical experience, which is directed to producing new materials, products or devices, to installing new processes, systems and services, or to improving substantially those already produced or installed. R&D covers both formal R&D in R&D units and informal or occasional R&D in other units.

There are questions as to what types of R&D activities would qualify for tax incentives; what will determine the extent of governmental support and tax relief. Most countries define R&D for tax purposes more restrictively than the OECD Frascati Manual.[13] Some countries offer direct tax incentives to basic research, while others focus more on R&D activities that benefit the overall economy including applied and developmental research.

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[12] OECD (2002), *"Frascati Manual 2002: Proposed Standard Practice for Surveys on Research and Experimental Development"*, **the measurement of scientific and technological activities**, OECD Publications, 31, (6th edition,2002)

[13] OECD, *"Tax Inventive for research and Development Trend And Issues"*, **Science Technology Industry,** 29

2.1.2 The Importance of R&D

Research and Development is considered the key factors of economic growth. It is apparent that future economic progress is driven by the invention and application of new technologies. R&D is one category of expenditures that develop and drive these new technologies. From the perspective of competitiveness, the private sector is prone to focusing their R&D activities on applied projects, and many government-sponsored technological advances have been instrumental in driving economic growths, thereby raising living standards. According to published literatures[14], it is expected that countries engaging in R&D activities have more competitive advantage in goods export, and countries with the "largest" R&D expenditures are in the forefront of the technological boundary when new products or new production processes are invented, thereby gaining competitive advantages over other countries producing competing goods.[15] As such, we continue to see countries around the world rolling out supportive economic policies to promote R&D activities in order to compete on a global level.

For the private sector, R&D are a significant tool for growing and improving their business. Products, processes and services will be developed and improved to fit their customer's needs. Businesses that invest in R&D have a greater chance of success than businesses that do not have any R&D activity. R&D activities for small businesses tend to focus more on product improvements due to limited budgets. Larger businesses may be able to dedicate more time and resources to R&D to introduce new products as well as improving existing ones. [16] Apart from product developments and improvements, R&D can also lead to innovations of services, processes and new ways

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[14]Elisabeth T. Pereira, Janis Priede, "Innovation As a Key Factor in the International Competitiveness of the European Union", **ISSN 1822–8402 European Integration Studies**, 2013. No. 7, 1, *See:* http://www.eis.ktu.lt/index.php/EIS/article/view/4228

[15] *Id.*

[16] Business And Industry Portal, *"Research and development: Developing an R&D strategy"*, *See:* https://www.business.qld.gov.au/business/business-improvement/research-development, accessed on May 16, 2016

to interact with customers. These innovations can result in greater profits and lower costs, and are also useful ways to boost business's competitive advantages.

2.2 Goals for Promoting R&D[17]

i. To increase the innovative capacity and competitiveness of national economy.
ii. To encourage public and private sectors to perform more R&D activities, contributing to transferring technologies that can enable the development of new products, processes, or services.
iii. To improve industries, increasing value added productivity, and improving the quality of work life.
iv. To generate products, processes, and services that improve the wellbeing of the people and the environment.

2.3 Methods of R&D Promotion

Countries can stimulate investment in R&D through direct measures such as public funding, loans and grants, and indirect measures such as tax incentives and tax credits. Each measure, whether direct or indirect, depends on the political objectives of each country. Depending on the strategic level of the state, indirect measure such as tax incentives may proof to be more appropriate for international investments in R&D. If the objective of R&D policy is to encourage a large number of enterprises to increase the amount of the business sector's investment in R&D, tax incentives should be applied.[18] In some countries, direct measures are more often used by the State to

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[17] NSTDA, Tax Benefits for Research and Development: Research and Development Project Application, RDC, RDP, June 10, 2011, *See:* https://www.set.or.th/th/news/issuer_activities/recent_seminar/files/20110620RDC%20NSTDA%20Slides10%20June%2011.pdf.

[18] Sabina Hodžić, *"Research and Development and Tax Incentives"*, **South East European Journal of Economics and Business**. Volume 7, Issue 2, 57 (2012)

support R&D. However, direct R&D subsidies or government spending on basic research activities should not be expected to displace real private R&D investment.[19]

Direct subsidies and tax incentives, which is the most popular form of indirect subsidies, are the two instruments commonly used in many countries to stimulate private R&D activities. While direct funding of private R&D activities is a long tradition in many countries, tax incentives have spread more gradually across the globe, although with some exceptions.[20] Canada, Netherlands and Japan rely mostly on tax incentives, while direct funding is still preferred in Sweden, Finland and Germany. Other countries may opt a combination of both instruments such as France, Denmark, Spain and the United States.[21]

2.4 The Role of Government for R&D

Governmental support is one factor affecting a company's decision to apply for public support in R&D activities. Generally, governments are involved in the support of R&D activities because the net spinoffs from R&D are beneficial to the society at large, although the benefits towards those carrying out such R&D activities may not be as tangible. Research indicates that the social rate of returns on R&D are several times higher than the returns to private companies. Thus the private sector tends to under-invest in R&D simply because it has less incentives to conduct R&D activities whose benefits may extend beyond their own private good. This leads to the so-called "market failure", since the market cannot fully ascertain the accrual of all benefits of R&D towards the private sector, thus leaving the private sector no choice but to allocate less

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[19] Paul A. David, Bronwyn H. Hall, Andrew A. Toole, *"Is public R&D a complement or substitute for private R&D? A review of the econometric evidence"*, **Research Policy 29,** 502 (2000)

[20] Isabel Busom, Beatriz Corchuelo and Ester Martínez Ros, *"Tax Incentives and Direct Support for R&D: What do firms use and Why?"*, **Universidad Carlos III de Madrid Working paper WP 11-03**, 1

[21] *Id.*

resources to R&D activities than the socially desirable optimum. This under-production of R&D is the justification for governmental intervention.[22]

The government can employ a number of instruments in order to stimulate private R&D activities such as direct subsidies and indirect subsidies via tax incentives methods, which is dependent on complex business decisions and numerous variables in the economic environment.[23] Some governments, however, will use both direct financing and tax that is in accord with their national technological strategies.

2.4.1 Direct Subsidies

Direct subsidies have the advantage of uplifting cost burdens and the ability to target particular R&D projects. It is obtained by a company only if the company presents an application to the public agency in charge, where the agency decides favorably after screening the proposals.[24] Direct subsidies have also allowed governments to retain control over the R&D activities conducted, ensuring that the companies help address important public missions.[25] At the same time, the companies may benefit from obtaining external financing (e.g. a bank loan) for their R&D investments. Direct subsidies can be paid out at an early stage of the R&D project, and thus, contribute towards improving the companies' cash flow.[26] New companies that intend to innovate are likely to apply for and obtain direct support rather than tax incentives, because they usually have financial constraints, or have little taxable income.

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[22] OECD (2002), *"Special Issue on New Science and Technology Indicators"*, **STI Review No.27**, 186 (2002)

[23] OECD, *supra* note 13, at 10

[24] Isabel Busom, *supra* note 20, at 7

[25] OECD, *supra* note 13, at 10

[26] Karsten Staehr, *"An Analysis of Tax Incentives to Promote Research and Development in Estonia"*, Ministry of Economics and Communication, 22

However, direct measures have high administrative costs, and thus, administratively not applicable to a large number of applications.[27] In addition, to receive governmental funds, the company's R&D project must meet the governmental or public needs, which can divert from the private sector's R&D investments goals, thereby distorting the market mechanism. In order to mitigate such undesirable effects on the market, several countries choose to introduce tax incentives rather than direct subsidies. An increasing number of countries begin supporting certain levels of private R&D via tax incentives.[28]

2.4.2 Indirect Subsidies

There are various forms of indirect subsidies such as providing companies and industries with the necessary infrastructures at low price, providing companies low-interest rates, and offering tax incentives. Usually, when indirect subsidy is opted as a mean to stimulate and promote R&D in a country, the government of that country would offer tax incentives for R&D investors.

Tax incentives are granted by governments to offset market failure in allocating resources to long-term risky investments such as R&D.[29] Tax incentives are generally used when a government wishes to increase the overall amount of research activities within its country, and to generally apply the measures throughout a wide range of R&D fields, since they do not require the presentation and approval of a specific project as in other direct measures. In the case of tax incentives, the decision-making process remains with the company. Companies investing in R&D are eligible to claim tax incentives on any expenses that may qualify as R&D expenditures according to the tax

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[27] Sabina Hodžić, *supra* note 18 at 57

[28]Paula Faria, Vitorino da Silva Martins, Elísio Fernando Moreira Brandão,*" How R&D and tax incentives influence economic growth:Econometric study for the period between 1995 and 2008 of EU-15"*, **FEP Working Papers**. No.442, 2 (2011),

[29] OECD (2002), *supra* note 22, at 187

code. The only requirement, usually, is to follow proper accounting rules for that type of expenses.[30]

Unlike direct measures, tax incentives are delivered indirectly through market decisions of the private sector. This measure allows the markets rather than governments to determine the allocation of investment in R&D, where the governments do not intervene in the private sector's decision in choosing the most productive manner of investment.[31] The tax mechanisms can be important for stimulating research in small and medium-sized enterprises (SME) as well as larger companies.

The disadvantage of R&D tax incentive is that this measure does not allow governments to direct business R&D activities into areas with high social returns. Because tax incentives are taken against earnings, private company may be more likely to favor R&D projects yielding higher profits.[32] In addition, governments also cannot control the budgeted outcome since costs may be unpredictable, thus, they cannot forecast the expenses incurred that may qualify for incentives.

When considering the advantages and disadvantages of direct and indirect subsidies via tax incentives, the choice between the two methods depends on the country's evaluation of its research problems and how it perceives the effectiveness of tax incentives in solving those problems. Countries with a high level of R&D may eschew tax incentives in favor of direct funding: that is, they may prefer to control the quality and nature of the research being conducted. However, for those countries seeking to stimulate the overall level of R&D, in order for both small and large enterprise to appreciate the importance of R&D, for example in Thailand, tax incentive is the more effective measure. In such case, the government highly depends on tax incentives to stimulate the overall R&D in the country.

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[30] Isabel Busom, *supra* note 20, at 8
[31] OECD, *supra* note 13 at 9
[32] OECD, *supra* note 13 at 9

2.5 Tax Incentives for R&D

R&D tax incentive is an effective instrument for urging the private sector to invest more on research. Most of the R&D tax incentives used by different countries aim to reduce corporate income tax liability of the companies incurring R&D expenses. Nevertheless, the incentives targeted towards research must be examined under the context of the overall tax system of the country and its objectives. In addition, several countries have modified existing R&D tax measures to increase the effectiveness in achieving policy goals.[33]

Generally, there are various forms that countries provide R&D tax incentives: The choice often depend on a country's historical method for providing incentives, on budgetary considerations and on the nature of the problem the tax incentive is intend to solve.

Types of R&D Tax Incentives

Each country adopts different kinds of tax incentives to encourage R&D activities of companies.[34] These include:

i. Tax allowances, or enhanced allowances, or extra amounts over current business expenses: deducted from gross income to arrive at taxable income. The net benefit to be obtained from these allowances depends on the tax rate.

ii. Tax credits or amounts deducted from tax liability: a lump sum deduction. Their net effect is independent of income level, and is equal for all taxpayers since a certain amount of money or a certain share of payment is deducted from tax payments for all taxpayers, irrespective of the marginal tax rate.

iii. Tax Rate Reduction: taxing a class of taxpayers or activities at a lower rate (sometimes even at 0 % rate). In some systems, tax relief can be deducted from tax due, whereas in others, it can be deducted from the tax base or

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[33] Karsten Staehr, Ph.D, *supra* note 26

[34] Tanja Tanayama, *"Overview of R&D Tax Incentives"*, National Audit Office of Finland, 192

taxable income e.g. lower corporate tax rate for high-tech companies in China, or lower income tax rate for foreign researchers in Denmark.

iv. Tax Exemption (Tax Holiday): particular income is exempted or excluded from the tax base e.g. tax exemptions for R&D centers in Poland.

v. Tax Deferrals: a specific form of tax incentive, which are reliefs in the form of a delay in payment of a tax e.g. depreciation allowances.

The two main forms of tax incentives for encouraging R&D are enhanced allowance, and tax credit.[35] Enhanced allowance allows companies investing in R&D to deduct more amount from their taxable income than the amount actually spent on R&D, while tax credit allows a direct deduction from the tax payable based on the amount of R&D expenditures. This means enhanced allowance is the deduction from taxable income, while tax credit is the deduction against final tax liability. There are two other distinctions between allowances and credits[36]: i) The generosity of enhanced allowance depends on general corporate income tax rate from which tax credit is independent upon; and ii) unused tax allowances may be carried forward to offset future tax under normal loss towards provisions, unused tax credits carried forward requires the creation of a special tool to track unused credits.

Tax incentives is either based on the level of R&D investment (volume based), on the increment of R&D (incremental), or on a combination of the two (hybrid).[37] More OECD countries now apply volume based tax incentives towards R&D spending rather than incremental annual spending. Volume-based means that R&D tax incentive is available for the total amount of R&D expenditures the firm undertakes in a given fiscal year. The disadvantage of volume-based incentives is that they not only subsidize new R&D activities, but also any past R&D activities the firm may already have done.[38]

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[35] Also capital asset accelerated write-downs constitute a tax incentive, but they provide only a marginal incentive.

[36] OECD, *supra* note 13 at 14

[37] Tanja Tanayama, *supra* note 34, at 190

[38] OECD, *supra* note 13, at 16

Some countries often provide R&D tax incentive only for incremental R&D spending (e.g. excess R&D expenditure from the annual average R&D expenditure incurred in the past three years). The main advantage of considering only incremental R&D spending to be eligible is that it ensures that the cost incurred by government is compensated by the increase in R&D activities. With the same amount, the incremental-based schemes could provide stronger incentives to increase R&D activities more effectively than volume-based schemes.

However, incremental-based schemes are more complex to design and to use. Defining a base period or base level of R&D activities to determine the increment or increase in R&D expenditures may be difficult. Moreover, incremental-based schemes are often associated with higher administrative burdens due to data and calculation requirements. Thus, R&D tax incentive schemes are trending towards simpler volume-based incentives,[39] where several countries are introducing R&D tax incentives based on a combination of the two types of schemes.[40]

From a policy point of view, a volume-based scheme would be more appropriate if the objective is to increase the overall level of R&D activities in the country, while an incremental-based scheme may be preferable if the objective is to support firms with high R&D growth. A combination of volume and incremental tax incentives (hybrid schemes) may be preferable when the objective is to maintain the level of, and reward high growth of, R&D.[41]The main objective should carefully be taken into consideration when designing an appropriate tax incentive scheme to be used in a country.[42]

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[39] Criscuolo et al., 2009

[40] Tanja Tanayama, *supra* note 34, at 190

[41] Criscuolo et al., 2009

[42] OECD Innovation Policy Platform R&D, "Tax incentives: Rationale, Design, Evaluation", *See:* https://innovationpolicyplatform.org/document/rd-tax-incentives-rationale-design-evaluation, accessed on February 5, 2016

2.6 Research and Development in Thailand

In general, research and development is very essential for technological development for sustainable improvements of the country. As a result, the enhancement in R&D is desirable in all countries, including Thailand that encourages many private sectors to continually invest millions of Baht in their R&D projects. However, investment on R&D from the private sector in Thailand is still low.[43]

2.7. Overview of R&D in Thailand

According to the ranking by International Institute of Management Development (IMD) in 2015, Thailand's overall competitiveness ranked 30th out of 61 countries, lagging far behind its ASEAN counterparts like Singapore (ranked 3rd) and Malaysia (ranked 14th). Having been ranked 44th and 47th in technological infrastructure and scientific infrastructure respectively[44], Thailand has to tackle and overcome the barriers to climb up the ladder of scientific competitiveness.[45] Therefore, there have been suggestions for Thailand to shift from an Investment-Driven Economy to an Innovation-Driven Economy. For this purpose, the private sector must undertake R&D initiatives to assist in design and product development, production process, appropriate packaging, new technology and innovation to create value creation for products. Industrial development is thus moving towards knowledge-based industry and creative industry, providing real competitiveness to the country.[46]

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[43] Pornpoj Wongpattanangkul, Pimpisa Pranommit, *"Exploratory Analysis of Cycle Time Delay: R&D Tax Incentive Program"*, **Going for Gold ~ Quality Tools and Techniques.** Paper No. 04-01, 2

[44] Jose Caballero, *"Thailand Competitive 2015 Recap"*, IMD World competitive Center, July 16 2015, *See:* http://tma.or.th/file_manager/BU1/TCEP2015/Dr.%20Jose%20Caballero.pdf

[45] OSTC, Thailand STI's Capacity and Ways Forward, *See:* http://ostc.thaiembdc.org/13en/thailand-stis-capacity-and-ways-forward/, accessed on September 9, 2015

[46] King Mongkut's Institute of Technology North Bangkok, **Project to Formulate Action Plans to Promote Research and Development in the Industrial Sector**

Compared with developed countries, Thailand ranks nearly last in terms of distribution of R&D capabilities and activities around the world. Thailand still lacks policies and national R&D strategies to make significant contribution to drive innovative capacity and increase its competitiveness over other countries.[47] Although the average R&D investment tends to be increasing continuously in the last 10 years, Thailand's gross domestic expenditures on R&D as a percentage of GDP remains relatively stable at 0.39 percent. The Thai government aims to lift Thailand's figure to 1% by 2016.[48]

Moreover, the efficiency of R&D, which has been increasing every year compared to other countries, is far below the world's average. With regard to R&D funding, the main source of funding comes from the public sector, which provides about 60% of Thailand's total national R&D expenditure, while around 40% of the R&D funds are provided by the private sector, compared to high R&D performing countries such as Japan, South Korea, China and Singapore, where most of the R&D funds come from the private sector amounting to more than 60%. [49]

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towards Knowledge, 1 (2013) (มหาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ, **การจัดทำแผนปฏิบัติการส่งเสริมการวิจัยและพัฒนาในภาคอุตสาหกรรมเพื่อก้าวไปสู่อุตาหกรรมฐานความรู้**, กันยายน 2556, หน้า 1)

[47] Thevarak Rochanapruek, "*Reseach and Development in Thailand: Present to Future***", Journal of Scientific Research (Section T)**, 4th vol.2, 93 (2005) (เทวรักษ์ โรจนพฤกษ์, "*การวิจัยและพัฒนาในประเทศไทย : ปัจจุบันสู่อนาคต*" , **วารสารวิจัยวิทยาศาสตร์ (Section T)**, ปีที่ 4 ฉบับที่ 2 (2548), หน้า 93)

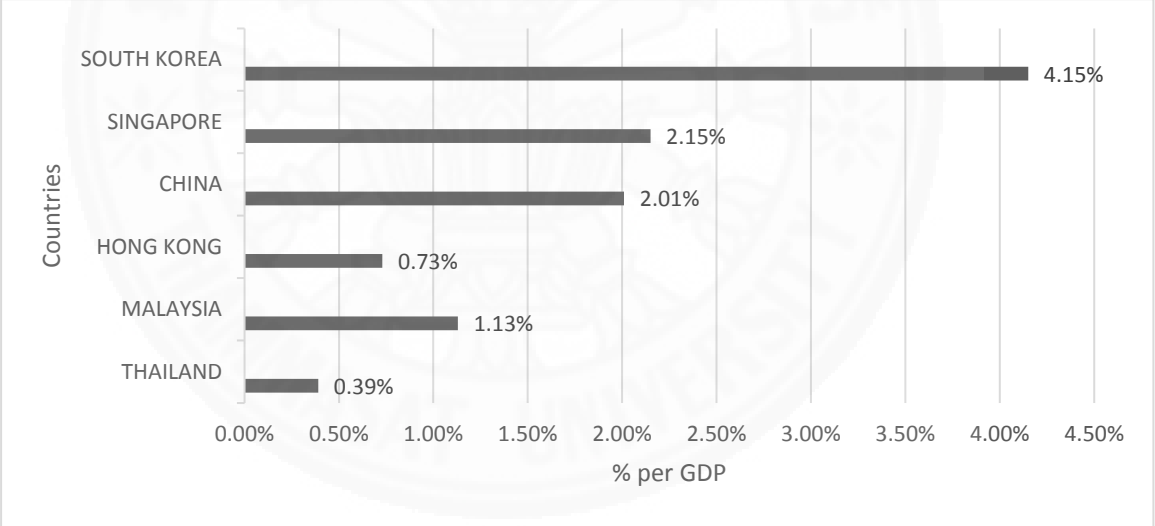
[48] National Science Technology and Innovation Policy Office, *"Where is a capacity of Thailand in science and technology"*,17, (1st Edition ,2013) (สำนักงานคณะกรรมการนโยบายวิทยาศาสตร์เทคโนโลยีและนวัตกรรมแห่งชาติ," ศักยภาพวิทยาศาสตร์และเทคโนโลยีไทยอยู่ตรงไหน?", พิมพ์ครั้งที่ 1, มิถุนายน 2556, หน้า 17), *See:* http://www.sti.or.th/th/images/stories/files/sti%20index-s2.pdf

[49] National Science Technology and Innovation Policy Office, *supra* note 35, at 17

2.7.1 Reasons for Promoting R&D in Thailand

At present, the world has moved into the Third Wave Period or Knowledge-Based Economy Society, focusing on the dimension of sustainable development. The main emphasis is on economic and social development in parallel with the protection of natural resources and the environment, placing great importance on R&D to create knowledge.[50] Thailand, however, are still questioning the country's long term ability to sustain economic growth while improving international competitiveness,[51] because the progress of technological capabilities of Thai entrepreneurs and labor forces do not match the rapid economic growth. Thailand therefore lags behind other economies in East Asia such as South Korea, China, Hong Kong, Singapore, and Malaysia in term of their success in high-tech industrial development.[52]

Figure 2.1: Total Expenditures on R&D 2014



[50] King Mongkut's Institute of Technology North Bangkok, *supra* note 46, at 1

[51] Nit Chantramonklasri, *"Science and Technology Development for Industrial Competitiveness in Thailand: Problems and Lessons"*, **TDRI Quarterly Review**, Vol. 9 No. 2, 24 (1994), *See:* http://tdri.or.th/archives/download/quarterly/text/std_comp.htm

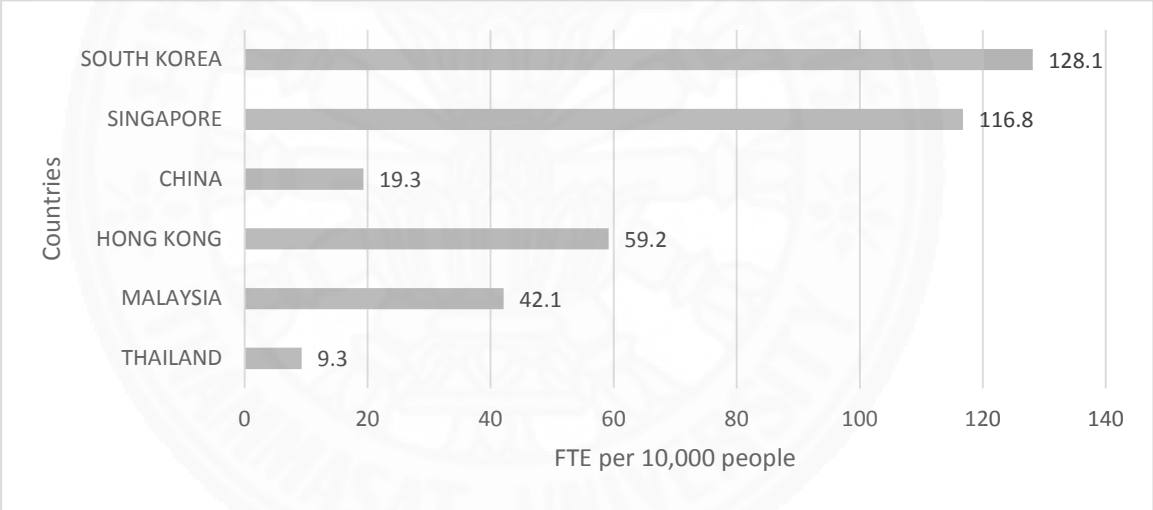
[52] Yunpeng Zhu, Hal Hill, **The East Asian High-tech Drive**, MPG Book Limited Bodmin Cornwall, 295 (2006)

Note: Data for Thailand are for 2011, Data for the Republic of Korea and the People's Republic of China are for 2013; data for and Singapore, Hong Kong and Malaysia are for 2012.

Source: World Bank. World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators (visited at May 2016)

Comparing the amount of investment on R&D in Thailand, there has not been much growth over the past decade. The amount of expenditure on R&D has been minimal at 0.39 per cent of GDP. Meanwhile, R&D spending has generally surged across Asia, particularly South Korea (4.15% of GDP) and Singapore (2.15% of GDP). Compared to China's 2.01 %, Hong Kong's 0.73%, and Malaysia's 1.13%, Thailand is still the lowest spender on R&D.

Figure 2.2: Total R&D Personal Per Capita 2012



Notes: Data refer to full-time equivalent number of researchers from various fields. Data for Thailand are for 2011; for Republic of Korea, and for the People's Republic of China 2013; data for and Singapore, Hongkong and Malaysia are for 2012.

Source: UNESCO Institute for Statistics. Data Centre. http://www.uis.unesco.org/datacentre/pages/default.aspx (accessed May 2016).

In term of developers and researchers, as shown in above Figure, there are very few R&D personnel at only 9.3 per 10,000 people, which is lower than many countries in Asia such as China, Hong Kong and Malaysia, whose number of FTE (full-time equivalence) R&D personnel and researchers are 19.3, 59.2 and 42.1 Per 10,000 people respectively. In particular, when compared to developed countries in Asia such as

Singapore and South Korea (116.8 and 128.1 per 10,000 people respectively), the numbers of R&D personnel are over ten times more than Thailand.

These figures clearly suggest that Thailand severely needs more R&D personnel to promote more R&D activities in order to overcome its weaknesses. If the country could not manage to upgrade and strengthen its industry, its chances of becoming internationally competitive are limited. At this time, there are new market economies emerging with much lower wages and more abundant natural resources, Thailand's traditional comparative advantages in terms of labor and resources may be rapidly eroded. As other Asian countries move toward more investment in R&D, and has made significant advances in new products, certain export products from Thailand will become less competitive, and hence the survival of some industries may be at risk. It is possible that without substantial efforts to develop its science and technological capabilities to support industrial development, Thailand may face major economic and social crises in the near future.[53]

2.7.2 Problems and Obstacles of R&D in Thailand

The main problems and obstacles of R&D in Thailand are as follow[54]:

i. R&D does not directly respond to the current industrial needs due to the lack of integration or participation efforts from relevant sectors to identify relevant problems. R&D projects also lack inputs from entrepreneurs. As such, many of R&D works does not respond to relevant industrial needs, and thus, cannot be directly and effectively commercialized.
ii. There is a lack in systematic management of knowledge acquired from R&D. Agencies responsible for R&D activities usually undertake R&D independently, thus, lacking integration and network communication of knowledge acquired from R&D efforts. There is no central unit to systematically compile and arrange the knowledge obtained from R&D

[53]Nit Chantramonklasri, *supra* note 51, at 24
[54] King Mongkut's Institute of Technology North Bangkok, *supra* note 46, at 3

activities, and thus, relevant entrepreneurs have no access to the knowledge base.

iii. Lack of extension and commercialization of R&D work. Each industrial R&D work requires time and continuity, thus, there is a need for budget support to work on past R&D works, whereas the government's budget allocation needs to be approved earlier. Moreover, such budget is often limited and dependent upon the agencies' current needs.

iv. Entrepreneurs in Thailand also often fail to recognize the importance of creating innovation or differentiation. They view that purchasing technology or copying knowledge is easier and more convenient than investing in R&D activities, and often fails to recognize that R&D efforts could directly corresponds to their actual needs. They also perceive R&D efforts to be risky, requiring a substantial amount of budget and often involving complicated activities.

v. Lack of incentives to stimulate Thai entrepreneurs to invest in R&D. Due to the country's relatively small economy, whereas R&D requires a lot of capital and budget, the private sector often does not have enough incentives to invest in R&D. As the market for R&D is usually small, it is often thought that the return on investment would not be worth the money.

vi. Entrepreneurs lack the resources to support industrial R&D activities such as capital or budget, tools and technology for R&D, researchers or experts in specific fields of R&D, knowledge or beginning guideline to undertake R&D, etc.

vii. The policies of the government and relevant agencies to promote and support industrial R&D lack continuity and unity. Policies change as executives change. Policies also involve numerous agencies working independently such as Ministry of Industry, Ministry of Education, Ministry of Science and Technology, Ministry of Information and Communication Technology, Office of the National Economic and Social Development Board, Office of the National Research Council of Thailand etc. These are independent agencies involved in formulating policies, R&D funding, promotion and support of industrial R&D, human resource development. They also play a role in creating R&D work.

viii. Thai people still lack adequate demands for R&D. In addition, the mechanisms in protecting consumers' rights in Thailand remain relatively weak, resulting in inadequate protection of consumers 'rights in general. Thai consumers sometime do not possess sophisticated taste in consumption behaviors, and are not very fastidious about the purchase of goods and services. They also do not have the tendency to stand up for their consumer rights upon receiving sub-standard or unreasonably priced products or services. Thus, producers of goods and services have no interest to invest in R&D in order to improve the quality of their product offers.

CHAPTER 3
TAX INCENTIVES FOR PROMOTING R&D IN FOREIGN COUNTRIES

3.1 SINGAPORE

3.1.1 Basic Backgrounds

Income in Singapore is subjected to foreign tax and is mainly based upon territory and source.[55] Under the Singapore Income Tax Act ("SITA"), companies that are registered under Singaporean Laws or laws of other countries will be subjected to income tax in Singapore if the source of income is derived from Singapore. However, there are tax exemptions available under certain circumstances. Singapore is said to be one of the countries with the lowest corporate income tax rate to attract foreign investment, encourage entrepreneurship, all for the purpose of business development. [56] Generally, the corporate income tax rate in Singapore is 17%, in which partial tax exemption will be granted for the first SG$300,000 of taxable income.

The deductible expenses incurred from the course of production of income is mentioned in Section 14 of SITA[57], in which such expenses are allowed as deductions of the taxable income. However, for encouraging R&D activities in its country, Section 14D [58] provides an exception to the general rule that new product and process development costs must be amortized by allowing current deductions for R&D

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[55] Section 10 of SITA

[56] Future ready Singapore,"*taxation"*, *See:* http://www.edb.gov.sg/content/edb/en/why-singapore/ready-to-invest/setting-up/taxation.html, accessed on September 9, 2015

[57] Section 14(1) of SITA - For the purpose of ascertaining the income of any person for any period from any source chargeable with tax under this Act (referred to in this Part as the income), there shall be deducted all outgoings and expenses wholly and exclusively incurred during that period by that person in the production of the income.

[58] *See* Appendix D

expenditures incurred by a taxpayer in the conduct of its trade or business (including payments to R&D organizations).

The reason why Singapore is selected for comparison is because, although Singapore is a small country, it is one of the most advanced country in terms of R&D compared to any other country in South East Asia. Even though Singapore has no natural resources, its highly developed and highly educated human resources are able to drive innovation and technological advancement effectively in order to compete with other countries.

Singapore places great importance in the development of science and technology; a budget of over 400 billion baht is allocated towards the 5-year strategic plan (2011-2015) for R&D, which is 20% more than the previous plan, totaling up to almost 10% of total government expenditure. This is because the Singaporean government believes that R&D is the key to driving the country's economy towards the goal of becoming an Innovation-Driven Economy.[59] Judging from its R&D capabilities, Singapore is considered the top ASEAN country with R&D expenditure as a percentage of GDP of up to 2.15%, which is five times more than that of Thailand. Its number of researcher per 1,000 people ratio is also ten times more than Thailand.[60] Thus, it is important that we study the various tax schemes for supporting R&D adopted by Singapore and compare it to our own.

3.1.2 Definition of R&D as Prescribed by the Corporate Tax Statute

Section 2 of the SITA defines R&D as "any systematic, investigative, and experimental study that involves novelty or technical risk carried out in the field of science of technology with the object of acquiring new knowledge or using the results

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[59]SoftbankThai, *"Imporance of National Development of Singapore"*, *See:* http://www.softbankthai.com/Article/Detail/909, access on May16, 2016

[60] World Bank, *supra* note 2

of the study for the production or improvement of materials, devices, products, produce, or processes (with specified exclusions)"

In order for an R&D activity to be qualified, the activity must meet three requirements, which are listed below:

(1) The objective of such activity must be for the purpose of

(a) Acquiring new knowledge;

(b) Creating new products or processes; or

(c) Improving existing products or processes;

(2) The activity involves novelty or technical risk; and

(3) The activity is a systematic, investigative, and experimental ("SIE") study in the field of science or technology.

Activities that directly support core R&D activities may also qualify. However, the definition of R&D only focuses on the field of science or technology. Some activities may not qualify as R&D if it falls under the list of activities stated below:[61]

(a) quality control or routine testing of materials, devices or products;

(b) research on social sciences or humanities;

(c) routine data collection;

(d) efficiency surveys or management studies;

(e) market research or sales promotion;

(f) routine modifications or changes to materials, devices, products, processes or production methods; or

(g) cosmetic modifications or stylistic changes to materials, devices, products, processes or production methods;

(h) development of a computer software that is not intended to be sold, rented, leased, licensed or hired to two or more persons who are not related parties to each other or to the person who develops the software, or on whose behalf the development of the software is undertaken.[62]

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[61] Section 2 of SITA

[62] This exclusion has since been removed in YA2012 and such projects may henceforth qualify if they can meet the three requirements of qualifying R&D.

3.1.3 R&D Tax Incentives

The importance of R&D has been emphasized by the Singaporean government since 1980. The Committee on Singapore's Competitiveness (CSC) was formed in May 1997 with the tasks of assessing Singapore's economic competitiveness over the next decade and proposing strategies in order to strengthen the position of Singapore's competitiveness.[63] Singapore's government has gone even further to promote the country's growing international reputation as a base for R&D by introducing huge tax incentive measures. These measures include the Liberalization of R&D Tax Deduction, the Research and Development Tax Allowance Scheme (RDA), and The Research and Development Incentive for Start-up Enterprise (RISE). In the 2010 budget year, tax deduction of qualifying R&D expenditure was further enhanced by the introduction of the Productivity and Innovation Credit (PIC) Scheme. With the PIC Scheme, the RDA and RISE schemes were phased out by the year of assessment (YA) 2011. However, taxpayers may continue to utilize their RDA granted against their income up to YA2016.[64]

3.1.3.1 Liberalization of R&D Tax Deduction

To encourage R&D in Singapore and to build innovative capabilities of businesses, companies can enjoy a 100% tax base deduction under Section 14D of SITA and additional deduction of 50%, under Section 14DA(1) of the SITA on qualifying expenditure incurred on qualifying R&D activities up to YA 2025.

i. Base Deduction

Under Section 14D of the SITA, taxpayers conducting manufacturing trade or business, or those conducting trade or business for the provision of any services may

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[63] Committee on Singapore's Competitive, *"executive summary"*, *See:* http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan004867.pdf, accessed on September 9, 2015

[64] IRAS e-Tax Guide, *"Research and Development Tax Measures (Fourth edition)"*, 28, *See:* https://www.iras.gov.sg/irashome/uploadedFiles/IRASHome/e-Tax_Guides/etaxguide_IIT_RnDTaxMeasures_2015-01-22.pdf, September 9, 2015

enjoy tax deduction. The deduction is available for expenses on R&D, irrespective of whether the R&D is done in-house by the taxpayer themselves, or by an R&D organization on behalf of the taxpayer, whether done in Singapore or abroad.[65] However a deduction for R&D expenditure is only available to a taxpayer who carries out manufacturing or service trade or business, where the R&D activity must be related to that trade or business. The amount of tax deduction under Section 14D is equal to 100% of the amount of eligible R&D expenditure.

Effective from YA 2009, taxpayers will be allowed to claim deductions for R&D expenses not incurred from existing trade or business. These claims, however, will be subjected to the condition that the R&D expenses must be incurred from R&D activities performed in Singapore, either by the taxpayer themselves or by a R&D organization in Singapore on behalf of the taxpayer; which means that the R&D expenditures may not have to be related to the entity's existing trade or business unless the R&D is performed outside Singapore.

Eligible expenses include wages and salaries, materials, and utilities incurred directly for R&D activities. Capital expenditures on plant, machinery, land, or buildings, or on alterations, additions, or extensions to buildings, or in the acquisition of rights arising in or arising out of R&D are explicitly excluded.[66]

Unutilized R&D expenditures may be carried over indefinitely, subject to substantial shareholders' test. They may also be held back, subject to certain restrictions.[67]

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[65] Where a taxpayer pays an R&D organisation overseas to do R&D on its behalf, the taxpayer is granted the tax deduction under Section 14D of the ITA only if the taxpayer undertakes that the benefit of the R&D to be done accrues to itself.

[66] Section 14 (a) (1) of SITA

[67] Deloitte (2013), *"Global Survey of R&D Tax Incentives: Singapore), See:* http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/Tax/US_Tax_RD_Global_RD%20Survey_March_2013.pdf, access on September 9, 2015

ii. Additional Deduction

According to Section 14DA(1) of SITA[68], in order to qualify for Section 14D on R&D Deductions, taxpayers incurring expenses on R&D activities carried out in Singapore will qualify for an additional deduction of 50% of qualifying expenditures. The 150% tax deduction will be granted towards the R&D activities carried out by company itself in Singapore, or by outsourcing to R&D organizations in Singapore. This higher tax deduction will be available from the years of assessment from YA2009 to YA2015.[69]

Qualifying expenditures have been defined to include staff costs[70], consumables[71], and any other expense prescribed by the Minister of Finance.[72] Where taxpayers enjoy government grants/ subsidies on R&D, the amount of qualifying R&D expenditure eligible for deduction is net of the grant/ subsidy amount. Where R&D is outsourced, the eligible amount is generally 60% of the outsourced fee.[73] This is a narrower definition of qualifying expenses than that expressed under Section 14D.

In the case where the R&D expenditure is incurred from R&D activities the taxpayer has conducted outside of Singapore, it does not qualify for the additional deduction of 50%,[74] although it will still qualify for deduction under Section 14D. The

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[68] *See* Appendix D

[69] In Budget year 2014, the Minister for Finance has decided to extend Additional 50% deduction for qualifying R&D expenditure under Section 14DA (1), for 10 years till YA 2025.

[70] *"staff costs"* means any salary, wages and other benefits paid or granted in respect of employment (excluding director's fees), whether in money or otherwise, to any employee for carrying out the research and development.

[71] *"consumables"* means any materials or items used in the research and development which, upon such use, are consumed or transformed in such a manner that they are no longer useable in their original form, but does not include utilities.

[72] No further items of expenditure have been prescribed for this purpose

[73] IRAS e-Tax Guide, *supra* note 64, at 18

[74] Iraz Haspolat Kaya- Burçin Bozdoğanoğlu, *"Research and Development (R&D) Tax Incentives in Singapore"*, **International Journal of Humanities and Management Sciences (IJHMS).** Volume 4, Issue 2 (2016), *See:* http://www.isaet.org/images/extraimages/P0416004.pdf

tax deduction will, however, remains unchanged at 100% of the qualifying R&D expenditure incurred.

3.1.3.2 Productivity and Innovation Credit (PIC)

In budget year 2010, the government introduced the PIC [75] as a major enhancement to spur a broader range of innovative activities with generous tax benefits.[76]

PIC will cover six activities along the innovation value chain. One of them is for R&D activities conducted in Singapore. In addition to the 150% tax deduction under Sections 14D and 14DA, companies can claim a further 250% tax deduction on qualifying R&D expenditure up to $400,000 under the PIC scheme. The details for the PIC relating to R&D activities are given below:

i. **Enhanced Deduction to Encourage Research & Development ("R&D") in Singapore[77]**

Under Section 14DA(2) of SITA[78], enhanced deduction is granted for 5 years from tax years 2011 to 2015.[79] Under this scheme, tax deduction for qualifying R&D expenditures was further enhanced to 400 percent of qualifying expenditure under PIC. R&D activities carried out in Singapore are enhanced by 250% of total Singapore-based R&D. For R&D activities conducted overseas, a further 300% deduction is granted to

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[75] The Productivity and Innovation Credit (PIC) was introduced in Budget 2010. It provides enhanced deductions of 250 percent cap at S$300,000 for investments under each of six activities of the innovation chain: automation equipment, training, acquisition and registration of IPRs, R&D and design. For YAs 2011 and 2012, the expenditure cap for each activity is S$600,000.

[76] Budget 2010 Key Budget Initiatives 1, *"Raising Productivity: Skills, Innovation And Economic Restructuring"*, *See:* http://www.singaporebudget.gov.sg/budget_2010/speech_toc/download/FY2010_Key_Budget_Initiatives1.pdf , accessed on September 9, 2015

[77] James M. Eberle, Kathleen King and Brett Nowak, **Taxand Global Guide To R&D Tax Incentives**, Alvarez & Marsal Taxand, 194, (2011-2012 Edition)

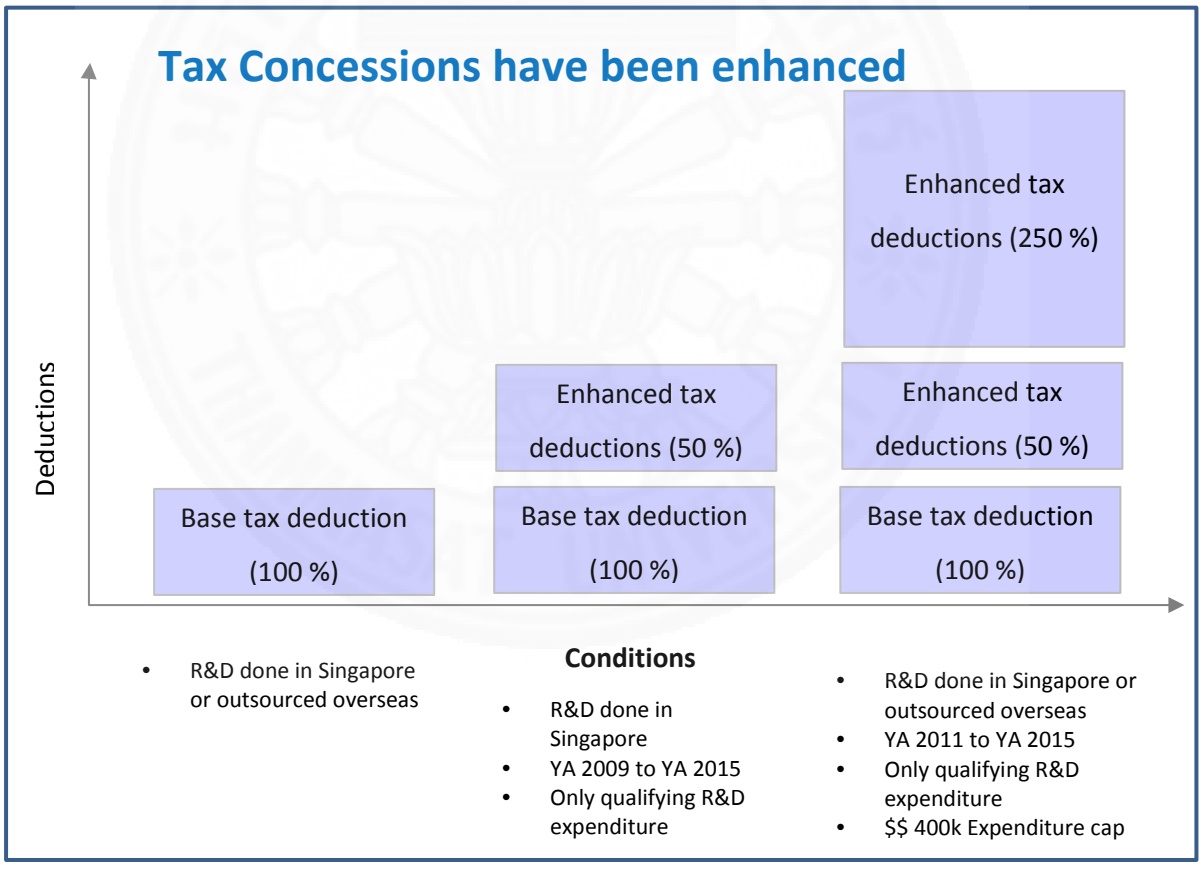
[78] *See* Appendix D

[79] In Budget 2014, The PIC will be available for all businesses from YA 2011 to YA 2018.

the first $400,000 of qualifying overseas R&D expenditure incurred during a basis period. This is in addition to the 100% of base deduction and 50% of additional deduction on qualifying R&D expenditures incurred under Section 14D and Section 14DA (1) respectively. Thus, businesses will similarly enjoy a 400% tax deduction for the first $400,000 of their qualifying R&D expenditure per year.[80]

R&D costs (comprising of staff costs and consumables) exceeding the cap will still enjoy 150% tax deduction if the R&D is done in Singapore. Any other R&D expenditure, including money spent on R&D done overseas, will enjoy 100% tax deduction.

Figure 3.1: Computation of Enhanced Deduction under PIC



[80] As announced in Budget 2014, from YAs 2015 to 2018, qualifying businesses can enjoy 400% tax deductions/allowances on up to $600,000.

ii. **Phasing out of New R&D Allowance (RDA) and New R&D Incentive for Start-up Enterprise (RISE) schemes**

The RDA and the RISE schemes were introduced in the budget year 2008. Under the RDA scheme, a company deriving chargeable income in any YA falling under the period from YA 2009 to YA 2013 will be granted R&D tax allowance of up to $150,000, computed based on 50% of the first $300,000 of its chargeable income in that YA. The last YA for which R&D allowance budget can be granted and utilized is YA 2016; for those allowances that are not utilized within YA 2016 will be disregarded.

The RISE scheme allows a qualifying start-up company to surrender their tax adjusted losses in exchange for a cash grant computed by using a prescribed rate. With PIC, the RISE scheme will be consolidated in PIC while the RDA scheme was phased out in YA 2011.

According to Section 37I of SITA[81], eligible businesses may convert up to $100,000, but not less than $400, of their total expenditure for each YA in all of the six

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[81] Section 37I(1) of SITA - Subject to this section, where any qualifying person has incurred expenditure

(a) during the basis period relating to the year of assessment 2011 or the year of assessment 2012; or

(b) during any quarter of a basis period relating to the year of assessment 2013, the year of assessment 2014, the year of assessment 2015, the year of assessment 2016, the year of assessment 2017 or the year of assessment 2018,

for which a deduction or an allowance is allowable or can be made to him under any of the provisions of this Act mentioned in Subsection (2A) (as qualified by that subsection), he may, in lieu of one or more of the deductions or allowances or any part thereof, and in respect of —

(i) the expenditure qualifying for it or them; or

(ii) any part of such expenditure,(referred to in this section as the selected expenditure) the total amount of which (together with the cash price of any PIC automation equipment or intellectual property rights in respect of which an election under Subsection (4A) is made at the same time) is at least $400, make an irrevocable

qualifying activities that have been mentioned earlier in PIC scheme into a non-taxable cash payout. From YA 2011 to 2012, the cash payout rate is at 30% of the total expenditure incurred. As for YA 2013 to 2015[82], the cash payout is increased to 60% for the first $100,000. This measure is used to support small and growing businesses that may not have sufficient cash in hand to conduct innovative activities or to improve productivity.

The option to convert R&D deductions into cash is available to all qualifying businesses including, but not limited to, the sole proprietorships, partnerships and companies that have incurred qualifying expenditure and are entitled to PIC during the basis period for qualifying YA with at least three local employees.[83] This may include loss-making qualifying start-up companies. However, once the qualifying expenditure is converted into cash, it cannot be reclaimed as tax deduction nor allowances.

3.1.3.3 Double Tax Deduction on R&D Project

Other discretionary tax incentives include tax deduction on R&D expenditure incurred on projects. Section 14E of SITA[84] allows double deductions of up to 200% of certain qualified expenditures approved by the government for R&D projects that are carried out in Singapore.

The total deduction of an approved R&D project undertaken in Singapore will be capped at a maximum of 200% of the expenditure incurred rather than 150%. The approved R&D project must be carried out within Singapore, subject to application and

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written election for a cash payout computed in accordance with Subsection (3) or (4), as the case may be.

[82] In Budget 2014 The cash payout option is available from YA 2011 to YA 2018

[83] Local employees mean Singapore citizens or Singapore permanent residents with CPF contributions excluding sole-proprietors, partners under contract for service and shareholders who are directors of the company.

[84] *See* Appendix D

approval by the Singapore Economic Development Board.[85] The conditions will need to be negotiated upon, however, this scheme expired on March 31, 2015.[86]

Unutilized R&D expenditures may be carried over indefinitely, subject to substantial shareholders' test. They may also be carried back subject to certain restrictions.

The combined claims under Section 14E and Sections 14, 14D, and 14DA, with respect to approved projects, are capped at 200% of the taxpayer's actual expenditures. However, the 200% deduction does not apply to R&D expenditures that qualify for Section 14DA (2). To illustrate this, if a company wishes to claim a 250% enhanced deduction on the first $400,000 of qualifying local R&D expenditure incurred for an approved R&D project, it is precluded from making any further claim under Section 14E of the SITA on that specific expenditure. The company may, however, claim for further tax deduction under Section 14E of the SITA on the balance of qualifying R&D expenditure that has not been claimed for the 250% enhanced deduction, subject to the cap of 200% of such expenditure incurred.[87]

3.1.4 Role of the Tax Authorities[88]

Expenditure claimed is processed by the Singapore tax authorities, i.e. the Inland Revenue Authority of Singapore (IRAS). The IRAS also monitors the activities that are claimed to ensure compliance with the R&D enhanced tax deduction regime. Companies are not required to seek government pre-approval for main R&D tax deductions. For the other discretionary tax incentives, approval must be granted by the EDB. To be eligible for enhanced tax deductions, a company must submit in the claim

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[85]Singapore Economic Development Board, *"future ready Singapore", See:* https:// www.edb. gov.sg/content/edb/en.html, accessed on August 5,2016

[86] In Budget 2014, the Minister for Finance has decided to extend further deduction under Section 14E, for 5 years till YA 2020.

[87] IRAS e-Tax Guide, *supra* note 64, at 53

[88] Iraz Haspolat Kaya- Burçin Bozdoğanoğlu, *supra* note74 , at 183

of its income tax return and tax computation, together with the completed R&D Claim Form by the annual filing deadline of November 30th. Where a company incurs at least SG$150,000 of R&D expenditure (net of Government grants and subsidies), it is required to provide a detailed description of the R&D project undertaken based on prescribed guidelines. Where a company wishes to claim more than 60% of the sum payable to an R&D organization or under a Cyber Security Agency (CSA) as eligible R&D expenditure, the claimant must submit to IRAS copies of invoices issued by the R&D organization detailing a breakdown of the expenditure items.

IRAS requires taxpayers to lodge in an R&D claim for each income tax return for the relevant YA on a project-by-project basis. Detailed scientific/technical project reports must be submitted for each R&D project claimed to substantiate that the R&D activities carried out qualify as R&D for tax purposes. Corresponding R&D expenditure breakdowns (staff costs, consumables, payments to R&D organizations) are also required on a project-by-project basis. It is critical for taxpayers to maintain proper documentation of their R&D projects in order to substantiate their claims to IRAS when requested. Taxpayers are encouraged to maintain concurrent documentation from the beginning of the R&D project rather than after completion. This is especially important for illustrating how current knowledge was not available at the time R&D was performed.

3.2 MALAYSIA

3.2.1 Basic Backgrounds

Based on the Malaysian Income Tax Act 1967 (MITA), income tax is imposed on a territorial basis. Companies, whether owned by a resident or non-resident in Malaysia, are taxed on income derived in or from Malaysia. Foreign income remitted into Malaysia is exempted from tax.[89] Generally, companies in Malaysia (resident or non-resident) are subject to tax at 25%. However, SME can enjoy a preferential tax rate of 20% on the first RM 500,000, and 25% on the remaining balance.

Malaysia offers a wide range of tax incentives to foster innovation and industrial technology. These tax incentives are provided in the Income Tax Act 1967 and the Promotion of Investments Act 1986 (PIA), and are focused on activities related to the field of science or technology with the objective of applying the study outcome for the production or improvement of materials, devices, products, or processes.

The reason why Malaysia is selected to be compared with Thailand is because Malaysia, as a bordering country, has shown rapid economic growth in recent years. Its growth in The Global Competitiveness Report 2014-2015 has moved Malaysia up four notches from the 24th place out of 144 countries in 2013-2014 to the 20th place in 2014-2015.[90] Malaysia's progress aligns with the growth in the development in R&D and innovation. Compared to other countries in ASEAN, Malaysia is second only to Singapore on R&D investment amount. Its R&D expenditures total up to 0.79% of GDP in 2008, and have almost doubled to 1.13% within 5 years (in 2012). Malaysia's ratio of researchers to 1,000 people is 4 times more than Thailand at 4.21.[91] The 11th Malaysia Plan 2016-2020[92] will focus on translating innovation into wealth through strengthening relational capital in order to foster stronger linkages, collaboration and

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[89] Section 28, Schedule 6 of MITA.

[90] Klaus Schwab, *"The Global Competitiveness Report2014–2015"*, **World Economic Forum 2014**, 13

[91] World Bank, *supra* note 2

[92] Eleventh Malaysia Plan, *See:* http://rmk11.epu.gov.my/index.php/en/, accessed on August 10, 2016

trust among stakeholders. Stronger relational capital will improve coordination, enabling the sharing and testing of ideas across multiple stakeholders and disciplines, which will improve the national innovation ecosystem. Malaysia aims to achieve a Gross Expenditure on R&D (GERD) of at least 2.0 percent by 2020.[93]

3.2.2 Definition of R&D as Prescribed by the Corporate Tax Statute

Section 2 of the PIA (1986) defines research and development means any systematic or intensive study carried out in the field of science or technology with the object of using the results of the study for the production or improvement of materials, devices, products, produce or processes, but does not include;

(a) quality control or routine testing of materials, devices, products or produce;

(b) research in the social sciences or the humanities;

(c) routine data collections;

(d) efficiency surveys or management studies; and

(e) market research or sales promotion;

Design and prototyping activities are also eligible for R&D incentives effective from YA 1998. That is, a company that carries out designing or prototyping as an independent activity will also qualify for R&D incentives.[94]

In order to obtain approval for a research project / activity, the definition given above must be considered. The research activity must gear towards the production of new or substantially improved materials, devices, products, processes, systems or services prior to the commencement of commercial production or use. If successful, it

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[93] Eleven Malaysia Plan, *"Strategy 21th: Translating innovation to wealth"*, Economic Planning Unit, Prime Minister's Department, 10

[94] Official Portal of Ministry of Finance Malaysia, "Research and Development", *See:* http://www.treasury.gov.my/index.php?option=com_content&view=article&id=706&Itemid=200&lang=my, accessed on September 9, 2015

will result in the extension of scientific or technical advancement / knowledge. And lastly, the objective of the research must comply with the country's needs and must be beneficial to the Malaysian economy.[95]

3.2.3 R&D Tax Incentives

Section 34(7)[96] of the Income Tax Act 1967 provides for single deduction of expenditure, non-capital in nature, on scientific research related to the business and directly undertaken by the taxpayers or on their behalf. This measure, however, fails to attract businesses.[97]

The first R&D specific incentive was introduced in 1982 where a 133% special deduction is allowed for research expenditures approved by the Minister of Finance. This incentive has been enhanced to double deduction since 1986.[98]

In early 1990, the government introduced a special double deduction for contributions made to approve research institutes, or payments made for the service delivered by an approved research institution. Recognizing the need for Malaysia to improve on efficiency, productivity, and cost reduction, the government has then reoriented its R&D program towards industries and the adoption of high technology.[99]

The government has tried to springboard Malaysia to a higher level on the value chain, and to increase the quality of its exported manufactured goods. The government

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[95] Public Ruling No. 5 /2004 clause 12

[96] Section 37(7) of ITA - There may be deducted from the relevant gross income any expenditure, not being capital expenditure incurred on plant, machinery, fixtures, land, premises, buildings, structures or works of a permanent nature or on alterations, additions or extensions thereof or in the acquisition of any rights in or over any property, incurred by the relevant person during the relevant period on scientific research related to the business and directly undertaken by him or on his behalf.

[97] ACCA, "*Tax incentives for Malaysia as a regional hub and for research and Development,*", **SA Technical**, 9 (2011), *See:* http://www.accaglobal.com/content/dam/acca/global/pdf/sa_nov2011_RandD3.pdf, accessed on September 9, 2015

[98] *Id.*

[99] *Id.*

actively promotes and encourages R&D activities in its country.[100] In addition to research grants[101], the tax incentives on contract R&D Company, R&D Company, and in-house R&D activity were introduced after the budget year 1994. Pioneer status as well as allowances on tax investment were also introduced at the same time.

There are numerous tax incentives in Malaysia to encourage companies and institutions to carry out R&D activities. The main R&D incentives are granted in the form of Pioneer Status, Investment Tax Allowance, double deduction, and tax exemption.

3.2.3.1 Investment Tax Allowance

Investment Tax Allowance (ITA) is a capital expenditure-based incentive which is given as an exemption of income. Income is computed based on the statutory income level, at which point the eligibility for exemption can be determined.[102] The incentives apply to three different kinds of research activity[103] as follow:

i. Contract R&D Company

The definition of a contract R&D company is specified in Section 2 of the PIA (1986) as a company that provides R&D services in Malaysia only to companies other than its related companies.[104] Contract R&D Company is eligible for either of the following incentives:

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[100] *Id*., at 10

[101] R&D grants are available under the special incentive package, which is a reimbursable dollar-for-dollar grant on qualifying R&D expenditure.

[102] Technical, *"Tax Incentives for Promotion of Investment"*, **Student Accountant**, 3 (2008), *See:* http://www.accaglobal.com/content/dam/acca/global/PDF-students/2012s/sa_0ct08_thornton2.pdf, accessed on September 9, 2015

[103] *"Malaysia – Incentives for Investment"*, Pytheas Limited (2006), *See:* http://www.pytheas.net/docs/malaysia/MalaysiaIncentivesforInvestment.pdf

[104] Under the PIA 1986, a related company is defined as a company where at least 20% of its issued share capital is owned (directly or indirectly) by another company.

(a) Pioneer Status

A company that is eligible for Pioneer status[105] will be given a five-year tax exemption[106] on 100% of its statutory income such as tax-adjusted income after capital allowance claim. Unused capital allowances and accumulated losses incurred during such period can be carried forward and deducted from income earned by the company after the pioneer period.[107]

(b) Investment Tax Allowance (ITA)

Under Section 29D (1) of PIA, a contract R&D company that has incurred, in the basis period for a YA with respect to the activity, capital expenditure relating to R&D for the purposes of that activity is eligible for ITA. ITA offers 100% allowance on qualifying capital expenditures incurred within a period of ten years. The allowance can be used to offset up to 70% of the statutory income for each YA.[108] Unused allowances can be carried forward to subsequent years until these are fully utilized.[109]

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[105] Section 5 (1C) of PIA states that "any company or person proposing to register a contract research and development company, being desirous of establishing or participating in an activity relating to research and development and intending that a factory be constructed, or where the factory is already in existence, be occupied in Malaysia for that purpose, may make an application in writing to the Minister for pioneer status, or for pioneer status to be given when the proposed company has been registered, in relation to that activity and that factory."

[106] Section 14 of PIA The tax relief period of a pioneer company shall begin on its production day and continue for a period of five years.

[107] Section 21A of PIA

[108] Section 29D (3) paragraph 2 Provided that the amount so exempt shall not exceed seventy per cent of the statutory income of that business of the company for that year of assessment.

[109] Section 29D (4) of PIA Where, by reason of an insufficiency or absence of statutory income of the business of the company in respect of an activity relating to research and development for a year of assessment, effect cannot be given or cannot be given in full to any allowance to which the company is entitled under this section for that year in relation to the source consisting of that business, then, notwithstanding Subsections (1), (2) and (3), so much of the allowance in question as cannot be given for that year shall be deemed to be an allowance to be given to the company under this section for the first subsequent year of assessment for which there is statutory income from that business,

The remaining 30% of statutory income will be taxed at the prevailing corporate income tax rate.

There are two types of capital expenditure according to subsection (6) of Section 29D, which are capital expenditure in relation to manufacturing-based research, and capital expenditure in relation to agricultural-based research. Manufacturing-based research refers to capital expenditure incurred in a factory, or plant and machinery used in Malaysia for the purpose relating to R&D. However, it does not include buildings used for living purpose or plant and machinery, where such buildings, plant, and machinery are provided wholly or partly for the use of a director or an individual who is a member of the management, administrative, or staff.[110]

Additionally, any person who pays for the use of services of a contract R&D Company qualifies for double deduction of such payments under Section 34B.

ii. R&D Company

R&D Company is defined under Section 2 of the PIA (1986) as a company that provides R&D services in Malaysia to its related companies or any other companies.

R&D Companies will not qualify for pioneer status. They are only eligible for ITA. According to Section 29E(1) of PIA, where a R&D company has incurred, in the basis period for a YA in respect of the activity, capital expenditure relating to R&D for the purposes of that activity, the ITA equals 100% of qualifying capital expenditure incurred within 10 years offset against 70% of statutory income. [111] Any unabsorbed losses and capital allowances may be carried forward; however, this must be in accordance with the related general provisions.[112]

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and so on for subsequent years of assessment until the company has received the whole of the allowance to which it is so entitled

[110] Technical, *supra* note 102 at 4

[111] Section 29E (3) paragraph 2

[112] Section 29E (4) of PIA

Additionally, any person who pays for the use of services of an R&D company and is not a related company will qualify for double deduction of such payments under Section 34B of the ITA.

iii. In-House R&D

According to Section 2 of the PIA (1986), In-House R&D are research and development carried on in Malaysia by the company itself for the purposes of its own business.

Section 29F(1) of PIA states that a company that has incurred, in the basis period for a YA in respect of the activity, capital expenditure relating to in-house research for the purposes of that activity is eligible for an ITA of 50% on the qualifying capital expenditure incurred (for R&D purposes) within a period of 10 years. The allowance can be used to offset 70% of the company's statutory income for each YA.[113] Unused allowances can be carried forward to subsequent years until such allowances have been fully utilized.[114] The remaining 30% of statutory income will be taxed at the prevailing corporate income tax rate. A company that incurs revenue expenditures (i.e., not capital expenditures) for the purpose of undertaking approved in-house research in relation to its business will also be eligible for a double deduction with respect to such revenue expenditure.

3.2.3.2 Double Deduction for R&D

In addition to the above benefits, a double deduction for R&D expenditures is also available. The R&D double deduction is applicable to three types of expenditures:

(1) non-capital expenditures for R&D approved by the Minister of Finance and directly undertaken by the company,

(2) payments for the R&D services of approved research institutes, approved research companies, R&D companies, or contract R&D companies, and

(3) cash contributions to approved research institutions.

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[113] Section 29F (3) paragraph 2 of PIA

[114] Section 29F (4) of PIA

i. Super deduction for non-capital expenditures

For noncapital expenditures, Section 34A (1)[115] of MITA provides that the deduction shall be made from the gross income of the business for that period in regard to expenditure, not including capital expenditure incurred on plant, machinery, fixtures, land, premises, buildings, structures or works of a permanent nature or on alterations, additions or extensions thereof or in the acquisition of any rights in or over any property, incurred by that person during that period on research

(a) approved by the Minister; or

(b) undertaken by that person where that person is participating in industrial adjustment approved under Section 31A of the PIA (1986).

Under subsection 4 of Section 34A, the amount of deduction to be made shall be twice the amount (double deduction) in respect to qualifying research expenditure, which is revenue in nature and which is related to a research program undertaken by a business entity approved by the Minister of Finance. Double deduction is applied to the adjusted income of the business. So, Company can enjoy 200% deduction on qualifying expenditure.

To qualify for double tax deduction, the research expenditure must first obtain prior approval from the Minister of Finance. The subject of research does not need to be related to the business carried out by the business entity; however, it must be incurred in the basis period.

Qualifying expenditure includes raw materials used in the research project, technical services[116], travelling and transportation costs, salary and allowances of research personnel, maintenance costs of research buildings and equipment, and rental of equipment, machinery or buildings used for research.[117] In this regard, capital

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[115] *See* appendix E

[116] Payment for technical services undertaken outside Malaysia for research project will qualify for double deduction claim only if the amount incurred is less than 70% of the total allowable expenditure for double deduction.

[117] Public Ruling No. 5 /2004 clause 13

expenditure on the acquisition of any rights in or over any property, including the payment of royalties, licensing fees, etc., will not be considered for double tax deduction.[118]

Where a pioneer company carries out an approved research project, it can elect to deduct the qualifying research expenditure in the post-pioneer period.[119] For R&D Companies, double tax deduction can only be given when the R&D Company does not opt to apply for ITA incentive. Companies performing in-house R&D are allowed to claim up to 200% for double tax deductions on revenue (non-capital) expenditures incurred in qualifying R&D activities.[120]

ii. Special deduction for contribution to an approved research institute or payment for use of R&D services

Double tax deduction is also available for cash contributions or donations made to approved research institutes, and for payments made to the use of the services provided by approved research companies, contract R&D companies, and R&D companies that are revenue in nature.

Subject to Section 34B (1) of MITA[121], in ascertaining the adjusted income of a person from a business for the basis period in a YA, a deduction shall be made from the gross income from the business for that period with respect to expenditure, not being capital expenditure, incurred by that person during that period as:—

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[118] Public Ruling No. 5 /2004 clause 14

[119] Section 34B subsection (4A) of MITA A pioneer company may, in a return of income for the year of assessment in which the expenditure referred to in subsection (1) had been incurred, elect that the amount of that expenditure be deducted in the first basis period in respect of its post-pioneer business for a year of assessment.

[120] *"Global Survey of R&D Tax Incentives"*, 2011, *See:* http://www.investinamericasfuture.org/PDFs/Global%20RD%20Survey%20Final%20-%202011.pdf, accessed on September 9, 2015

[121] *See* Appendix E

(a) contribution in cash to an approved research institute[122];

(b) payment for the use of the services of an approved research institute or an approved research company[123]; or

(c) payment for the use of the services of a research and development company or a contract research and development company.

The amount of deduction to be made shall be twice the amount of expenditure, not being capital expenditure, referred to in that subsection.

3.2.4 Role of the Tax Authorities[124]

At present, the Inland Revenue Board of Malaysia (IRBM) is one of the main revenue collecting agencies of the Ministry of Finance (MOF). IRBM is responsible to collecting taxes under ITA, PIA and etc. Thus, the Pioneer Status, ITA claims, and certain incentive claims are monitored and processed by this agency. Applications for pioneer status, ITA incentives, or other special incentive schemes are required to be submitted to Malaysian Investment Development Authority (MIDA).

For All double deduction claims, companies are entitled to claim for expenses incurred on R&D projects pursuant to Section 34A and 34(B) of ITA, subject to the R&D project being approved by the Malaysian Inland Revenue Board (MIRB). The

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[122] An approved research institution includes the following: (a)all government research institutions, including institutions corporatized under Section 24 of the Companies Act 1965; (b)government funded universities which undertake research that conform to the definition of R&D as indicated above.

[123] An “approved research company” means a company, other than a company licensed under Section 24 of the Companies Act 1965, approved by the Minister to mainly carry on research in an industry specified in the approval and to commercially exploit the benefit of such research thereof;

[124] Robin Parson, Asia-Pacific research and development tax relief incentive, Ernst & Young, Australia, 2013, 11, *See:* http://www.ey.com/Publication/vwLUAssets/ 2013 _ Asia -Pacific_R_and_D_incentives/$FILE/2013_AsiaPac_RD_Incentives_ Guide.pdf

qualifying companies are also required to submit the R&D project application to the MIRB.[125]

When comparing Tax administration model between that of Malaysia and Singapore with Thailand, it is evident that in Thailand, The revenue department are part of the Government. Whilst in Malaysia and Singapore, IRBM was established in accordance with the Inland Revenue Board of Malaysia Act 1995 to give it more autonomy especially in financial and personnel management as well as to improve the quality and effectiveness of tax administration.[126] While IRAS was incorporated by the Inland Revenue Authority of Singapore Act to take over the functions previously performed by the Inland Revenue Department which was formed in order to collected tax in Singapore. The conversion gave IRAS the autonomy and flexibility to manage its personnel and financial resources.[127] Both of IRBM and IRAS have followed a semi-autonomous internal revenue administration (SARA) model. Under the SARA, the tax administration function has been taken out of the MOF and granted to a semi-autonomous entity labeled in public finance literature as revenue authorities or autonomous revenue authorities.[128] The purpose of converting from a government agency to a separate entity is to achieve flexibility in tax administration, in particular in terms of personal and finances, and efficiency.[129]

Thus, we can see that having the Thai Revenue Department as a part of the government's function can be both good and bad. Since taxation is a public policy and affect the people and the country as a whole, operating directly under the Government

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[125] Wong & Partners, "Highlights of the Malaysia Budget 2016", 4 (2015), *See:* http://www.wongpartners.com/files/Uploads/Documents/Type%202/WP/al_wp_malaysianbudget2016.pdf

[126] Inland Revenue Board Of Malaysia, "*IRBM Profile*", *See:* http://www.hasil.gov.my/bt_goindex.php?bt_kump=2&bt_skum=2&bt_posi=1&bt_unit=2&bt_sequ=1

[127] Inland Revenue Authority of Singapore *"History and Milestones"*. *See:* https://www.iras.gov.sg/irashome/About-Us/Our-Organisation/History-and-Milestones/

[128] Arthit Satthavorasit, *"Tax Incentive in Thailand"*, **Dhamniti Tax Magazine**, Vol.35 No.413 (2016) (อาทิตย์ สัทธวรสิทธิ์, 'มาตรการทางภาษีในประเทศไทย', เอกสารภาษีอากร, วารสารธรรมนิติ ฉบับที่ 35 เล่มที่ 413 (กุมภาพันธ์, 2558))

[129] *Id.*

would allow for a transparent and thorough examination to ensure that the policies are truly beneficial to the public, and not directed towards the benefit of a specific group or persons. However, by being directly under the Government, the implementation of tax policies may be delayed and is not concurrent with the current economic conditions. Thus, by adopting the SARA model, Singapore and Malaysia and response more rapidly to current economic events in every year, for example, the R&D Tax Benefit of 400% under the PIC Scheme in Singapore. Reflecting on Thailand's Tax Incentive for R&D, after the Royal Decree No. 297 was issued in 1996, there has been no changes made on the regulations, even though the economy and society has much developed since then, even if the Corporate Income Tax has been adjusted from 30% to 20%, the old Royal Decree has only been improved when the Royal Decree No. 598 has been enacted in 2016, where the previous decree was in place for over 20 years.

CHAPTER 4
TAX INCENTIVES FOR PROMOTING R&D IN THAILAND

4.1 Basic Backgrounds under the Revenue Code

In Thailand, the tax on income of juristic entities is called corporate income tax. Corporate income tax is levied on companies and juristic partnerships.[130] All juristic companies and partnerships established under Thai or foreign law which carry on business in Thailand are subject to corporate income tax.[131] A company and a juristic partnership incorporated under Thai law is subject to tax on its worldwide profits and gains, derived from both domestic and foreign sources. The corporate income tax rate in Thailand is 20 % on net profit. However, the rates vary depending on types of taxpayers

For a company or a juristic partnership incorporated under foreign law, they will be taxed on their income derived from operating or carrying business in Thailand. These type of entities will also be subject to the tax at the same rate as domestic corporations.[132] However, there are certain types of foreign legal entities- the international transportation firms who operate business in Thailand even fall within the scope of corporate income tax but only pay tax on gross receipts instead.[133] A company or juristic partnership incorporated under foreign laws and not carrying on business in

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[130] Section 39 of The Revenue Code : For income tax purposes, "juristic companies and partnerships" include the following:
a. A limited company, a public company, or a juristic partnership (a limited partnership or a registered ordinary partnership) organized under Thai or foreign law.
b. A business or profit-seeking enterprise operated by a foreign government, an organization owned by a foreign government, or any other juristic person organized under a foreign law.
c. A joint venture.
d. A foundation or association engaged in any business that produces revenue.

[131] Section 66 of The Revenue Code

[132] Section 66 of The Revenue Code

[133] Section 67 of The Revenue Code

Thailand but receiving assessable income, such as service fees, professional fees, royalties, interests, dividends, capital gains, which is paid from or in Thailand, will be subject to the flat rate of corporate income tax. However, it will be collected and taxed in the form of withholding tax based on the entity's gross income instead.[134]

In calculating net profits for corporate income tax, it is calculated from the company's net profit on the accrual basis according to Section 65 of the Revenue Code. A company shall take into account all revenue arising from or in consequence of the business carried on in an accounting period and deducting therefrom all expenses in accordance with the condition prescribed in Sections 65 Bis and 65 Ter of the Code.[135]

In is computed by taking into account all income arising from its business carried on in an accounting period on an accrual basis and deducting all expenses, according to the conditions prescribed

Section 65 *Taxable income under this Part is net profit which is calculated by deducting income from business or income arising from business carried on in an accounting period with expenses in accordance with conditions prescribed in Sections 65 Bis and 65 Ter. An accounting period shall be twelve months except in the following cases where it may be less than twelve months.*

1. a newly incorporated company or juristic partnership may elect to use the period from its incorporation date to any one date as the first accounting period.

2. a company or juristic partnership may file a request to the Director-General to change the last day of an accounting period. In such a case, the Director-General shall have the power to grant approval as he deems appropriate. Such an order shall be notified to the company or juristic partnership who files the request within a reasonable period of time and in the case where the Director-General grants the

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[134] Section 70 of The Revenue Code

[135] Revenue Department, "*Corporate Income Tax*", *See*: http://www.rd.go.th/publish /6044.0.html, accessed on August 5, 2016

permission, the company or juristic partnership shall comply to the accounting period as prescribed by the Director-General.

The calculation of income and expenses in paragraph 1 shall use an accrual basis. Income arising in an accounting period, even though it is not yet received in such accounting period, shall be included as income for that accounting period. All expenses relating to such income, even though they are not yet paid, shall be included as expenses for such accounting period.

The deductions of the expenses allowed for all expenses incurred for the purpose of acquiring profits or for the purpose of the business unless there is a specific direction in the revenue code to the contrary. Generally, how much the accountancy expenses arising in the course of business is how much being able to deduct from the income in calculating profits.

Computation of net profit[136]

In principle, the computation of net profits of a company for tax purposes is as follow:

(1)	Income from Sales or Business		XXXX
(2)	Deduct Cost or Direct Expense		XXXX
(3)	Gross Profit/Loss		XXXX
(4)	Add	Income Not Directly Related to Sales or Business	XXXX
(5)	Total		XXXX
(6)	Deduct Management Expenses		XXXX
(7)	Net Profit/Loss According to Financial Statement		XXXX
(8)	Add/Deduct	**Exempted Income/ Deemed Income** **Expense Not Allowed for Computation Under the Revenue Code**	XXXX

[136] Arthit Satthavorasit, *"Corporate Income Tax"*, Class material of master of Law Program in Business Laws, Faculty of law, Thammasat University (2014)

(9)	Apply Tax Rate	
(10)	Tax Payable	XXXX
(11)	Deduct Exempted Tax	XXXX
(12)	Deduct Tax Credit	XXXX
(13)	Deduct Withholding Tax	XXXX
(14)	Tax Payable/ Refundable	XXXX

4.2 Tax Incentive under Thai Revenue Code

The Revenue Code has provided tax incentives to companies or partnerships by allowing the state to issue a Royal Decree for certain purposes. A Royal Decree may be issued to reduce or exempt tax as fitted to the circumstances, the nature of business, or the local condition according to Section 3 of the code. For instance, some expenses can be deducted, for example, by an additional 50% or 100% more under the conditions prescribed by the Law.

Section 3: *For taxes collectible under this Revenue Code, a Royal Decree may be issued for the following purposes:*

(1) to reduce or exempt tax as fitted to the circumstances, the nature of business, or the local condition;

(2) to exempt tax to persons or international organizations under the commitment made between Thailand and United Nations, under International Laws, under Conventions, or under a Reciprocal Basis;

(3) to exempt tax to the government, a state enterprise, the Tessaban (municipal), the Sukapiban (municipal), a religious body or a public charitable organization;

the reduction or exemption described under (1), (2) and (3) may be amended or revoked by the issuance of a Royal Decree.

4.3 Tax Incentive for R&D Activities

At present, Thailand currently has R&D incentives to promote R&D and encourage private sector to invest more in R&D, including tax allowances and soft loans. There are two main channels for providing tax allowances for firms undertaking R&D by the Ministry of Finance (MOF): 1) through accelerated depreciation of machinery and equipment purchased for R&D purposes, and 2) by providing income tax exemption for the income of any companies or partnerships for the expenses paid out as R&D expenditures.

4.3.1 Exemption of Income Tax for R&D Expenditures

For encouraging the private sector to invest more in R&D, Section 3 of the Royal Decree provided exemption for corporate income tax of juristic companies and partnerships in an amount equal to 100% of the expenses incurred in the form of remuneration for research and development of technology paid to government or private agencies, as designated by Section 4 of Royal Decree No. 297 (1996).

Section 4 *Income tax shall be exempted under Division 3, Chapter 3, Title 2 of the Revenue Code to any companies or partnerships, for the income of any companies or partnerships amounting to 100% of the expenses paid out as R&D expenditures to private or public agencies as published in the Government Gazette.*

In 2015, however, the Thai Cabinet approved an increased tax incentive for expenses incurred for research and development of technology and innovation. Under this scheme, the incentive amount is the lower of the 300% tax deduction for eligible R&D expenditures, or the percent of gross revenue limitation as prescribed by Section 5 of Royal Decree No. 598 (2016).

Section 4 *Income tax shall be exempted under Division 3, Chapter 3, Title 2 of the Revenue Code to any companies or partnerships, for the income of any companies or partnerships amounting to 100% of the expenses incurred in the R&D of technology and innovation to private or public agencies as published in the Government Gazette.*

Section 5 *Income tax shall be also exempted under Division 3, Chapter 3, Title 2 of the Revenue Code to any companies or partnerships, for the income of any companies or partnerships amounting to 100% of the expenses incurred in the R&D of technology and innovation from 1 January 2015 to 31 December 2019. This is in addition to the tax exemption on Income Tax as prescribed under Section 4, however once combined, the amount of tax exemption must not exceed the portion of corporate income to be calculated in the Net Profit calculation under the same accounting period as follow:*

(1) 60 per cent for the income portion not exceeding 50 million Baht;

(2) 9 per cent for the income portion exceeding 50 million Baht but not exceeding 200 million Baht;

(3) 6 per cent for the income portion exceeding 200 million Baht.

The Royal Decree No. 598 is issued to replace the Royal Decree No. 297, where, previously, companies can deduct up to 2 times of the expenses incurred for research and development, equating to 100% of the expenses paid for the service of conducting research and development on technology paid to public or private organizations published in the Government Gazette. However, under the Royal Decree No. 598, the tax deduction amount is increased to three times the expenses incurred.

4.3.1.1 Evolution of Income Tax Exemption for R&D in Thailand

The Thai government began offering R&D tax incentives in 1996. On July 15, 1996, the MOF, through the Revenue Department, issued a tax measure to stimulate R&D spending and investment under Royal Decree No. 297. The Royal Decree provides a policy statement with the following rationale:

"It is appropriate to exempt corporate income tax for juristic partnership and companies at 100% of expense for fees paid for research and technology development to either public or private organizations in order to encourage the role of the private sector in promoting research and technology development. The Royal Decree is thus enacted."

The tax incentive is given in the form of corporate income tax exemptions at an amount equal to 100% of the expenses incurred in the form of research and technology development fees paid to registered R&D service providers, which can be either public or private entities.

On December, 16, 1996, the MOF issued the Notification on Income Tax (No.3) covering the following subjects: the characteristics of the public or private agencies employed to conduct technological research and development, a definition of the term "research and development", the characteristics of eligible agencies , and the terms and conditions to be qualified for corporate income tax exemption at an amount equal to 100% of the expenses incurred as fees for research and technology development paid to registered R&D service providers.

Since the Revenue Department often has to determine whether an activity is considered to be a R&D activity, and to determine what kind of expenses are considered to be related to R&D activities, the Cabinet passed a resolution on February 3, 1998 by assigning the Ministry of Science, Technology and Environment to assist the Revenue Department on those tasks. With the collaboration between the two offices, the Revenue Department then issued the Departmental Order No. 584/2542 on December 30, 1999, appointing The Committee for Certifying and Approving Expenses for Research and Development in The Private Sector.[137]

On February 5, 2001, the Revenue Department later issued Departmental Order No. Paw. 103/2544 Subject: Income Tax , Expenditures for Basic Industrial Research and Applied Research, assigning the NSTDA to examine and verify R&D projects eligible for the tax incentive, and to categorize the project as either basic industrial research or applied research. NSTDA then issued Resolution No. 072/2544, thereby appointing its own committee to approve R&D projects on February 28, 2001 in order

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[137] National Science and Technology Development Agency, *"R&D Project Approval for Income Tax exemption for expenses paid out as R&D expenditures"* (สำนักงานพัฒนาวิทยาศาสตร์และเทคโนโลยีแห่งชาติ, "การขอรับรองโครงการวิจัยและพัฒนาเทคโนโลยีเพื่อขอยกเว้นภาษีเงินได้นิติบุคคลสำหรับรายจ่ายที่ได้จ่ายไปเพื่อทำการวิจัยและพัฒนาเทคโนโลยี"), *See:* http://www.nstda.or.th/rdc/, accessed on May15, 2016)

to encourage the private sector to contribute to enhancing science and technology capabilities by taking advantage of the incentives provided.[138]

The Departmental Order[139] No. Paw. 103/2544 also provides revenue officers with a guideline for conducting investigations and giving advices on technological research and development, requiring juristic companies or partnerships employing registered R&D service providers to submit the details of the project to NSTDA either before or after engaging in the project in order to categorize the project as either basic industrial research or applied research. Once the project has been inspected and verified by NSTDA, the project will be treated as either basic industrial research or applied research accordingly.

On December 30, 2014, the Cabinet approved a proposal to issue an income tax exemption measure to support R&D activities made by the MOF.[140]

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[138] *Id.*

[139] **Supreme Court Decision No. 3691/2545** has a final decision that The Departmental Order are only used internally within the Revenue Department, and do not serve as a legal enforcement to the general public.

[140] The Ministry of Finance proposed that tax incentives as follows:

1. Increase the income tax exemption for the expenditure paid for research and technology development and innovation from 200% to 300%.
2. Expenditures for Research and Technology Development activities in Article 1 shall not exceed a ceiling rate set by the Ministry of finance and the Ministry of Science and Technology. In considering the ceiling for R&D costs, the conditions that should take into account is the differences on the average expenses of research and development and the average incomes of private investors, either small Middle, or large investors, therefore, the benefits that each will receive would be enough to encourage the investment in R&D activities.
3. The period for providing tax incentives is five years starting from January 1, 2015 until December 31, 2020. It should be yearly reviewed in order to assess the progress of the project for improving the research efficiency and continuity.
4. In qualifying and approval R&D project for tax exemption, it should be made by relating agencies, either state or private sectors for receiving an effective result according to the target. The agencies responsible for the approval should have an inspection function which is not complicated for the applicant.

The National Innovation Development Committee, established by the Office of the Prime Minister, based on its issued Order No. 36/2558, has adopted a resolution on tax measures to stimulate private sector investing in the research and development of technology and innovation. The ceiling for R&D costs was set up proportional to the average income of private investors, which can be divided into three levels based on gross revenue.[141]

On August 11, 2015, the Cabinet approved the draft of a Royal Decree issued under the Revenue Code on corporate income tax exemption measure on expenditures paid for the research and development of technology and innovation[142] as proposed by the MOF submitted to the Council of State for review together with a comment by MOST.[143]

On February 24 2016, the Royal Decree Issued under the Revenue Code regarding Exemption from Revenue Taxes (No. 598), B.E. 2559 was enacted to increase the rights and privileges of companies or juristic partnerships with respect to expenses incurred from activities involving R&D and innovation. The Royal Decree provides a policy statement with the following rationale:

"The reason for enforcing this Royal Decree is to support the government's policy for encouraging private sectors to invest more in the technology R&D and

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The Ministry of Finance shall draft the Decree issued under the Revenue Code provided exemption of corporate income tax to impose income tax exemption for the costs of research and technology development submitting Cabinet to consider as urgent.

[141] National Science and Technology Development Agency (NSTDA), Encouraging R&D work for Private Sector, (สำนักงานพัฒนาวิทยาศาสตร์และเทคโนโลยีแห่งชาติ, "งานกระตุ้นการวิจัยและพัฒนาภาคเอกชน"), *See:* http://www.nstda.or.th/rdc/, accessed on September 9, 2015

[142] The secretary of the cabinet, the draft Royal Decree issued under revenue code on corporate income tax exemption measure for the expenditures paid for research and development of technology and innovation (สำนักเลขาธิการคระรัฐมนตรี, ร่างพระราชกฤษฎีกาออกตามความในประมวลรัษฎากร ว่าด้วยการยกเว้นรัษฎากร: มาตรการยกเว้นภาษีเงินได้นิติบุคคลสำหรับค่าใช้จ่ายด้านการวิจัยและพัฒนาเทคโนโลยีและนวัตกรรม), *See:* http://www.cabinet.soc.go.th/soc/Program2-3.jsp?top_serl=99315063, accessed on September 9, 2015

[143] *Id.*

innovations. This will impact the country's overall economic development, and will increase the country's competitive capabilities. It is deemed appropriate to amend the criterion on income tax exemption for companies or partnerships where expenses on technology R&D have occurred as stipulated in the Royal Decree, issued in accordance with the Revenue Code on The Exemptions of Taxes (No. 297) B.E. 2539, in order to support and encourage the private sectors to invest more on technology R&D and innovations. Hence a sound rationale for enacting this Royal Decree."

Companies and Partnerships are now allowed to reclaim R&D expenses up to 3 times of the actual amount paid, with the first portion amounting to 100 per cent of actual R&D expenses incurred, and the second portion equating to 100 per cent of the actual R&D expenses incurred during January1, 2016 to December,31 2019. However, the total tax exemption allotted under this Royal Decree shall not exceed the amount of income counted in the calculation of net profit under the same accounting period as follow:

(1) 60 per cent for the income portion not exceeding 50 million Baht;

(2) 9 per cent for the income portion exceeding 50 million Baht but not exceeding 200 million Baht;

(3) 6 per cent for the income portion exceeding 200 million Baht.

On March 25, 2016, the MOF issued the Notification on Income Tax (No.391) covering the following subjects: establishing the Criteria and Processes for Income Tax Exemption under Innovation and Technology Research and Development Expenses, providing a definition of the term "Innovation, Research and Development," and establishing the Criteria and Processes for Income Tax Exemption under Innovation and Technology Research and Development Expenses.

On April 12, 2016, the Director-General of Revenue Department issued a Notification to establish the Criteria and Processes for the Application for Research and Development on Innovation and Technology, providing the characteristics of eligible agencies, and outlining the terms and conditions to be eligible for the 300% corporate

R&D tax incentive from incurred expenses in the form of fees paid to registered R&D service providers for research and technology development.

Table 4.1: Evolution of Laws concerning R&D Tax incentive in Thailand

Old	New
The Royal Decree No.297 (1996)	The Royal Decree No.598 (2016)
The Notification of MOF on Income Tax (No. 3) (1996)	The Notification of MOF on Income Tax (No. 391) subjects: establishing the Criteria and Processes for Income Tax Exemption under Innovation and Technology Research and Development Expenses (2016)
The Notification of Revenue Department. Subject: The Application for Research and Development on Innovation and Technology. (1996)	The Notification of Director-General of Revenue Department. Subject: Establishing the Criteria and Processes for the Application for Research and Development on Innovation and Technology (2016)
The Notification of MOF on Income Tax (No. 4) (1992)	Notification of Director-General of Revenue Department. Subject: List of the registered R&D service providers No.1 (2016)
Departmental Order No. Paw. 103/2544 (1991)	

4.3.1.2 Definition of Qualifying R&D

Tax incentives are given to R&D activities under Section 3 of Royal Decree No. 297. The R&D definition is stated as such in The Notifications of MOF No.3. Subject: the public or private agency employing technological research and development conducts is eligible for the exemption of corporate income tax for an amount equal to 100% of the expenses incurred in the form of fees paid for research and technology development services to registered R&D service providers. There are two types of R&D identified in clause 4: Basic Industrial Research and Applied Research.

The definition of R&D defined by The Notification of MOF No.3 for public or private service providers of research and technology development activities on December 16, 1996 are defined as follow:

i. **Basic Industrial Research** is defined as formal research or serious study directed with the intention for discovering new knowledge with the expectation that such knowledge will be useful and will enable the development of new products, processes, and services, or will substantially improve existing ones.
ii. **Applied Research** is defined as research that directs the results obtained from basic industrial research into a pattern, a blueprint or a design of new products, processes, or services, or changing or improving existing ones, whether for the purpose of sale or utilization, including the invention of a prototype that may not be ready for commercial use. This may include the conceptual formulation and design of products, processes or services, the primary illustration of pilot projects under the condition that such project cannot be applied to or used for industrial or commercial purposes. However, applied research does not include normal or periodical change on the products, manufacturing system processes, services, or other operations, even though it may result in development progress.

The meaning of R&D, according to the Notifications of MOF No.3, is adapted from the General Agreement on Tariffs and Trade Agreement on Subsidies and

Countervailing Measure.[144] Article 8 of the Agreement clearly distinguishes fundamental research from industrial research and pre-competitive development activity.[145] The definition of industrial research is applied to basic industrial research under The Royal Thai Government Gazette, while the definition of pre-competitive development activity in GATT is applied to applied research. The reasons for applying the same definition from GATT is to eliminate the problem of misinterpretation, and to make sure that R&D tax allowance policies are consistent with GATT obligations regarding subsidies.

After having considered the R&D definition, Thailand has opted to apply the definition of R&D from GATT. Thus, the definition of R&D as stated lacks clarity and is not easily understandable nor applicable for Thai industrial or commercial activities. The definition for 'basic research' should not only aim at discovering new knowledge, but should also aim at creating correct and useful understanding of existing knowledge. Furthermore, the definition of 'applied research' holds the condition that a R&D project should not be modified or applied for industrial or commercial purposes. If R&D

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[144] See *"Agreement on subsidies and countervailing Measure"*, part iv, article 8.2A in **GATT** (1994, p. 237).

[145] - By fundamental research is meant an activity designed to broaden scientific and technical knowledge not linked to industrial or commercial objectives.

- By industrial research is meant planned research of critical investigation aimed at the acquisition of new knowledge, the objective being that such knowledge may be useful in developing new products, processes or services or in bringing about a significant improvement in existing products, processes or services.

- By precompetitive development activity is meant the shaping of the results of industrial research into a plan, arrangement of design for new, altered or improved products, processes or services, whether they are intended to be sold or used, including the creation of an initial prototype which could not be used commercially. This may also include the conceptual formulation and design of other products, processes or services and initial demonstration projects or pilot projects, provided that such projects cannot be converted or used for industrial applications or commercial exploitation. It does not include the routine or periodic changes made to products, production lines, manufacturing processes, existing services and other operations in progress, even if such changes may represent improvements.

cannot be applied to business uses, there will be no reasons for the private sector to invest in R&D.

Furthermore, the definition of R&D as defined in GATT is defined too generally. Problems may arise if the definition for R&D is defined too broadly. Firstly, the definition does not provide clear guidelines for the applicants interested in R&D projects. Secondly, it could render the difficulty in promoting R&D when put into practice.

According to Principles of a Good Tax System[146], the lack of clarity and the generally broad definition of R&D comes into conflict with the principle of certainty, which is a key requirement for the proper implementation of a good tax system. For businesses, uncertainty in regulations is unacceptable for companies trying to plan their business activities, and certainty is key to confident decision making.[147] That means that in the best interest of taxpayers, it is best to ensure an accurate understanding on the definition of R&D as prescribed by the law, and that such definition is in accordance with the conditions for the implementation of R&D tax incentives. Different taxpayers reading the legislation should come to the same interpretation of the law, and there should not be room for any authorities to challenge the long-established practice on this basis upon which businesses are accustomed to on an obscure point of law.[148]

Under Royal Decree No. 598, The MOF recently issued The Notification on Income Tax No. 391, providing a new definition for R&D and innovation. Research and Development work on Innovation and Technology conducted by government sector or the public sector mentioned in 1) must possess the following characteristics:

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[146] Adam Smith's tax principles are the set of guidelines that should characterize good and effective national tax system. Adam Smith described those tax principles in his most famous book *"An Inquiry into the Nature and Causes of the Wealth of Nations"*.

[147] ACCA, *"Certainty in Tax"*, 3 (2014), *See:* http://www.accaglobal.com /con tent/dam/acca/global/PDF-technical/tax publications/ tech-tp-cit.pdf, accessed on September 9, 2015

[148] ACCA, *"The 12 tenets of tax"*, 6 (2011), *See:* http://www.accaglobal.com/content /dam/acca/global/pdf/tech-tp-ttt.pdf, accessed on September 9, 2015

a. The Research and Development work is creative by nature, and is conducted under systematic procedures with the goal of product development or development of new production process; the Research and Development work involved is innovative and is different from that of other activities, involving the application of science and technology to solve various problems. The different types of Research and Development work are as follow:

i. **Basic Research** – a theoretical study or research in a laboratory in search for new knowledge without the development of a product or service
ii. **Applied Research** – a study in search of new knowledge with the purpose or goal of applying the results obtained from the research into practice or to seek new alternatives to obtain the desired goal
iii. **Experimental Development Research** – a systematic study utilizing known knowledge and information to create new resources, tools, products, processes, systems, or services, or to develop and improve on existing processes; however, experimental development research does not include natural changes or changes that typically occur during the product life cycle, or the life cycle of concurring production process, service, or business procedure, even if such changes may result in development progress

b. Innovation involves applying scientific knowledge and technology to create new, innovative product or process, which can be classified into various types of innovation as such:

i. **Product Innovation** – applying to good use new product and service, or product and service that has been highly improved; this type of innovation includes any clearly visible changes and improvements on physical and technical properties, on compositions, materials used, including software that are user-friendly, easily applicable to various usage.
ii. **Process Innovation** – involves clearly improved production process or distribution process, including technical changes, changes in equipment or software used.

Since the Royal Decree No.598 was issued, the Notification of MOF on Income Tax (No. 391) by virtue of Section 4 of the Decree under the Revenue Code Regarding

the Tax Exemption (No. 598) has amended the previous definition provided by the Notification of MOF on Income Tax (No. 3). Some of the problems pointed out above have since been resolved; the Notification provides a clearer and more comprehensive definition of R&D. The definition for 'basic research' remains almost the same as the existing definition (Notification of MOF No. 3). A new definition has been given to 'applied research' in which the research is divided into two types: applied research and experimental development. Furthermore, the condition stating that "R&D project cannot be modified or applied for industrial or commercial purposes" has been removed. However, there are still some issues that have not yet been resolved. Although the definition has become clearer and more understandable, it is too general and does not provide the details of what characteristics are to be included or excluded in R&D, and hence, lacking a clear guideline for applicants on what type of activities would qualify for the proposed R&D tax incentives.

The new Notification has also added the term of 'Innovation' to be eligible for the tax incentive proposed. This is to encourage private sectors to invest and create new innovation in order to develop the Thailand's capabilities to compete within the current global market trends, which are largely driven by technology and innovation. In the current global economic environment, all countries are faced with a rapid change in competitive landscape. As such, Thailand must quickly adapt from an efficiency-driven economy into an innovation-driven economy. The private sector plays an important role in applying scientific knowledge, technology, and innovation to improve efficiency and productivity, as well as a crucial role in innovative product and production processes. This is key to the country's economic growth, where the contribution by the private sector on this part will align with the country strategic goal for expanding the country's capability to compete in the global market and escaping the middle-income trap, where ultimately, the goal for increasing GERD to 1% of GDP may also be achieved

4.3.1.3 Form of R&D Tax Incentive

Apart from the deduction of R&D expenses as actual expenses paid for R&D, the amount equal to the expenditures paid for R&D are allowed to be deducted again before calculating corporate income tax. Under this policy, if you spend 100 baht, you

can claim up to 200 baht, which is called ‘double deduction’. In fact, from a legal point of view, the tax incentive is given in the form of corporate income tax exemption for an income equal to 100% of expenses incurred in the form of fees paid to registered R&D service providers for research and technology development services. This means that the government is offering to exempt an income amount equal to the amount spent on R&D. Thus, technically, this is not ‘double deduction’, but rather income exemption.

i. An Example of Tax Calculation

Table 4.2: Comparing Tax Calculations under Normal Circumstances versus the Benefit of Exemption

Tax calculation	**Normal**	**Benefit of exemption**
Gross Income	10,000,000 Baht	10,000,000 Baht
Deduct Expenses		
- Cost of goods sold	3,000,000 Baht	3,000,000 Baht
- R&D	1,000,000 Baht	1,000,000 Baht
Net Profit (Accounting Profit)	6,000,000 Baht	6,000,000 Baht
Exempt income		
equal to R&D Expenditures	-	1,000,000 Baht
Net Taxable Profit	6,000,000 Baht	5,000,000 Baht
Total Tax paid (20%)	1,200,000 Baht	1,000,000 Baht

According to The 4.2, a total of 1,000,000 baht is exempted from the Gross Income equating to the amount of incurred R&D expenditure, resulting in tax discount for the taxpayer at the value of 200,000 baht. This means that the government is lifting the burden of the taxpayer on expenses paid for research and technology development in the form of tax benefit amounting to 200,000 baht for the 1,000,000 baht paid for R&D. In other word, the taxpayer has received a corporate tax exemption of 200,000 baht.

The exemption of income tax at an amount equal to 100% of the expenses incurred in the form of fees paid for research and technology development scheme was enacted when the corporate income tax rate is 30%. By allowing a 100% exemption at the tax rate of 30%, the company would be subsidized by 30%. Since Thailand has changed the corporate income tax rate from 30% to 20% in the recent year, the amount of subsidy by the government is now actually only 20%. Therefore, the amount of R&D expenditures to be exempted should be amended to a 150% tax deductible; in order words, for every 100 baht paid, 150 should be tax-exempted to achieve the same amount of 30% subsidy. Considering the amount in which the company will be reimbursed for R&D expenditures, the exemption may reach up to 200%. In the past, the 200% allowance was in fact equivalent to a 60% tax credit. Due to changing tax rates, it is now reduced to 40%. In order to maintain the 60% tax credit, a 300% allowance should be taken into consideration.

In 2016, Thailand has issued the Royal Decree No.598, increasing the tax incentive for R&D expenditures in 2016 to 300% corporate tax exemption. Under the Royal Decree No. 598, in addition to the 100% tax exemption outlined above, corporate entities are also entitled to an additional 100% corporate tax deduction (equating to 300% corporate tax deduction) for a period of 5 years from January 1, 2015 to December 31, 2019. This 300% corporate tax deduction incentive is, however, capped by the following amounts of Gross Income for each of the 5-years incentive[149] as follow:

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[149] Section 5 of Royal Decree No. 598

Amount of Gross Income	Capped Amount
For gross income not exceeding 50 million baht	60% of the gross income amount
For gross income not exceeding 50 million baht but not exceeding 200 million baht	9% of the gross income amount
For gross income exceeding 200 million baht	6% of the gross income amount

For example, in an accounting period starting January 1, 2016[150], if Company A, Company B and Company C, each has a revenue of 500 Million Baht, and are paying for R&D as follow:

Company A has paid 30 million baht for R&D expenses.

Company B has paid 50 million baht for R&D expenses.

Company C has paid 80 million baht for R&D expenses.

Each company is entitled to a deduction of expenses as follow:

Income	**Level of Income**	**Percentage of income (Royal Decree No.598)**	**Base calculation in R&D**
1-50,000,000	50,0000	60%	30 Million
50,000,000 – 200,000,000	150,000,000	9%	13.5 Million
Up to 200,000,000	300,000,000	6%	18 Million
Total			61.5 Million

[150] Dharmniti, *"R&D Expense for Triple Tax Deductibl"*, *See:* https://www.dlo.co.th/node/895, accessed on May 15, 2016

1. Company A

Company A is entitled to deduct the expenses it paid for R&D in an actual amount of 30 million baht for the first portion, and another 30 million baht for the second portion. Furthermore, Company A is entitled for further deduction on the third amount paid; however, the combination of second and third amounts must not exceed 61.5 million baht. Hence, according to the calculation table, even though Company A is fully entitled to the right for deducting the third expense amount, which amount to 31.5 million baht, but due to the fact that Company A has only paid 30 million baht, Company A can only deduct 30 Million Baht for the third deduction amount.

Hence, the total expenses that Company A can deduct, thus, equals 90 Million Baht.

2. Company B

Company B is entitled to deduct the expenses it paid for R&D in an actual amount of 50 million baht, and deducting another 50 million baht for the second portion. Furthermore, the Company is entitled to deduct the third amount paid; however, the combination of second and third amounts must not exceed 61.5 million baht. Company B can only deduct 11.5 Million Baht for the third deduction amount.

Hence, the total expenses that Company B is entitled to deduct equals to 111.5 Million Baht.

3. Company C

Company C is entitled to deduct the expenses it paid for R&D in an actual amount of 80 million baht, and deducting another 80 million baht for the second portion. However, the company cannot deduct expenses for the third deduction amount because the combination of second and third amounts exceeds 61.5 million baht.

Hence, the total expenses that Company C is entitled to deduct equals to 160 million baht.

Although the tax measure for supporting R&D activities according to the Royal Decree No. 598 allows for an additional deduction of up to 3 times the amount, but a ceiling is imposed on the actual amount of tax deduction capped for different levels of income, defined by the business size as such: businesses with income not exceeding 50 million baht is entitled to a deduction of not more than 60% of income, businesses with income exceeding 50 million baht but not exceeding 200 million baht is entitled to an additional deduction of 9% for that portion of income exceeding 50 million baht, businesses with income exceeding 200 million baht is entitled to an additional deduction of 6% for that portion of income exceeding 200 million baht. The MOST has conducted a study and has concluded that such model of Income Tax Levels will be beneficial to all levels of businesses from large enterprises to small and medium enterprises or SMEs. The Ministry has also noted that the 300% tax exemption measure does not provide a sustainable solution, but is sufficient to provide substantial benefit while further evaluation is made on the 5-years incentive scheme. If the government's goal for supporting private investment is achieved, an assessment may be made as to whether or not the scheme will be extended for future benefits.

ii. R&D Volume or Increment

As a tax allowance is given equal to the amount of fees paid for R&D services to registered R&D service providers, regardless of how much it was paid for in the previous year, the Thai tax incentive is considered based on R&D volume, not increments, as outlined below:

(1) The first portion equals to the actual expenses of the business according to current accounting standards

(2) The second portion can be an additional deduction equating to 100% of the expenses incurred in that same accounting period

(3) The third portion can be an additional deduction equating to an additional100% of the expenses incurred in that same accounting period, if the expenses are incurred during the period between January 1, 2015 to December 31, 2019. However, when combined with the second portion from (2), the total amount of R&D

expenses deducted from (2) and (3) must not exceed the portion of income to be incorporated into the Net Profit Calculations conducted for that same accounting period.

iii. Targeted Incentives

The incentive is offered to all corporate income taxpayers. This means that all private firms, either owned or controlled by Thais or foreigners, are entitled to receiving the incentive, as all juristic partnerships or companies subjected to corporate income tax are eligible to claim the allowance, they (businesses, or private firms) are the main target group of this policy.

iv. The Result of Implementing Tax Scheme in The Form of Exemption of Income Tax

In addition to the deduction of R&D expenses in the general provision prescribed in Section 65, Section 65 Bis and Section 65 Ter of the Revenue Code, the company and partnership conducting R&D activities will also receive a tax allowance for those expenses. In Thailand, R&D tax allowance is given in the form of corporate income tax exemption in an amount equal to 100% of the expenditures incurred for R&D activities. This means that the exempted amount equal to 100% of R&D expenses will be deducted from the income of the company and partnership. Thus, the remaining income together with the actual R&D expenses incurred will be accounted for in the calculation of net profit.

In the case of a loss-making situation, losses can be carried forward up to five accounting periods under the general provisions of the Revenue Code. As a result, loss-making firms will also enjoy the benefits. However, if the R&D expenditures are spent at an amount exceeding the net income received in the same year, does this mean that the exempted amount of R&D expenses can be deducted at an amount exceeding the gross income?

There are no official regulations to deal with such cases where the exempted amount of R&D expenses exceeds the gross income. However, compared to the Thai tax incentive for first home owners enacted by Royal Decree No. 528, where the tax

relief provides an exemption of personal income tax for an individual taxpayer purchasing a house with land, or a condominium unit of value not exceeding 5 million baht for residential purposes, the exemption is given in an amount equal to the income tax calculation of net income at a maximum of up to 10% of the property value. The tax exemption must be claimed within 5 years counting from the date of ownership transfer (at a maximum of 100,000 baht per year). If the income tax calculated from the net income is less than the tax exemption calculated from the cost of residential properties per year, the buyer shall be entitled to a tax exemption at an amount not exceeding the income tax payable according to the Notification of the Director-General of the Revenue Department on Income Tax (No. 213).

For corporate income tax, the Revenue Department has set up guidelines on how to fill the Corporate Income Tax Return Form (PND 50) for the accounting period beginning on, or after, January 1, 2557 B.E. The guidelines on Item No.10 relating to revenues that are granted income tax exemption, or expenses that are deductible at a greater amount, which include expenses for R&D. A note is also provided at the end of item No.10 that in case of businesses with no income, they are not allowed to fill in item No.10 for income tax exemption, or tax deductions on any additional expenses.[151]

As mentioned above, a company or partnership with no income from its business are not entitled to any benefits from the R&D tax incentive, which also include businesses with income lower than the amount of R&D expenses.

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[151] The guidelines on How to fill the corporate income tax return Form (PND 50) for the accounting period beginning on or after January 1, 2557, (2014, p.13) (วิธีการกรอกแบบแสดงรายการภาษีเงินได้บริษัทและห้างหุ้นส่วนนิติบุคคล (ภงด.50) สำหรับรอบระยะเวลาบัญชีที่เริ่มในหรือหลังวันที่1 มกราคม พ.ศ. 2557, หน้า 13)

Table 4.3: Comparing the amount of loss carried forward between applying the exempt-income method and the double deduction method.

Method	Exemption of Income Tax	Double Deduction
Gross Income	1,000,000 Baht	1,000,000 Baht
Exempt Income Equals to R&D Expenditures (2,000,000 Baht)	~~2,000,000 Baht~~ = 1,000,000 Baht	-
Income after subtracting exemptions	0	1,000,000 Baht
Expenses - Cost of goods sold - R&D	 500,000 Baht 2,000,000 Baht	 500,000 Baht 2,000,000 Baht
Net Profit/Loss (Accounting Profit/Loss)	2,500,000 Baht	1,500,000 Baht
Deduct additional deduction of the R&D expenses	-	2,000,000 Baht
Net Taxable profit / Loss Carry Forward	**2,500,000 Baht**	**3,500,000 Baht**

As shown in the table above, with the exempt-income method, the income derived by the company from its business amounts to only 1 million baht. Even though there are a 2 million baht in R&D expenditures in that particular year, the company can only claim an additional expenditure of 1 million baht, so as not to exceed the income derived in that year. Thus, the total loss that can be carried forward and deduct against incomes realized in next year is lower than using the method of double deduction on R&D expenses.

4.3.1.4 Qualifying Expenses for R&D[152]

Since the Royal Decree No. 297 (now edited to Royal Decree No.598) was issued allowing an additional 100% deduction of expenses paid in the form of fees to registered R&D service providers, no details are provided on what kind of expenses are eligible, causing a lack of clarity on when, and how the R&D expenses can be deducted.

However, NSTDA has set the regulation on expenses for R&D projects as such: R&D expenditures must be accounted for in businesses involving R&D activities, or registered as a R&D service provider, and must be identified in the application for certification of R&D projects (Clause 1.9). As such, in the light of the projects that has been completed by the time the application for project approval has been submitted, the details of actual expenses incurred must also be provided.

As for the service fees paid for R&D service providers that must be charged back to the project owner during the course of the project, the fee must be recorded according to actual expenses incurred meeting with the actual project goal set forth by

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[152] National Science and Technology Development Agency (NSTDA), "Seminar Material on 6 September 2556: Application for R&D Project Approval for 200% Tax Exemption", **Encouraging R&D work for Private Sector**; (สำนักงานพัฒนาวิทยาศาสตร์และเทคโนโลยีแห่งชาติ (สวทช), *"เอกสารประกอบการสัมมนาวันที่ 6 กันยายน 2556 เรื่อง การยื่นขอการรับรองโครงการวิจัยและพัฒนาเทคโนโลยีเพื่อขอยกเว้นภาษี 200%"*, **งานกระตุ้นการวิจัยและพัฒนาภาคเอกชน**)

the project owner only. The regulation categorizes expenses into 8 categories[153] prescribed in Clause 3 of the application form as follow:

(1) Salary / Wages of personnel means a direct compensation in the form of money to R&D service provider staffs. The base amount shall be in accordance with the standard salary/wages of such R&D service provider and the number of hours of personnel participating in each project must be specified according to their work.

(2) Consultant / Expert means a monetary compensation provided to outsourced R&D personnel for working on the project. The amount of the fee will be agreed upon with the consultant/expert.

(3) Equipment / Tools means the use of equipment, machinery, tools and other property, such as software (license fees including the Premium Support (function increments) of software) for the experiments/tests related to R&D. The base amount will be based only on the number of hours used in the project.

(4) Improvement / repair / maintenance means the cost to modify / repair / maintenance / calibrating values for equipment/tools in (3) and the cost from engineering work such as modifying equipment / machinery / tools used in the experiment / test. The cost shall be made in proportion of usage.

(5) Laboratory Service means the costs for the testing/specimen which are not included in the equipment / machinery / tools under Section 3.3. The amount allowed is based on testing fee per unit.

(6) Research Materials mean the cost of chemical, material / supplies or living things used in R&D which are not included in the laboratory service under clause (5). The amount of materials is based on the total price and must be specified clearly and consistent with the present workload.

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[153] National Science and Technology Development Agency (NSTDA), *"Work Manual No. G-TMC-RDP-02 : The Criteria and Processes for Approving Research and Development Project"*, **Encouraging R&D work for Private Sector** ("*สำนักงานพัฒนาวิทยาศาสตร์และเทคโนโลยีแห่งชาติ (สวทช), แนวทางการทำงาน G-TMC-RDP-02: เรื่องหลักเกณฑ์และแนวปฏิบัติการพิจารณารับรองโครงการวิจัยและพัฒนาเทคโนโลยี*", **งานกระตุ้นการวิจัยและพัฒนาภาคเอกชน**)

(7) Operating Expenses mean the costs for supporting the project operation and costs for project feasibility study which may include

i. Public Utilities (water, electricity, phone, internet).

ii. Report preparing, Copying

iii. Fees for office equipment related to the project in proportion to their usage. The principles of calculating the cost is in accordance with Section 3.3.

iv. Traveling and Accommodations related to the project operation such as project planning, meetings and training that is necessary and is related to the R&D project.

v. Customs Clearance Fee

vi. Costs for applying Intellectual Property Protection. (Does not include the annual fee for renewal of protection).

vii. Per Diem Allowances to researchers and consultants as a result of the operation in the project.

viii. Costs of Technical Feasibility Study

ix. Costs for Providing R&D Information such as patent search, journal member fees, R&D Database.

x. Salary / wages of personnel at administrative level who are not directly responsible for the project, and support staffs.

xi. Accounting service fees, Audit fees, IT service costs.

xii. Costs of products, processes or services Certification (must not be used for commercial purposes.)

xiii. Other indirect expenses

* Operating Expenses shall not exceed 30% of the total expenses of the project before including the operation expenses.

(8) Other direct Expenses mean other costs related to R&D and cannot be identified in each expense category (1) – (6) above, but are direct capital of R&D project which may include

i. Professional Services

ii. Compensation for outside personnel participating in the R&D process.

iii. Costs derived from the disposal of hazardous waste

iv. Rental fee of laboratory for testing.

v. Licensing fee for the further development, improvement of machinery or Commissioning or Production Test in the duration of the operation.

4.3.1.5 Conditions for Income Tax Exemption

According to the government's policy to promote the private sector to invest in research and technology development, the Royal Decree No. 297 (1996) has provided Thailand corporate entities with a 200% corporate tax deduction for expenses paid out for hiring an authorized R&D organization to undertake Research & Development activities for business entities. However, The Current Royal Decree No. 598 extends the 200% corporate tax deduction for R&D expenses under Royal Decree No. 297 to also include Innovation expenses paid out for hiring an authorized R&D organization to undertake Innovation activities for the entity.[154]

The criteria are as follows:

1. Corporation/Project owner must be a company or juristic partnership under Section 39 of Revenue Code and the expense paid for the research and development of technology and innovation cannot be used in business granted income tax exemption under BOI, in whole or in part.[155]
2. Exemption of Income Tax are only granted for Research & Development and Innovation expenses paid out to a public or private organization that has received authorization from the MOF to undertake Research & Development and Innovation activities for business entities,[156] and must submit an application for the project involving research and development on innovation and technology to the NSTDA, or any other organizations determined by the Minister.[157]

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[154] Sherrings, *"Thailand R&D Corporate Income Tax Deduction Concession", See:* https://sherrings.com/research-and-development-tax-deductions-thailand.html accessed on May 15, 2016

[155] Section 6 of Royal Decree No. 598 on Income Tax Exemption

[156] Section 4 of Royal Decree No. 598

[157] Section 3 of the Notification of Ministry of finance No391

3. R&D service providers must be in a list approved by The Revenue Department as a registered service provider for research and technology development.

To be a registered R&D service provider, the R&D service provider carrying out R&D services for Corporation/Project owners must be either a public private organization with the characteristics prescribed in the Notification of MOF No.3. (Now as prescribed by the Notification of Director-General of Revenue Department. Subject: Establishing the Criteria and Processes for the Application for Research and Development on Innovation and Technology)

(a) A Ministry or government departments in general, or a state-owned enterprise by the Law on the Establishment of State-Owned Enterprise, including business organizations owned by the government which is not a juristic person.

(b) Individual, Ordinary Partnerships, Non-Juristic Body of Persons, Other Juristic Person or Company or Juristic Partnership according to Section 39 of Revenue Code.

The public or private organization who wishes to conduct a research and development tasks on innovation and technology by Section 4 of the Decree No.598 issued in 2016 under the Revenue Code regarding Tax Exemption must submit an application for research and development on innovation and technology to the Director-General of Revenue Department with reference to the Application Form for Research and Development on Innovation and Technology as outlined by the Notification by submitting the form to the Large Business Tax Administration Office (LTO), the Revenue Department, or to the local Revenue Department Office closest to the respective office location the public or private organization in consideration.

The applicants must present the complete list with attached documents as follow:

i. A copy of the Organization Registration Letter and Objective in the case of a public organization, with the exemption of those being a ministry or government departments in general

ii. A copy of the Registration Letter for the companies or partnerships, Memorandum and Articles of Associations (in the case of a legal entity)

iii. A copy of the House Registration Letter, National Identity Card (in the case of an individual)

iv. The list of names of the researchers involved, with an education background of no less than a Bachelor Degree in the applicable field of study to the research and development task conducted on innovation and technology, including a full-detailed resume, and a copy of the certification of educational background (separating full-time researchers and contract researchers)

v. A copy of the Value-Added Tax Registration Letter (if applicable)

vi. A copy of the Application for Value-Added Tax Registration Letter (if applicable)

vii. A copy of the Report on the Changes to Value-Added Tax Registration Letter (if applicable)

viii. A receipt letter which at least contains the message under Section 105 bis of the Revenue Code with the message “Is responsible for conducting the research no. .... by the Director-General”, and the message “The type of research is....”

ix. Details on the equipment and tools used in the research and development of innovation and technology (if applicable)

x. A short summary of the business conduct at present

xi. A project plan for the conduct of the research and development on innovation and technology

The public or private organization approved to conduct the research and development on innovation and technology will have the right to conduct the research and development task on innovation and technology from hence an officer of the Revenue Department has accepted the Application for Research and Development on Innovation and Technology.

In the case of a public organization in 3(a) approved to conduct research and development on innovation and technology, it should be clearly stated in the memorandum and agreement that the project is a research and development on innovation and technology as stated in the Notification by the MOF on Income Tax (no. 391) Re: Establishing the Criteria and Processes for Income Tax Exemption under Innovation and Technology Research and Development Expenses issued on March 25, 2016.

In the case where the person(s) approved to conduct the research and development on innovation and technology in 3(b) is a company or partnership paying tax on Income Tax charged on the actual net profits of the business involving research and development tasks on innovation and technology in addition to other business activities, the company or partnership must calculate the actual net loss and profit separately for each activity, but in calculating the net profit for Corporate Income Tax, the net loss and profit of both activities should be combined.

The public or private sector approved by the Director-General of Revenue Department to conduct research and development task on innovation and technology for any person(s) must issue a Receipt Letter under Section 105 bis of the Revenue Code as follow:

a. In the case where the research and development on innovation and technology is conducted in service of another person, a Receipt Letter should be issued under the name of the organization approved by the Director-General of Revenue Department, with a separate receipt from that of other activities
b. In the case where the research and development on innovation and technology is conducted for own use, a Receipt Letter should be issued to self as if conducting the service for another person(s) as in a. without issuing a Tax Invoice

The public or private organization shall apply for the status of a registered R&D service providers to The Revenue Department, as published in The Royal Thai Government Gazette prescribed in Notifications of MOF No.4 (Now prescribed in

Notification of Director-General of Revenue Department. Subject: List of the registered R&D service providers No.1).

The application to conduct research and development on technology that has been submitted under the Notification of the Revenue Department on the Application of Research and Development on Technology for Public or Private Sector Conducting Research and Development Service, issued on September 5, 2002, which has been amended by the Notification of the Revenue Department on the Application of Research and Development on Technology for Public or Private Sector conducting Research and Development Service, issued on December 25, 2002, and is still in consideration, can be considered mutadis mutandis as an Application of Research and Development on Innovation and Technology. If in any case, the documents submission is incomplete as per this Notification, the officer of the Revenue Department in charge can issue a request to the public or private sector to submit additional documents as needed.

4. Types of R&D conducted by the registered R&D service provider must be either Basic Industrial Research or Applied Research as defined in Section 4 of the Notifications of MOF No.3. (Now must be either the research and development work or the innovation as defined in Section 2 of Notification of MOF No. 391). In the case where the R&D service provide is a public organization according to 3(a), the R&D service provider must specify the type of R&D undertaken in both the contract and the receipt.[158]

Companies or partnerships that wish to exercise the right to Income Tax Exemption under the Decree issued in 2016 under the Revenue Code regarding Tax Exemption (No. 598) must submit an application for the project involving the research and development on innovation and technology to the NSTDA, or any other organizations determined by the Minister to approve that the project submitted is either

[158] Section 5 the Notifications of Ministry of Finance No.3. (Now Section 6 Notification of Director-General of Revenue Department. Subject: Establishing the Criteria and Processes for the Application for Research and Development on Innovation and Technology)

a basic research, an applied research, an experimental development research, a product innovation, or a process innovation. Only when the project is approved can the project be considered a Research and Development on Innovation and Technology Project which is either a basic research, an applied research, an experimental development research, a product innovation, or a process innovation.

Companies or partnerships can apply for tax exemption on Income Tax or Corporate Tax for any expenses incurred on the research and development work on innovation and technology without the approval only by these conditions:

i. The value for the research and development project does not exceed 3 million baht
ii. The companies or partnerships has conducted past research and development projects on innovation and technology approved by NSTDA before
iii. The processes of the research and development on innovation and technology conducted by the companies or partnerships has been evaluated and approved the NSTDA or any other organizations determined by the Minister
iv. The companies or partnerships has submitted an expense form for the purpose of research and development on innovation and technology, and other documents with the details of the expenses incurred for the research and development on innovation and technology, with all required details as outlined by this Notification together with the Corporate Income Tax filing
v. The companies or partnerships has provided a full report with the details of the research and development on innovation and technology, including a memoir of the research procedures, the result, and the research paper for future reference (if applicable).

5. The registered R&D service provider must conduct the R&D activities in Thailand.[159]

[159] Section 3 para 2 the Notifications of Ministry of Finance No.3. (Now Section 2 para 2 Notification of Director-General of Revenue Department. Subject: Establishing the

4.3.1.6 Beneficiary

For Corporation / Project owner hiring R&D service providers for R&D activities (A company or partnership that pays the expenses for R&D activities), a double deduction is granted for expenses incurred on R&D paid to public or private organization who is registered as a R&D service provider (Notification of MOF No.3).

On the other hand, R&D service providers (academic and specialized research institutions that have been approved by the Revenue Department) may receive no direct tax benefit from this measure but business. However machinery and equipment for R&D may initially be depreciated at 40% of cost with the remaining balance being depreciated not exceeding 20% per annum (Royal Decree No. 145, No. 319).

4.3.1.7 Comparison between the Royal Decree No.297 and No.598

Table 4.4: Comparison between the Royal Decree No.297 and No.598

ฉ	**Royal Decree No.297**	**Royal Decree No. 598**
Tax Incentive	**Section 4** Income tax shall be exempted under Division 3, Chapter 3, Title 2 of the Revenue Code to any companies or partnerships, for the income the income of any companies or partnerships amount to 100% of the expenses paid out as R&D expenditures to private or public agencies as published in the Government Gazette.	**Section 4** Income tax shall be exempted under Division 3, Chapter 3, Title 2 of the Revenue Code to any companies or partnerships, for the income the income of any companies or partnerships amount to 100% of the expenses incurred in the R&D of technology and innovation to private or public agencies as published in the Gazette.

Criteria and Processes for the Application for Research and Development on Innovation and Technology)

		Section 5 Income tax shall be also exempted under Division 3, Chapter 3, Title 2 of the Revenue Code to any companies or partnerships, for the income the income of any companies or partnerships amount to 100% of the expenses incurred in the R&D of technology and innovation from 1 January 2015 to 31 December 2019. however once combined, the amount of tax exemption must not exceed the portion of corporate income to be calculated in the Net Profit calculation under the same accounting period as follow: (1) 60 per cent for the income portion not exceeding 50 million Baht; (2) 9 per cent for the income portion exceeding 50 million Baht but not exceeding 200 million Baht; (3) 6 per cent for the income portion exceeding 200 million Baht.
Definition	**i. Basic Industrial Research** is defined as formal research or seriously study directed with an intention for discovering new knowledge and with an expectation that such knowledge will be useful and enable development of new products, processes, and services or substantially improve the existing one. **ii. Applied Research** is defined as research which directs the results of basic industrial	**The Research and Development work** is creative by nature, conducted under systematic procedures, with the goal of product development or development of new production process; the research and development work involved is innovative and is different from that of other activities, involving the application of science and technology to solve various problems. The different types of

	research to be pattern, blueprint or design for a new product, process or service or changing or improving thereof, whether for sale or use, including the invention of the first prototype which cannot be used commercially. This may be included the conceptual formulation and design of other products process or services and primary illustration or pilot projects with the condition that such project cannot be adjusted or used for industrial or commercial purposes. However, applied research does not include normal or periodical change of the products, manufacturing systems ,processes services or other operating work, even though this change result in the progress.	research and development work are as follow: i. **Basic Research** – a theoretical study or research in a laboratory in search for new knowledge without the development of a product or service ii. **Applied Research** – a study in search of new knowledge with the purpose or goal of applying the results obtained from the research into practice or to seek new alternatives to obtain the desired goal iii. **Experimental Development Research** – a systematic study utilizing known knowledge and information to create new resources, tools, products, processes, systems, or services, or to develop and improve on existing processes; however, experimental development research does not include natural changes or changes that typically occur during the product life cycle, or the life cycle of concurring production process, service, or business procedure, even if such changes may result in development progress The innovation involves applying scientific knowledge and technology to create new, innovative product or process, which can be classified into various types of innovation as such: i. **Product Innovation** – applying to good use new

		product and service, or product and service that has been highly improved; this type of innovation includes any clearly visible changes and improvements on physical and technical properties, on compositions, materials used, including software that are user-friendly, easily applicable to various usage. ii. **Process Innovation** – involves clearly improved production process or distribution process, including technical changes, changes in equipment or software used.
Beneficiary	In the case of a company or partnership that pays the expenses for R&D activities, a double deduction is granted for expenses incurred on R&D paid to public or private sector who are registered R&D service providers. While R&D service providers receive no direct tax benefits from this measure, they may benefit via gaining business.	In the case of a company or partnership that pays the expenses for R&D activities, a double deduction is granted for expenses incurred on R&D paid to public or private sector who are registered R&D service providers. While R&D service providers receive no direct tax benefits from this measure, they may benefit via gaining business.
Form and Volume	Tax incentive is given in the form of corporate income tax exemption in an amount equal to 100% of the expenses incurred in the form of fees paid for research and technology development services to registered R&D service providers.	Tax incentive is given in the form of corporate income tax exemption in an amount equal to 100% of the expenses incurred in the form of fees paid for research and technology development services to registered R&D service providers.

		In addition to the 100% tax exemption, corporate entities are entitled to an additional 100% corporate tax deduction. However, the total amount of tax exemption is capped at the limits calculated based on gross revenue.
R&D service providers	R&D service providers must be in the list approved by The Revenue Department as a registered service provider for research and technology development. To be a registered R&D service provider, the R&D service provider must be: 1. A Ministry or government department in general, or a state-owned enterprise by the Law on the Establishment of State-Owned Enterprise, including business organizations owned by the government which is not a juristic person. 2. Individual, Ordinary Partnerships, Non-Juristic Body of Persons, Other Juristic Person or Company or Juristic Partnership according to Section 39 of the Revenue Code. *Restricted to only those who conduct research and technology development tasks in Thailand.	R&D service providers must be in the list approved by The Revenue Department as a registered service provider for research and technology development. To be a registered R&D service provider, the R&D service provider must be: 1. A Ministry or government department in general, or a state-owned enterprise by the Law on the Establishment of State-Owned Enterprise, including business organizations owned by the government which is not a juristic person. 2. Individual, Ordinary Partnerships, , Non-Juristic Body of Persons, Other Juristic Person or Company or Juristic Partnership according to Section 39 of the Revenue Code. *Restricted to only those who conduct research and development tasks on innovation and technology in Thailand.
Benefit Period	There is no specified time period.	The Triple deduction is granted for a period of 5 years from 1 January 2015 to 31 December 2019.

4.3.1.8 Recent Developments on R&D Tax Incentive in Thailand

As the analysis on this issue has been provided while the Decree No. 598 has not yet been enforced, in Chapter 5, some issues are addressed, together with recommendations on how to resolve such issues, concerning both the definitions proposed and the details of the tax incentives. From since the Decree No. 598 has been enforced, it can be seen that some of the issues pointed out in Chapter 5 have already been resolved; however, there are still some issues that have not yet been addressed. Moreover, new issues have arisen, which are shown in The Table below, where further studies will need to be conducted.

Table 4.5: Analyzing the issues found in the R&D Tax Incentive Scheme after the Royal Decree 598 has been enacted.

	Issues which have been solved	**Remaining Issues**	**New Issues under Royal Decree No.598**
Definition	The definitions of has been extended for more clarity and to be more comprehensive. In the case of 'basic research', the definition is similar to that stated in the previous Notification of MOF No.3, whereas for 'applied research', a new definition is given to differentiate between 'applied research' and 'experimental development research', where the condition of 'an R&D	Although the definition is clearer and more comprehensive, but it is still a broad definition that does not specify the details of what criteria may be included or excluded from the definition of R&D, thus lacking a clear guideline for applicants as to what types of R&D activities may benefit from the tax incentives.	The Notification of MOF No. 391 added the definition of "innovation", to be an activity where scientific knowledge and technology are applied to create new, innovative product or process, which can be classified into various types of innovation. Additionally, activities involving 'Innovation' will also qualify for the benefits of Tax Incentives, categorized as either 'Product Innovation' or 'Process Innovation'.

	project may not be applied to industrial or commercial purposes' has been eliminated.		
Tax Incentive	The Royal Decree No. 598 has increased the benefits of entities investing in R&D from the previous Double Deduction on Income Tax to a Triple Deduction of Income Tax on 100% of expenses paid for R&D on technology and innovation.	In the case where the company has paid an expense on R&D more than their annual income for the same accounting period, the company cannot be compensated for that portion of expenses exceeding the annual income for that year.	The 300% Tax Incentive Measure in support of R&D has specified a capped limit for the maximum amount that can be deducted, separated into different income levels, dividing the companies by the size of business from small to large as such: businesses with income not exceeding 50 million baht is entitled to a deduction of not more than 60% of income, businesses with income exceeding 50 million baht but not exceeding 200 million baht is entitled to an additional deduction of 9% for that portion of income exceeding 50 million baht, businesses with income exceeding 200 million baht is entitled to an additional deduction of 6% for that portion of income exceeding 200 million baht.

4.3.2 Accelerated Depreciations for Assets Used in R&D

The rules on standard depreciation for tax purposes in Thailand have been set forth under Section 65 Bis (2) of the Revenue Code. By virtue of this section, depreciation and depletion of assets shall be deductible under the rules, procedures, conditions and rates specified by the Royal Decree No. 145 B.E. 2527 (1984) on Deduction of Wear and Tear and Depreciation of Assets. Furthermore, there is a method for computing the depreciation of assets classified in detail by Departmental Order No. Paw. 3/2527 to guide companies and juristic partnerships in the computation of depreciation deduction.

4.3.2.1 Evolution of Accelerated Depreciations for R&D Machinery in Thailand

The depreciation for tax propose as an incentive in Thailand is stipulated in The Royal Decree issued under the Revenue Code governing The Deduction of Wear and Tear and Depreciation of Assets (No. 145), B.E. 2527 (1984) that accommodates the initial allowance for the first year depreciation expense deduction of the qualified property acquired and placed in service at the rates prescribed by the above Royal Decree. Then, the remaining value after subtracting with the initial allowance can be deducted again under the standard depreciation rules and condition, and this adjusted basis will be the cost basis of the standard depreciation rule in the fourth year onwards.

Section 4. *The deduction of wear and tear and depreciation of asset shall be made in proportion to the period of time since the acquisition of the asset in the respective accounting period, and if any accounting period is less than a duration of the full twelve months, proportionate adjustment shall be made for that accounting period: provided that in no case shall the deduction be exceeded the following percentage of cost value according to the categories of asset.*

For assets in the category of machinery and accessories used in R&D, Section 4 Bis of Royal Decree No. 145 as amended by Royal Decree No.319 B.E.2541 (1998) prescribed that the initial deprecation deduction shall be applied on the date of its acquisition at the rate of 40% of the cost value, and the residual cost value (60%) shall

be depreciated in accordance within the condition and the rate of not exceeding 20% per annum. This measure is known as "initial depreciation."

4.3.2.2 An Example of Depreciation Calculation

Table 4.6: An Example of Depreciation Calculation (Straight Line Method)

Year	Normal	Initial Depreciation
Year 1	20%	40% + 12%*
Year 2	20%	12%
Year 3	20%	12%
Year 4	20%	12%
Year 5	20%	12%
Total	100%	100%

*12% is calculated from the remaining of 60% x 20%

According to above table, if the taxpayer purchase a machinery used in R&D 800,000 Baht on December 1, 2015

On December 1, 2015 the machinery may initially be depreciated at 40% of cost

= 800,000 x 40% = 320,000 Baht

The remaining of the cost value will be depreciated at the rate of 20% / years

= 800,000 – 320,000 = 480,000 Baht

On December 31, 2015 = 480,000 x 20% x (31/365) = 8153.42 Baht

Thus, in the year 2015, the taxpayer is allowed to a total depreciation amount of:

= 480,000 + 8153.42 = 328,153.42 Baht

Where the depreciation deduction for a general machinery is just 20% of the cost value, thus, in 2015, the depreciation deduction for the general machinery is allowed to write off only 8153.42 Baht.

4.3.2.3 Conditions of Accelerated Depreciations for R&D Machinery[160]

i. The machinery and accessories are not used for manufacturing goods or providing services except that machinery is designed for development of products, process or new services, or testing quality of product, or improving manufacturing processes in order to reduce costs or increase productivity,
ii. The machinery and accessories have not been previously used,
iii. Such machinery and accessories can be put to use for a further 2 years or longer, and
iv. The cost value is not less than 100,000 baht.

4.3.2.4 Beneficiary

A company or juristic partnership or R&D service provider who purchases machinery and accessories for the purpose of R&D under the conditions mentioned above is entitled to an initial depreciation deduction allowance at a rate higher than general machinery and accessories. Thus, they may pay less tax in the first year of purchasing the machinery and will also gain a cash flow benefit due to the delay in tax payment in the first year.[161]

Apart from these two tax measures under the Thai Revenue Code, there are also R&D tax incentives granted under the Investment Promotion Act B.E. 2520. R&D Tax incentives granted under the Investment Promotion Act include exemption and reduction of import duties on promoted goods, and exemption and reduction of

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[160] Section 4 Bis (1) (2) Royal Decree No. 145 B.E. 2527 (1984)
[161] Revenue Department, *"Tax Incentive for Research and Development", See*: http://www.rd.go.th/publish/16832.0.html, accessed on September 9, 2015

corporate income tax. These tax incentives are granted by BOI. The main reason for granting these tax benefits is to attract foreign direct investment.[162]

Under Thailand BOI's scheme to encourage the industrial sector's investment in developing Skills, Technology and Innovation (STI), additional rights and privileges shall be granted to BOI promoted companies investing in the development of Skills, Technology & Innovation. Based on the BOI Announcement No. 3/2549 and its amendment in the BOI Announcement No. 6/2552[163], STI expenditures must cover 1. Research and development or design. 2. Advanced technological training and 3. Support for educational or research institutes

4.4 Tax Issues for Promoting R&D in Thailand

The major R&D tax incentive under the Revenue Code in Thailand is the Tax Allowance stipulated in Royal Decree No.297, allowing a company conducting R&D either by itself or hiring a qualified R&D agency a double deduction of R&D expenses in the calculation of its corporate income tax.[164] As such, the company's income is reduced by 100% of R&D expenditure. Since the program was implemented in 1996, there is no study on whether the policy has been implemented properly, or whether the tax incentive has effectively stimulated R&D investments in the country according to the initial objective.

Moreover, R&D activities in Thailand have been neglected by many businesses, as they still consider any expenses spent on R&D as costs rather than investments. The

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[162] Arthit Satthavorasit, "*Tax Incentive in Thailand*", **Dhamniti Tax Magazine**, Vol.34 No.402 (March, 2015) (อาทิตย์ สัทธวรสิทธิ์, '*มาตรการทางภาษีในประเทศไทย*', **เอกสารภาษีอากร,** วารสารธรรมนิติ ฉบับที่ 34 เล่มที่ 402 (มิถุนายน 2558))

[163] Currently, BOI announces the announcement No. 2/2557 "Policies and Criteria for Investment Promotion and decline the BOI Announcement No. 3/2549 and No. 6/2552 by using the new one instead in the number of 9.2 Merit-based Incentives in order to attract and stimulate more investment or spending on activities that benefit the country or industry at large

[164] Arthit Satthavorasit, *supra* note 162

Tax incentive in place since 1996 for companies with R&D projects are not very attractive and have shown limited results so far. Under the content of the Royal Decree No.297, the tax scheme does not provide enough benefits to encourage a start-up company with insufficient budgets for its day-to-day business operations to consider conducting R&D activities. In addition, the tax scheme has shown limited impact on the technological activities of firms since most firms are already facing burdensome operational and administrative requirements, and in part are subject to the tax auditors' ability to draw a consistent distinction between R&D and other expenditures, as per the NSTDA's final approval.[165] Additionally, the soft loan grants through the Research and Technology Development Resolving Fund (Operated by MOST) and the NSTDA soft loan facility are minimal at this stage due to limited budgets.

Although Thailand has already issued the Royal Decree No. 598 on increasing tax incentives for expenditures of R&D in 2016, considerations must still be taken into account on the appropriateness of this Royal Decree towards the promotion of R&D activities, whether such amendment would encourage private entities to invest more in R&D, and whether such investments would be sufficient to solve current R&D issues in Thailand.

Considering the contents of Decree No. 598, it can be seen that the Decree has provided additional benefits to those who wish to invest in R&D, where previously investors would receive a tax exemption benefit of twice the amount of income tax; with the newly issued Decree, investors will now be eligible for a triple amount of tax exemption on expenses paid for R&D of technology and innovation. Although the proprietor of the R&D project may apply for tax exemption thrice the amount of the actual expenses paid for R&D of technology and innovation, the exemption amount shall not exceed the cap prescribed for tax exemption. The proprietors will be divided based on business size, which dictates the exemption rate as such: those who have income of not more than 50 Million Baht will be eligible for the tax exemption of the R&D expenses at the maximum rate of 60% of income; those earning a revenue of

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[165] Yunpeng Zhu, , Hal Hill, *supra* note 52, at 288

between 50-200 Million Baht will be eligible for an additional tax exemption of 9% on that portion of revenue, and those earning revenue of more than 200 Million Baht will be eligible for additional tax exemption of 6% for that portion of revenue. The government does not, in any case, grant a benefit of 300% tax exemption to all proprietors. In the case where the company has a low turnover but high costs for R&D, the company may be granted a benefit limited by the stipulated cap, or, in the case of a large proprietor with high turnover and high cost of R&D, the benefits derived from investing in R&D will also be restricted. Therefore, it can be summarized that the Decree No. 598 stipulates tax benefits for R&D based on the income level of the company. The purpose of this is to provide equal benefits to all size of businesses, ranging from large enterprise to small and medium enterprise or SME, thereby mitigating the income gap effect. This has been done with no considerations of the actual expenses invested by investors. The amount of benefit received may not be as much compared to the amount invested by the company if the expenses for R&D are disproportionate to the revenue generated by the proprietor.

Another issue that has not yet been resolved by the Decree No. 598 is where the proprietor faces a loss, or where the proprietor's expenses of R&D or innovation is higher than the net income of the same accounting year such expenses are incurred. The company will not be able to deduct the expenses eligible for additional tax deduction from the revenue of company if the total amount is more than the net income for that particular year. This is because the content of the Decree only provides benefits in the form of tax exemptions of the business' net income prior to expenses deduction. Therefore, in the case where the proprietor's income is insufficient to be eligible for the benefit, the proprietor will not be able to fully receive the benefit.

As for the issue on the definition of R&D, the Notification of MOF on Income Tax (No. 391) by virtue of Section 4 of the Decree under the Revenue Code Regarding the Tax Exemption (No. 598) has amended the previous definition provided by the Notification of MOF on Income Tax (No. 3) and provides an additional definition of "Innovation" to encourage private sectors to invest, and create new innovation in order to develop the capability of R&D in Thailand, uplifting the country's ability to compete with current market trends, which are mainly driven by technology and innovation.

Notification of MOF No. 391 provides a clearer and more comprehensive definition of R&D. The definition of 'basic research' remains almost the same as the existing definition (Notification of MOF No. 3). A new definition has been given to 'applied research', where the research is categorized into two types - applied research, and experimental development research. Furthermore, the previous condition stating that "R&D project cannot be modified or applied for industrial or commercial purposes" has been removed. Nonetheless, even though the definition has been improved in terms of clarity and comprehensibility, the definition is still too broad as it does not provide the details of what characteristics are included or excluded to be considered an eligible R&D activity, and hence, the applicants lack a clear guideline on what type of R&D activities would be eligible for the tax incentives.

The last issue concerning accelerated Claim on Capital Expenses was not addressed since the enactment of the Royal Decree No.145 in 1998. Machinery and equipment for R&D may be depreciated at 40% of cost with the remaining balance being depreciated not exceeding 20% per annum. However, this measure offering an accelerated depreciation of 40% is just a relief of tax burden on taxpayers for the first year, but at the end, they still get to deduct 100%. Thus, the measure does not result in tax reduction for taxpayers, but only defers the tax payment at the initial stage of R&D investment.

CHAPTER 5
CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

We cannot deny the fact that technology and innovation is the basis for the world's economic growth. Every country around the world is seeking for new ways to accentuate added values to existing products and services on the base of technological and innovative development. The present world's economy has thus transcended the point of dependency on heavy industries, and has moved into the era where we become more dependent on information, technology and innovation. Every country in the world is moving forward on this basis, and even Thailand has to accept that we cannot diverge away from this same path.

From the ranking conducted by the IMD World Competitiveness Center in 2015, Thailand came 3rd in ASEAN, after Singapore and Malaysia. However, compared to the global ranking, Singapore is the only country in ASEAN that made it to the world's top 20 in Scientific and Technological Infrastructure (ranking 2nd and 16th respectively), followed by Malaysia, ranking 5th in Technological Infrastructure and 26th in Scientific Infrastructure, whereas Thailand is ranked 44th in Technology Infrastructure and 47th in Scientific Infrastructure, which was ranked at the last place amongst these three countries. On this light, there are several reasons for why Thailand is ranked in the bottom tier. One of those reasons is the low investment level on R&D in Thailand. When considering GERD from both the public and private sector of each country, it is found that Thailand's GERD is very low compared to that of Singapore and Malaysia. Singapore's GERD is up to 10 times more than that of Thailand, whereas Malaysia's GERD is 4 times more. When calculated as a fraction of GDP, it is found that Singapore's investment on R&D factors to about 2.15% of GDP, whereas Malaysia's investment on R&D factors to about 1.13% of GDP. In comparison, Thailand's investment on R&D only comes to 0.39% of GDP.

In order to promote investments on R&D, tax measures are used to encourage private investments on R&D in technology and innovation. This will directly impact the country's economic growth, as well as uplifting the country's competitive capabilities in the global market.

Incentives applied to stimulate R&D and innovation activities can generally be divided in two main methods: 1) delivered directly to business in the form of grants, subsidies, loans or contracts, and 2) delivered indirectly through tax incentives. Incentives are an important and effective tool to be used as an economic stimulus as they reduce certain costs of R&D and innovation activities. An increasing number of OECD countries are also using tax incentives to spur R&D and innovation as they recognize the fact that these incentives are key to enhancing productivity and performance.

R&D incentives introduced by governments of many countries around the world generally fall into the following categories:

• Tax allowance

• Tax credit

The main type of tax incentives used by Thailand to promote R&D activities are in the form of enhanced R&D expenditure deduction from taxable income, similar to Malaysia, where enhanced tax deduction is selected in preference to tax credit. Nevertheless, even an advanced economy such as Singapore prefers enhanced deduction to tax credit.

1. Tax allowance, or tax concessions often refer to a deduction of more than 100% of the R&D expenditure incurred, for instance, a double tax deduction for expenses incurred on approved R&D activities in Malaysia. Tax allowances can be also varied by the amount of imposing cap on deduction allowed. Singapore offers the most generous enhanced deduction incentive under the PIC scheme introduced in 2010, which was further enhanced in the 2011 and 2014 Budget announcement. Under the PIC, expenditures incurred on R&D will effectively enjoy a 400% deduction for the first S$ 400,000 up until the YA 2018.

2. Tax credit can be deducted from an entity's tax liability, working as a lump sum deduction as opposed to a reduction of income, which is subjected to tax charges. Tax credit incentives may vary by the different rates of credit and/or of computing tax credits on specified types of R&D expenditures, or may vary by the incremental value of R&D expenditure from the previous year. Tax incentives can be based on the level of R&D investment (volume based), on the increment of R&D (incremental), or on a combination of the two.

Moreover, some countries also offer other types of tax incentives such as tax relief, tax exemption (tax holiday), and tax deferral to encourage R&D activities.

3. Tax relief, or reduced tax rates, are favorably low rates of tax that can be enjoyed by eligible taxpayers in targeted or specific industry sectors and promoted areas for varying lengths of time. This type of tax incentive is not implemented in Singapore and Malaysia.

4. Tax exemption, or tax holiday, refers to a fixed period during which eligible income is exempted from tax wholly or partially. Tax holiday is usually targeted towards specific industry sectors or promoted areas that the government intends to develop or promote. An example on the implementation of tax exemption is the pioneer status incentive in which a contract R&D company in Malaysia could enjoy 100% tax exemption for 5 years on statutory income.

5. Tax deferral refers to a specific form of tax incentive, which is relieved in the form of a delay in tax payment such as depreciation allowances. The claim for tax deferral may be in the form of accelerated depreciations of assets, allowing the claim of capital expenditure to be expedited, such as the case of initial deprecation allowance for R&D machinery in Thailand, or the additional claim allowing that the amount of capital expenditure claimed by the company may exceed 100% of the cost incurred.

In addition to accelerated capital allowances, other allowances may apply to qualifying capital expenditures, hence, resulting in a more than 100% claim for allowances on the capital expenditures incurred. For instance, in the case of the investment tax allowance incentive implemented in Malaysia, a further 50% to 100%

is claimable as investment tax allowance on the cost of a qualifying assets in addition to the normal capital allowances claimed.

For Thailand, in order to promote and encourage the private sector to invest in research and technology development, the Revenue Department has launched two forms of tax incentives to promote R&D since 1996. The first form of incentive is the tax allowance measure allowing companies and partnerships investing in R&D to deduct a higher amount of expenditures paid for R&D activities from their taxable income. Under the Royal Decree No. 297 of July 15, 1996, the additional deduction is equal to 100% of eligible expenditures incurred on R&D activities, carried out in Thailand, paid out to an approved R&D service provider. However, in 2016, the Royal Decree No. 598 was issued, extending the 200% corporate tax deduction for R&D expenses under Royal Decree No. 297 to also include Innovation expenses paid out for hiring an authorized R&D organization to undertake Innovation activities for the entity. Thus, a new five-years 300% corporate tax incentives for R&D and innovation expenses was introduced.[166]

The main features of the incentive include[167]: the exemption of corporate income tax for juristic partnership and companies for expenditures paid for research and development on technology and innovation to public or private organizations as published in the Government Gazette at three times the amount of the expenses paid out as R&D expenditures. However, this amount must not exceed the percentage of gross income in the calculation of net profit before deduction of any expenses in an

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[166] MGR Online, "*Ministry of Science proceeds with 300% tax exemption aiming to increase investment in research*", **SME News**, March 25, 2016 (ผู้จัดการออนไลน์, "ก.วิทย์ฯ เดินหน้ามาตรการเว้นภาษี 300% เป้าเพิ่มสัดส่วนทุนวิจัย", ข่าว SME, March 25, 2016); *See:* http://www.manager.co.th/iBizChannel/ViewNews.aspx?NewsID=9590000031049 accessed on May 15, 2016

[167] EY Global Tax Alert, *"Thailand Approves increased tax incentive for research and development expenses", See:* http://www.ey.com/GL/en/Services/Tax/International-Tax/Alert--Thailand-approves-increased-tax-incentive-for-research-and-development-expenses, September 9, 2015

annual accounting period. A triple deduction is also available, although capped at the following limits calculated based on gross revenue:

1. For gross income not exceeding 50 million baht - an Exemption of corporate income up to sixty percent of Total Gross Income.

2. For gross income in excess of 50 million baht but not more than 200 million baht - an exemption of corporate income up to nine percent of Gross Income.

3. For gross income in excess of in excess of 200 baht - an exemption of corporate income up to six percent of Gross Income.

The incentive is effective for eligible R&D expenditures incurred from January 1, 2015 to December 31, 2019.

The second feature is a special initial depreciation on the date of acquisition of the machinery (including all related equipment) used in R&D projects at the rate of 40 percent of the total acquisition cost. This measure offers benefits to R&D service providers providing R&D services in Thailand. Investors in R&D will be able to gain the tax privileges if they fund their own R&D unit qualifying the criteria set forth by the Research and Development Certification Committee Secretariat (NSTDA).

5.2 Recommendations

The system for R&D tax incentives, as proven by research, is important for encouraging R&D activities. In previous studies, it can be seen that R&D investments by the private sector in Thailand is still very low. Although the R&D tax incentive, with the main goal of stimulating R&D investments in the private sector, appears to have low effectiveness, this does not necessarily imply that the incentives imposed is undesirable. The recommendation is not to abolish the policy, but to modify and improve existing measures in order to enhance their general effectiveness. The following recommendations will perhaps allow for a more effective implementation of the incentives toward the goal of stimulating more R&D investment in the private sector in the long run, which will be beneficial to the country in a sustainable manner.

5.2.1 Strengthening of the R&D tax incentive

5.2.1.1 Definitions

i. Definition of R&D

Under the Notification of MOF no.3, Since, Thailand copies the definition from GATT, the definition of R&D is not clear and not understandable and also not applicable for Thai industrial or commercial activities. Furthermore, the definition of R&D as defined in GATT is defined too broadly. A broad definition does not provide clear guidelines for applicants interested in conducting R&D projects. It could render difficulties in promoting R&D practices, as such applicants may feel the tax measure may not be of assistance. Thus, it is crucial that the definition includes more details on the list of criteria for the factors that should be included or excluded from the scope of the defined term 'R&D' by law.

Extending the definition would result in more types of eligible projects under the incentive scheme, and more applicable R&D activities to the Thai ecosystem. However, it should be noted that the extension may come into conflict with GATT regarding subsidy, and may be considered as a dumping of exports. Lastly, if the definition is not precise, it will create gap in law implementation, out of which certain parties with mal-intentions may exploit wrongly.

Since the Royal Decree No.598 was issued, the Notification of MOF on Income Tax (No. 391) by virtue of Section 4 of the Decree under the Revenue Code Regarding the Tax Exemption (No. 598) has amended the previous definition provided by the Notification of MOF on Income Tax (No. 3). Some of the problems pointed out above have since been resolved. However, there are still some issues that have not yet been resolved. Although the definition has become clearer and more understandable, it is broad and does not provide the details of what characteristics are to be included or excluded as R&D, and hence, lacking a clear guideline for applicants on what type of activities would qualify for the proposed R&D tax incentives.

Comparing to Singapore and Malaysia's definition of R&D, it is seen that the definition of R&D defined by these two countries are defined broadly, such as the case

in Thailand. However, there has been a clear identification of R&D activities that does not fall under the scope of the general definition at the end of the decree. This allows the readers to be able to interpret the definition of R&D more specifically.

Thus, it is suggested that specific details should be provided to define those R&D activities that does not qualify under the scope of the R&D definition provided at the end of Section 2 in the Notification of MOF no. 391 as in the example below:

Some activities may not be qualified as R&D if it falls within the list of activities stated below.

(a) quality control or routine testing of materials, devices or products;

(b) research in the social sciences or the humanities;

(c) routine data collection;

(d) efficiency surveys or management studies;

(e) market research or sales promotion;

(f) routine modifications or routine changes to materials, devices, products, processes or production methods; or

(g) cosmetic modifications or stylistic changes to materials, devices, products, processes or production methods;

(h) development of a computer software that is not intended to be sold, rented, leased, licensed or hired to two or more persons who are not related parties[16] to each other, and to the person who develops the software or on whose behalf the development of the software is undertaken.

ii. Qualified Expenses

From since the Royal Decree No. 297 was issued to the present time where the Royal Decree No. 598 is enacted, there were no details on what kind of expenses can

be included, with no clarity on when, and how the R&D expenses can be deducted, or when and how to apply the incentive.

The NSTDA has set the regulation for the expenses on R&D projects. The regulation divides expenses into 8 categories: Salaries/Wages, Consultant/Expert Fees, Equipment Tools, Improvement/ Repair/ Maintenance Fees, Laboratory Services, Research Materials, Operating Expenses and other direct expenses. However, the categories are provided as just a guideline for the R&D approval officer. The private firms are not sure what expenses are eligible for the R&D incentive, because in practice, decision of whether an activity is eligible or not depends on the individual judgement of each officer, who may have different interpretations.

The Revenue Department should specify clear characteristics and criteria for qualified R&D expenditures. The regulation should be issued by the Notification of Finance, clarifying the types of expenses that may qualify for the incentive, and stating a clear instruction on how R&D expenses can be deducted in tax calculations. This will create confidence in applicants, encouraging them to invest in more R&D activities, where the benefits they can gain is clearly laid out for each type of expenditure correctly.

5.2.2.2 Increasing to 150%-200% Exemption

While many countries have continuously reviewed and enhanced their R&D tax incentives, there were no changes made to the Thai R&D tax incentives over the past 15 years from since the Royal Decree No. 297 was implemented. Hence, many of the investors in Thailand may have lost their interests from unattractive benefits compared to those offered in other countries. For example, in Singapore, the PIC scheme has been introduced where eligible R&D expenditures, both in revenue and in capital, incurred in Singapore is given an enhanced deduction of 400% for the first S$400,000 of expenditure, followed by 150% for the R&D expenditure in excess of s$400,000. Compared to Thailand, the exemption of income tax amounting to 100% of the qualified expenses paid out to R&D service providers under Section 3 of the Royal Decree No. 297 equates to the enhanced deduction rate of 200%, and is only restricted to revenue expenditure.

Nevertheless, Thailand has issued the Royal Decree No.598, increasing the tax incentive for R&D expenditures in 2016 to 300% corporate tax exemption. The double portion equates to 100 per cent of the actual R&D expenses incurred, where the triple portion equates to 100 per cent of the actual R&D expenses incurred during the period from January 1, 2016 to December 31, 2019. However, the total tax exemption must not exceed the percentage of gross income applied in the calculation of net profit before deduction of any expenses in the same annual accounting period. The triple deduction is also capped at the limits calculated based on gross revenue as mentioned.

After the Royal Decree No. 598 has been enacted in 2016, tax incentives have been increased for expenses incurred for research and development on technology and innovation. Investors will now be eligible for the tax exemption at a triple amount of the expenses paid for R&D on technology and innovation. Nevertheless, this amount may not exceed the limit caps prescribed for tax exemptions. As such, it can be seen that the government does not offer a full 300% tax deduction to all businesses. In the case where a company generate low revenue, but has incurred a large amount of R&D expenditures, the company is entitled to tax exemptions capped by the income limit. Or in the case where a company earns a large sum of revenue, and yet has incurred a large sum of R&D expenditures, the tax benefits received is still subjected to the maximum cap. Thus, it can be seen that the enactment of the tax benefit capped by the income limit under the Royal Decree No. 598 serves the purpose of distributing equal access to tax benefits for all sizes of business from large to small-medium or SMEs. As such, the actual expenditures on R&D of businesses are not wholly considered. Even if a business has invested a large amount of capital in R&D, but if that amount does not coincide with the amount of income generated, the tax benefit receives may not match with the investment amount.

Therefore, in order for R&D investors to receive the greatest benefit, the 300% tax benefit should be offered without considering the business income ceiling, which might limit the amount of spending on R&D as such spending may be disproportionate to revenue, for example, a SME or startup company may want to invest in R&D, but is currently operating at minimal income. In such a case, the government should support these companies, since they make up a large part of the economy, and are willing to

invest in R&D to boost the country's overall R&D activities, therefore not limiting to only large companies that are already incurring R&D expenditures. If a ceiling shall be enforced to limit the benefits received by investors, the ceiling should be enforced based upon the actual amount spent on R&D activities, similar to that enforced in Singapore. Singapore offers the most generous enhanced deduction incentive under the PIC scheme. Under the PIC, the tax allowance can be varied by imposing a cap on the amount of deduction allowed. Companies would enjoy a 400% deduction for the first S$ 400,000, followed by 150% for the R&D expenditures in excess of that amount.

The author would, thus, like to suggest that the increasing rate of tax exemption should apply to all types of corporations, in particularly the SMEs. The policy should increase the deduction for R&D expenditure to 300%, subjected to a cap of 1-2 million baht in research expenditure per year. Therefore, Section 5 of the Royal Decree No. 598 should be amended to state that Income Tax shall be also exempted under Division 3, Chapter 3, Title 2 of the Revenue Code to any companies or partnerships, for the income of any companies or partnerships amounting to 100% of the expenses incurred in the R&D of technology and innovation from January 1, 2015 to December 31, 2019 for any expenses paid towards R&D on technology and innovation amounting to not more than 2 million baht per annum. This is in addition to the tax exemption on Income Tax as prescribed under Section 4 for any additional expenses subjected to ordinary tax exemption asides from the additional exemption on Income Tax on R&D expenses in the first portion not exceeding the stated ceiling limit. The policy should also include the option to convert R&D deductions into non-taxable cash grants to ease potential cash-flow problems faced by SMEs.

5.2.1.3 Loss-Making Situation

Thai tax incentive is given in the form of an exemption of corporate income tax for an amount equal to 100% of the expenses incurred for research and technology development activities. In the case of a loss-making situation, losses can be carried forward up to five accounting periods under the general provisions of the Revenue Code. As a result, loss-making firms will also enjoy the benefits. However, if the R&D

expenditures are spent out more than the net incomes received in the same year, the amounts of R&D expenditure deducted cannot exceed the gross amount of incomes.

The government should allow the losses from R&D expenditures incurred in a particular year to be carried forward and deducted against income derived in the subsequent year for within the window period of 5 years, or until these losses are fully utilized. For example, in Malaysia, under Section 29D (4), in the case of an insufficiency or absence of statutory income derived from the business, regarding R&D related activities conducted in the same YA, the benefit cannot be given in full to the company. However, the allowance may be reclaimed in the subsequent year for which there is statutory income from that business, and can still be carried forward into subsequent years of assessment until the company has received the whole of the allowance to which it is entitled. This approach may be attractive to small and medium size enterprises (SMEs), encouraging them to invest more in R&D, as even the losses incurred in the first year of business can be carried forward in full amount and deducted in subsequent years.

When considering the changes made in the Royal Decree No. 598, the issue concerning the case of loss-making companies, or the case where a company may incur more R&D expenditures than net income for the same accounting year has not yet been addressed. In such cases, the company is still unable to deduct additional portion of expenses from the company's revenue more than the net income if the total amount is more than the net income for that particular year, as it is clearly stated in the Royal Decree that the benefit is given in the form of tax exemption deducted from the company's net income prior to net profit calculations. As such, companies with lower income than specified may not receive the full benefit of the incentive scheme.

In order to encourage R&D activities among SMEs or Startups, which are large in number, and at the same time requires the most supportive efforts from the government, amending the tax incentive measure to consider carrying forward losses is necessary. This is so that SMEs and Startups can feel that they will receive the full benefit of the tax incentives imposed. Thus, it is recommended that amendments be made to the Revenue Code on Tax Exemption to allow for tax deductions at an amount

of more than the actual expenditure amount in place of the tax exemption measure, as is adopted by Singapore and Malaysia, that is, for any accounting period, where the expenditures incurred exceed the amount of business revenue, businesses in a loss-making situation can carry forward losses up to five accounting periods under the general provisions of the Revenue Code.

However, amending the Revenue Code requires the approval of the senate, and may take a long time. Thus, for the regulations to be enacted more rapidly and conveniently, it is recommended that amendments be made in Section 3 of the Revenue Code instead, to allow the Revenue Department, by virtue of the Royal Decree, the authority to issue a Notification giving a special deduction for expenses paid for R&D other than reduction of tax rate and tax exemption, which should also be applicable to issuing other Notifications for additional deductions in all other cases.

5.2.1.4 Accelerated/Enhanced Claim on Capital Expenses

In Thailand, machinery and equipment for R&D may be depreciated at 40% of their cost with the remaining balance being depreciated by an amount not exceeding 20% per annum. However, a company employing R&D services for its own business, including the R&D service providers, is entitled to wholly claim the cost of R&D asset in an amount not exceeding 100% of the cost incurred. However, the benefit is given in the form of a delay in tax payment, therefore, it does not result in reducing the tax burden of the applicants, but will only defer the tax payment at the initial stage of R&D investment.

Therefore, it is recommended that tax incentives be granted in the calculation of R&D Machinery and equipment costs. In addition to the initial deprecation deduction at the rate of 40%, Thailand should offer an enhanced claim on capital expenditures, which may allow for the cost of Machinery and Equipment for R&D claimed by the company to exceed 100% of the cost incurred. For instance, allowing a claim of up to 150% of the actual cost of R&D assets, which can be depreciated under the current initial allowance scheme.

5.2.2 Additional Tax Incentives for R&D

As shown in previous studies of other countries like Singapore and Malaysia, in addition to modifying and improving existing measures, it is suggested that Thailand should apply other measures to promote R&D. Some recommended measures are as follow:

5.2.2.1 Establishment of National Research and Development Fund

To stimulate more R&D investments in the private sector, and to enhance its effectiveness, Thailand should establish a National Research and Development Centers with an autonomous status. The R&D institute could be registered under the approval of a government agency, perhaps in the form of a R&D fund established by the Thai Government as an independent state agency. There are many funds governed by the Board under the Prime Minister of Thailand, for example, “The Health Promotion Foundation” under the Health Promotion Foundation Act B. E. 2544 , ”The National Sports Development Fund” under the Sports Authority of Thailand Act B. E. 2558, and “Thai Public Broadcasting Service” under the Thai Public Broadcasting Service Act B. E. 2551, all founded with the objective for funding and establishing the necessary elements required for paving the way towards the country’s sustainable development in each specific area. The funds also have the authority to collect levy from the persons subjected to taxation under the law on alcoholic beverages and the law on tobacco at the rate of 1.5 -2 % of tax collected from alcoholic beverages and tobacco.[168]

In establishing the aforementioned funds, the Thai Government must issue a Legislative Act to establish the National R&D Fund. Before the enactment of the legislative act, the Government is required to submit a draft to the legislative assembly, where the Government should consider drafting the proposal for the establishment of a

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[168] Health Promotion Foundation and the National Sports Development Fund are funded by a 2% additional levy on top of the excise taxes from alcoholic beverages and tobacco products while Thai Public Broadcasting Service is derived from 2% of surcharged alcohol and tobacco excise tax.

National R&D Fund to promote R&D activities in Thailand, and to support long-term sustainable investments by any private sector conducting R&D activities. This may include the conduct of studies and research, the training or organization of meetings with regard to R&D promotion, etc. Once the draft of this Legislative Act concerning the Establishment of the National R&D Fund has received approval from the senate, it shall be published in the Government Gazette and became effective.

The source of funding for the National R&D Fund will be gathered from various channels such as by government subsidy, collection from the annual budget, fees, maintenance charges, remuneration, service charges or incomes from its operation including additional levies on top of the excise taxes related to R&D. For instance, the funding for Health Research would be derived from taxes on alcohol and tobacco, whereas the funding for research and innovation projects on vehicles would be derived from pollution taxes collected from vehicle owners. The fund could be further supplemented with donor contributions from the private sector or other organizations, including foreign sources or international organizations of money or property donated.

For further considerations, once monetary supports are received, the fund or organization that has received the donations will use the funds received on R&D projects for the benefit of the society as a whole. This can be deemed as R&D for social purposes, which coincides with The Technical Research and Development Institute (TDRI)'s main purpose, as it is established as a public policy research institute in 1984, providing technical analyses to various public agencies, helping them formulate policies to support long-term economic and social development in Thailand. The fund may also use the money received to hire private entities to conduct further research within the scope that has already been set, similar to the case of the Health Promotion Foundation. The fund should also work as an independent organization and should not be under the control of the government that may deprive the fund of its independence, or may cause the Organization to act in contrary to, or inconsistent with, its objectives. However, the utilization of money should be closely monitored and audited by the committee appointed under the organization to make sure all budgets are spent properly and in line with the fund's purposes to prevent future fraudulence.

5.2.2.2 Tax incentive for Donor

Thailand should provide special tax incentives for individuals or corporations to donate to R&D institutions already registered under the approval of government agencies such as The Thailand Research Fund, TDRI, NECTEC, etc. The donations or contributions could be in the form of money or in kind. Special tax incentives maybe given in form of tax allowance or double deduction (tax exemption). However, there should be a ceiling on the deduction or allowance a taxpayer can claim each year, such as the capped ceiling of 10% of taxable income, by issuing a Notification on Tax Exemption under the Royal Decree by the Revenue Department as follow:

(1) For an Individual, a double deduction of tax exemption is given on the net income, after enforcing all tax exemptions as stated in Section 47 (1) (2) (3) (4) (5) and (6) under the Revenue Code, for the payments made towards the promotion of R&D on Technology and Innovation, to an amount not exceeding 10% of net income after enforcing the exemptions as stated above.

(2) For a company or corporate partnership, a double deduction of tax exemption is given on the actual fees paid in support of R&D on Technology and Innovation, but must not exceed 10% of the net profit before the deductions made from donations or any other charitable purposes, including donations made in support of education or sport as per Section 65 Ter (3) of the Revenue Code.

As such, the implementation should follow the guidelines and conditions set forth by the Director-General of the Revenue Department.

5.2.2.3 Tax Incentive for Researchers

Any person or partnership engaged in R&D services are eligible for a tax exemption of 50% on the income earned from such activities. As an indirect tax benefits, VAT exemptions on R&D services should be granted to the researchers. This is to encourage more people to enter the fields of R&D, and to encourage existing researchers to undertake more research activities as there is a shortage of research personnels in Thailand.

5.2.2.4 Tax Incentive for R&D Service Provider

In Thailand, R&D service providers do not benefit from the R&D tax incentives proposed, but accelerated depreciation rate in the first year of acquisition for R&D machinery and equipment may be granted. After having considered the tax allowance incentive in Malaysia, Contract R&D Company, R&D Company and In-house R&D who carry out R&D services in Malaysia are entitled to receive a further 50% to 100% deduction as investment tax allowance on the cost of a qualifying assets in addition to the normal capital allowances claimed. The allowance can be used to offset against 70% of the income generated in each Y.

The accelerated depreciation rate granted to R&D service providers does not serve as a strong enough incentive to encourage service companies to invest more in R&D such as the buying or importing of new/modern machines and equipment in order to effectively deliver R&D services to clients. Thus the Government should issue a partial tax exemption on taxable income for a certain period to approved R&D service providers. The tax incentive may be granted in the form of a tax allowance allowing for the tax exemption equal to 100% on qualifying capital expenditures offset against statutory income. For approved R&D service providers conducting R&D for themselves, the tax exemption can only be claimed if that company is not already enjoying the additional deduction of R&D expenses allowance from the other schemes.

The tax incentive scheme aims to encourage investors or private entities to carry out more R&D activities in order to receive more tax benefits. However, the enactment of this policy may cause the government to lose a significant portion of income from taxes. Yet with increasing R&D activities by the private sector will allow the government to indulge in increased tax revenue from other types of income taxes such as the VAT, corporate income tax, and individual income tax derived from the sales of value-added products and services, or from the increase in employment. Research shows that the increase in opportunities derived from increasing R&D activities will

allow the government to generate much more revenue than the revenue lost from excising the tax incentive schemes.[169]

Apart from the suggestions above, the need for direct support by the Government is very important for the development of R&D in Thailand. Tax allowance may provide certain benefits to companies, but more importantly, companies often seek financial supports in terms of loans. Tax incentive schemes, even with the benefits entailed, are still much less effective than direct financial measures. Expenditures usually does not occur immediately; companies often receive their payments as late as 2-3 quarters of a year. Direct financial support will allow companies to receive advance cash flow to use for other R&D activities, and also to prepare for other R&D projects, as well as purchasing or preparing materials and equipment for subsequent experiments.

The recommendations made on the tax incentive schemes to promote R&D activities on Technology and Innovation are only initial measures to stimulate and support those who are interested in investing on R&D activities. However, the implementation of such schemes to achieve an effective outcome must be derived from the collaboration of all involving parties in order to establish a sustainable development of technology for the country to be on par with other countries in the world's competitive landscape in the future.

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[169] MGR Online, *supra* note 166

REFERENCES

1. Books and Book Articles

1.1 English

James M. Eberle, Kathleen King and Brett Nowak, **Taxand Global Guide To R&D Tax Incentives**, Alvarez & Marsal Taxand, 194, (2011-2012 Edition)

Tanja Tanayama, **Overview of R&D Tax Incentives**, National Audit Office of Finland.

Yunpeng Zhu, Hal Hill, **The East Asian High-tech Drive**, MPG Book Limited Bodmin Cornwall, 2006

1.2 Thai

ไพจิตร โรจนวานิช, ชุมพร เสนไสย และสาโรช ทองประคำ, **ภาษีสรรพากร : คำอธิบายประมวลรัษฎากร เล่ม 1**, สามเจริญพาณิชย์, มกราคม 2553 (paijit rojvanit, Chumphon Sensaiyom, Saroj Thongprakum, **Tax Revenue: Explanations of Revenue Code Vol 1**, Samcharoen Panich Co.,ltd., Jan 2010)

มหาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ, **การจัดทำแผนปฏิบัติการส่งเสริมการวิจัยและพัฒนาในภาคอุตสาหกรรมเพื่อก้าวไปสู่อุตาหกรรมฐานความรู้**, กันยายน 2556, (King Mongkut's Institute of Technology North Bangkok, **Project to Formulate Action Plans to Promote Research and Development in the Industrial Sector towards Knowledge**, September 2013)

2. Articles

ACCA, *"Tax incentives for Malaysia as a regional hub and for research and Development"*, **SA Technical**, 2011

Arnold, E., Bell, M., Bessant, J., & Brimble, P. (2000). *"Enhancing Policy and Institutional Support for Industrial Technology Development in Thailand"*.

The Overall Policy Framework and the Development of the Industrial Innovation System (Vol. 1).

Eleven Malaysia Plan, *"Strategy 21th: Translating innovation to wealth"*, **Economic Planning Unit**, Prime Minister's Department

Elisabeth T. Pereira, Janis Priede, *"Innovation As a Key Factor in the International Competitiveness of the European Union"*, **ISSN 1822–8402 European Integration Studies**, 2013. No. 7

Iraz Haspolat Kaya- Burçin Bozdoğanoğlu, *"Research and Development (R&D) Tax Incentives in Singapore"*, **International Journal of Humanities and Management Sciences (IJHMS)**. Volume 4, Issue 2, 2016

Isabel Busom, Beatriz Corchuelo and Ester Martínez Ros, *"Tax Incentives and Direct Support for R&D: What do firms use and Why?"*, **Universidad Carlos III de Madrid Working paper** WP 11-03.

Jose Caballero, *"Thailand Competitive 2015 Recap"*, IMD World competitive Center, July 16 2015

Karsten Staehr, *"An Analysis of Tax Incentives to Promote Research and Development in Estonia"*, Ministry of Economics and Communication.

Nit Chantramonklasri, *"Science and Technology Development for Industrial Competitiveness in Thailand: Problems and Lessons"*, **TDRI Quarterly Review**, Vol. 9 No. 2, 24, 1994

OECD (2002), *"Frascati Manual 2002: Proposed Standard Practice for Surveys on Research and Experimental Development"*, **the measurement of scientific and technological activities**, OECD Publications, 31, 6th edition, 2002

OECD (2002), *"Special Issue on New Science and Technology Indicators"*, **STI Review No.27**, 2002

OECD (2015), *"Frascati Manual 2015: Guidelines for Collecting and Reporting Data on Research and Experimental Development"*, **The Measurement of Scientific, Technological and Innovation Activities**, OECD Publishing, Paris, 2015

OECD, *"Tax Inventive for research and Development Trend And Issues"*, **Science Technology Industry**.

Paul A. David, Bronwyn H. Hall, Andrew A. Toole, *"Is public R&D a complement or substitute for private R&D? A review of the econometric evidence"*, **Research Policy 29**, 2000

Paula Faria, Vitorino da Silva Martins, Elísio Fernando Moreira Brandão,*" How R&D and tax incentives influence economic growth:Econometric study for the period between 1995 and 2008 of EU-15"*, **FEP Working Papers. No.442**, 2011

Pornpoj Wongpattanangkul, Pimpisa Pranommit, *"Exploratory Analysis of Cycle Time Delay: R&D Tax Incentive Program"*, **Going for Gold ~ Quality Tools and Techniques**. Paper No. 04-01.

Sabina Hodžić, *"Research and Development and Tax Incentives"*, **South East European Journal of Economics and Business**. Volume 7, Issue 2, 2012

Technical, *"Tax Incentives for Promotion of Investment"*, **Student Accountant**, 2008,

Wong & Partners, *"Highlights of the Malaysia Budget 2016"*, 2015.

เทวรักษ์ โรจนพฤกษ์, "การวิจัยและพัฒนาในประเทศไทย : ปัจจุบันสู่อนาคต" , วารสารวิจัยวิทยาศาสตร์ (Section T), ปีที่ 4 ฉบับที่ 2, 2548 (Thevarak Rochanapruek, "*Reseach and Development in Thailand: Present to Future***", Journal of Scientific Research (Section T)**, 4th vol.2, 93, 2005)

สำนักงานคณะกรรมการนโยบายวิทยาศาสตร์เทคโนโลยีและนวัตกรรมแห่งชาติ,*" ศักยภาพวิทยาศาสตร์และเทคโนโลยีไทยอยู่ตรงไหน?"*, พิมพ์ครั้งที่ 1, มิถุนายน 2556 (National Science Technology and Innovation Policy Office, *"Where is a capacity of Thailand in science and technology"*,17, 1st Edition ,2013)

อาทิตย์ สัทธวรสิทธิ์, *'มาตรการทางภาษีในประเทศไทย'*, **เอกสารภาษีอากร**, วารสารธรรมนิติ ฉบับที่ 35 เล่มที่ 413, กุมภาพันธ์, 2558 (Arthit Satthavorasit, "*Tax Incentive in Thailand"*, **Dhamniti Tax Magazine**, Vol.35 No.413, 2016)

อาทิตย์ สัทธวรสิทธิ์, *'มาตรการทางภาษีในประเทศไทย'*, **เอกสารภาษีอากร**, วารสารธรรมนิติ ฉบับที่ 34 เล่มที่ 402, มิถุนายน, 2559 (Arthit Satthavorasit, *"Tax Incentive in Thailand"*, **Dhamniti Tax Magazine**, Vol.34 No.402, March, 2015)

3. Electronic Media

ACCA, “Certainty in Tax”, November 2014, <http://www.accaglobal.com/content/dam/acca/global/PDF-technical/tax publications/tech-tp-cit.pdf>, September 9, 2015

ACCA, The 12 tenets of tax; 2011. <http://www.accaglobal.com/content/dam/acca/global/pdf/tech-tp-ttt.pdf>, September 9, 2015

Business And Industry Portal, Research and development, Developing an R&D strategy <https://www.business.qld.gov.au/business/business-improvement/research-development>, May 16, 2016

Committee on Singapore’s Competitive, executive summary <http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan004867.pdf>, September 9, 2015

Deloitte (2013), Global Survey of R&D Tax Incentives: - Singapore. <http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/Tax/US_Tax_RD_Global_RD%20Survey_March_2013.pdf>, September 9, 2015

Deloitte, 2014 Global Survey of R&D Tax Incentives, March 2014 <http://www2.deloitte.com/content/dam/Deloitte/global/Documents/Tax/dttl-tax-global-rd-survey-aug-2014.pdf>, September 9, 2015

Dharmniti, R&D Expense for Triple Tax Deductible <https://www.dlo.co.th/node/895> May 15, 2016

Eleventh Malaysia Plan, <http://rmk11.epu.gov.my/index.php/en/>, August 5, 2016

EY Global Tax Alert, Thailand Approves increased tax incentive for research and development expenses. <http://www.ey.com/GL/en/Services/Tax/International-Tax/Alert--Thailand-approves-increased-tax-incentive-for-research-and-development-expenses>, September 9, 2015

EY, 2013-2014 Worldwide &d incentives reference guide South Korea. <http://www.ey.com/GL/en/Services/Tax/Worldwide-R-D-incentives-reference-guide-2013-2014---South-Korea>, September 9, 2015

Future ready Singapore, TAXATION. <http://www.edb.gov.sg/content/edb/en/why-singapore/ready-to-invest/setting-up/taxation.html>, September 9, 2015

Global Survey of R&D Tax Incentives, July 2011 <http://www.investinamericasfuture.org/PDFs/Global%20RD%20Survey%20Final%20-%202011.pdf>, September 9, 2015

Inland Revenue Authority of Singapore “History and Milestones”. <https:// www.iras.gov.sg/irashome/About-Us/Our-Organisation/History-and-Milestones/>, August 5,2016

Inland Revenue Board Of Malaysia, “IRBM Profile”, http://www.hasil.gov. my/bt_goindex.php?bt_kump=2&bt_skum=2&bt_posi=1&bt_unit=2&bt_sequ =1, August 5, 2016

IRAS e-Tax Guide, “Research and Development Tax Measures (Fourth edition) <https://www.iras.gov.sg/irashome/uploadedFiles/IRASHome/e-Tax_Guides/etaxguide_IIT_RnDTaxMeasures_2015-01-22.pdf>

NSTDA, Tax Benefits for Research and Development: Research and Development Project Application, RDC, RDP, June 10, 2011, <https://www.set.or.th/th/news/ issuer_activities/recent_seminar/files/20110620RDC%20NSTDA%20Slides10%20June%2011.pdf>

Official Portal of Ministry of Finance Malaysia, Research and Development <http://www.treasury.gov.my/index.php?option=com_content&view=article&id=706&Itemid=200&lang=my>, September 9, 2015

OSTC, Thailand STI’s Capacity and Ways Forward, <http://ostc.thaiembdc.org/13en/thailand-stis-capacity-and-ways-forward/>, September 9, 2015

OSTC, Thailand STI’s Capacity and Ways Forward, <http://ostc.thaiembdc.org/ 13en/thailand-stis-capacity-and-ways-forward/>, September 9, 2015

Revenue Department, “Corporate Income Tax”, <http://www.rd.go.th/publish /6044.0.html>, August 5, 2016

Revenue Department, Tax Incentive for Research and Development <http://www.rd.go.th/publish/16832.0.html>, September 9, 2015

Robin Parson, Asia-Pacific research and development tax relief incentive, Ernst & Young, Australia, 2013 <http://www.ey.com/Publication/vwLUAssets/2013_AsiaPacific_R_and_D_incentives/$FILE/2013_Asia Pac_RD_Incentives_Guide.pdf> May 1, 2016

SA Technical, Tax incentives for Malaysia as a regional hub and for research and Development, ACCA <http://www.accaglobal.com/content/dam/acca/global/pdf/sa_nov2011_RandD3.pdf>, September 9, 2015

SHERRINGS, Thailand R&D Corporate Income Tax Deduction Concession. <https://sherrings.com/research-and-development-tax-deductions-thailand.html> May 1, 2016

Singapore Economic Development Board, “future ready Singapore”, <https:// www.edb. gov.sg/content/edb/en.html>, August 5, 2016

Sriwan Puapondh, A Summary of Thailand’s Tax Laws, Tilleke & Gibbins, March 2009,

Tax incentives to promote innovation (Report), PWC Sdn Bhd. April 2011 <http://innovation.my/pdf/innovating_formulation_of_nis/Tax%20Incentives%20to%20Promote%20Innovation.pdf>, September 9, 2015

UNESCO Institute for Statistics, Data Centre, <http://www.uis.unesco.org/datacentre/pages/default.aspx>, May 16, 2016.

World Bank, “World Development Indicators”,<http://data.worldbank.org/data-catalog/world-development-indicators>, May16, 2016

นคร สังขรัตน์,“การวิจัยและพัฒนา”-หัวใจสำคัญของการพัฒนาชาติแบบสิงคโปร์, (Nakorn Sungkapan, “Imporance of National Development of Singapore”) <http://www.wesme.org/Article/Detail/5545/>, May16, 2016

ผู้จัดการออนไลน์, “ก.วิทย์ฯ เดินหน้ามาตรการเว้นภาษี 300% เป้าเพิ่มสัดส่วนทุนวิจัย”, ข่าว SME, 25 มีนาคม 2559 (MGR Online, “Ministry of Science proceeds with 300% tax exemption aiming to increase investment in research”, SME News, March 25, 2016),<http://www.manager.co.th/iBizChannel/ViewNews.aspx?NewsID=9590000031049> , May 15, 2016

สำนักเลขาธิการคระรัฐมนตรี, ร่างพระราชกฤษฎีกาออกตามความในประมวลรัษฎากร ว่าด้วยการยกเว้นรัษฎากร: มาตรการยกเว้นภาษีเงินได้นิติบุคคลสำหรับค่าใช้จ่ายด้านการวิจัยและพัฒนาเทคโนโลยีและนวัตกรรม (The secretary of the cabinet, the draft Royal Decree issued under revenue code on corporate income tax exemption measure for the expenditures paid for research and development of technology and innovation), <http://www.cabinet.soc.go.th/soc/Program2-3.jsp?top_ serl=99315063>, September 9, 2015

สำนักงานพัฒนาวิทยาศาสตร์และเทคโนโลยีแห่งชาติ, "การขอรับรองโครงการวิจัยและพัฒนาเทคโนโลยีเพื่อขอยกเว้นภาษีเงินได้นิติบุคคลสำหรับรายจ่ายที่ได้จ่ายไปเพื่อทำการวิจัยและพัฒนาเทคโนโลยี (National Science and Technology Development Agency, "R&D Project Approval for Income Tax exemption for expenses paid out as R&D expenditures), <http://www.nstda.or.th/rdc/index.php/aboutrdp>, September 9,2015

สำนักงานพัฒนาวิทยาศาสตร์และเทคโนโลยีแห่งชาติ, "งานกระตุ้นการวิจัยและพัฒนาภาคเอกชน" (National Science and Technology Development Agency (NSTDA), Encouraging R&D work for Private Sector), <http://www.nstda.or.th/rdc/>, September 9, 2015

4. Other Materials

Arthit Satthavorasit, "*Corporate Income Tax Law*" , Class material of Master of Law Programme in Business Laws, Faculty of law, Thammasat University ,January 2014

Klaus Schwab, "*The Global Competitiveness Report2014–2015*", World Economic Forum 2014

สมเกียรติ ตั้งกิจวานิชย์. สัมภาษณ์โดยณัฏฐา โกมลวาทิน,รายการคิดยกกำลังสอง, ไทยพีบีเอส, 23 สิงหาคม 2556 (Somkiat Tangkitvanich, Interview by Nattha Komolvadhin, Kid yok kum lung 2, the Thai PBS, August 23, 2013)

สำนักงานพัฒนาวิทยาศาสตร์และเทคโนโลยีแห่งชาติ (สวทช), "เอกสารประกอบการสัมมนาวันที่ 6 กันยายน 2556 เรื่อง การยื่นขอการรับรองโครงการวิจัยและพัฒนาเทคโนโลยีเพื่อขอยกเว้นภาษี 200%", งานกระตุ้นการวิจัยและพัฒนาภาคเอกชน (National Science and Technology Development Agency

(NSTDA), “Seminar Material on 6 September 2556: Application for R&D Project Approval for 200% Tax Exemption”, Encouraging R&D work for Private Sector).

สำนักงานพัฒนาวิทยาศาสตร์และเทคโนโลยีแห่งชาติ (สวทช), แนวทางการทำงาน G-TMC-RDP-02: เรื่อง หลักเกณฑ์และแนวปฏิบัติการพิจารณารับรองโครงการวิจัยและพัฒนาเทคโนโลยี”, งานกระตุ้นการวิจัยและพัฒนาภาคเอกชน (National Science and Technology Development Agency (NSTDA), “Work Manual No. G-TMC-RDP-02: The Criteria and Processes for Approving Research and Development Project”, Encouraging R&D work for Private Sector)

APPENDICES

APPENDIX A
THE ROYAL ISSUED UNDER THE REVENUE CODE REGARDING REDUCTION AND EXEMPTION FROM REVENUE TAXES (NO. 598) B.E. 2559

Royal Decree

issued under the Revenue Code

Regarding Reduction and Exemption from Revenue Taxes (No. 598)

B.E. 2559

BHUMIBOL ADULYADEJ P.R.

Given on the 12th day of October B.E. 2559

Being the 71th Year of the Present Reign

By Royal Command of His Most Excellent Majesty King Bhumibol Adulyadej, it is hereby proclaimed that:

Whereas it is deemed proper to improve on the exemption of income tax for companies or partnerships incurring expenses on research and development on technology and innovation,

Be it, therefore, enacted a Royal Decree by the King's Most Excellent Majesty, in exercise of the power under Section 22 of the Constitution of the Kingdom of Thailand (Interim Edition) B.E. 2557, and Section 3(1) of the Revenue Code as amended by the Revenue Code Amendment Act (No.10) B.E. 2496 as follows:

Section 1

This Royal Decree is called the "Royal Decree Issued under the Revenue Code regarding Exemption from Revenue Taxes (No. 598), B.E. 2559"

Section 2

This Royal Decree shall come into force on and from the date following the date of its publication in the Government Gazette.

Section 3

The Royal Decree Issued under the Revenue Code regarding Exemption from Revenue Taxes (No. 297), B.E. 2539 shall be abolished.

Section 4

Income tax shall be exempted under Division 3, Chapter 3, Title 2 of the Revenue Code to any companies or partnerships, for the income of any companies or partnerships amounting to 100% of the expenses incurred in the R&D of technology and innovation to private or public agencies as announced by the Director-General.

The exemption granted in the first paragraph shall follow the guidelines, the processes, and the conditions as published in the Government Gazette.

Section 5

Income tax shall be also exempted under Division 3, Chapter 3, Title 2 of the Revenue Code to any companies or partnerships, for the income of any companies or partnerships amounting to 100% of the expenses incurred in the research and development of technology and innovation from 1 January 2015 to 31 December 2019. This is in addition to the tax exemption on Income Tax as prescribed under Section 4, however once combined, the amount of tax exemption must not exceed the portion of corporate income to be calculated in the Net Profit calculation under the same accounting period as follow:

(1) 60 per cent for the income portion not exceeding 50 million Baht;

(2) 9 per cent for the income portion exceeding 50 million Baht but not exceeding 200 million Baht;

(3) 6 per cent for the income portion exceeding 200 million Baht.

Section 6

The companies or partnerships granted with tax exemption on income tax for expenses incurred in the research and development of technology and innovation prescribed in this Royal Decree shall apply for additional tax exemption on corporate income tax for investment promotion on such expenses as stated in the Investment Promotion Act neither in whole nor in part.

Section 7

The Minister of Finance shall have the care and charge of this Royal Decree.

Countersigned

General Prayuth Chan-Ocha

Prime Minister

Remark:

The justification on issuance of this Royal Decree is in support of the government's policy to promote investments on research and development on technology and innovation from the private sector, which will have a direct impact on economic development and will help uplifting the country's competitive capabilities. It is deemed appropriate to amend the guidelines on tax exemption on income tax for companies or partnerships in the case where expenses are incurred on research and development on technology as stated in The Royal Decree Issued under the Revenue Code regarding Exemption from Revenue Taxes (No. 297), B.E. 2539 to promote and incentivize the private sector to initiate more research and development activities on technology and innovation by public or private entities, thus, the justification for the issuance of this Royal Decree.

APPENDIX B
NOTIFICATION OF THE MINISTRY OF FINANCE ON INCOME TAX (NO. 391)

Re: Establishing the Criteria and Processes for Income Tax Exemption under Innovation and Technology Research and Development Expenses

Notification of the Ministry of Finance

On Income Tax (No. 391)
Re: Establishing the Criteria and Processes for Income Tax Exemption under Innovation and Technology Research and Development Expenses

By virtue of Section 4 of the Decree issued in 2016 under the Revenue Code regarding Tax Exemption (No. 598), the Minister of Finance has established the criteria, processes, and conditions for the Exemption of Income Tax for Company and Juristic Partnership on expenses concerning innovation and technology research and development as such:

1) Companies or partnerships that wish to exercise the right to Income Tax Exemption under the Decree issued in 2016 under the Revenue Code regarding Tax Exemption (No. 598) must show to have expenses on innovation and technology research and development paid to the government sector or the public sector declared by the Director-General of Revenue Department.
2) Research and Development work on Innovation and Technology by the government sector or the public sector mentioned in 1) must possess the following characteristics:
    a. The Research and Development work is creative by nature, conducted under systematic procedures, with the goal of product development or development of new production process; the research and development work involved is innovative and is different from that of other activities, involving the application of science and technology to solve various problems. The different types of research and development work are as follow:
        i. Basic Research – a theoretical study or research in a laboratory in search for new knowledge without the development of a product or service

ii. Applied Research – a study in search of new knowledge with the purpose or goal of applying the results obtained from the research into practice or to seek new alternatives to obtain the desired goal

iii. Experimental Development Research – a systematic study utilizing known knowledge and information to create new resources, tools, products, processes, systems, or services, or to develop and improve on existing processes; however, experimental development research does not include natural changes or changes that typically occur during the product life cycle, or the life cycle of concurring production process, service, or business procedure, even if such changes may result in development progress

b. The innovation involves applying scientific knowledge and technology to create new, innovative product or process, which can be classified into various types of innovation as such:

i. Product Innovation – applying to good use new product and service, or product and service that has been highly improved; this type of innovation includes any clearly visible changes and improvements on physical and technical properties, on compositions, materials used, including software that are user-friendly, easily applicable to various usage

ii. Process Innovation – involves clearly improved production process or distribution process, including technical changes, changes in equipment or software used

3) Companies or partnerships that wish to exercise the right to Income Tax Exemption under the Decree issued in 2016 under the Revenue Code regarding Tax Exemption (No. 598) must submit an application for the project involving the research and development on innovation and technology to the National Science and Technology Development Agency (NSTDA), or any other organizations determined by the Minister to approve that the project submitted is either a basic research, an applied research, an experimental

development research, a product innovation, or a process innovation. Only when the project is approved can the project be considered a Research and Development on Innovation and Technology Project which is either a basic research, an applied research, an experimental development research, a product innovation, or a process innovation.

4) Companies or partnerships can apply for tax exemption on Income Tax or Corporate Tax for any expenses incurred on the research and development work on innovation and technology without the approval mentioned in 3) only by these conditions:
    a. The value for the research and development project does not exceed 3 million baht
    b. The companies or partnerships has conducted past research and development projects on innovation and technology approved by NSTDA before
    c. The processes of the research and development on innovation and technology conducted by the companies or partnerships has been evaluated and approved the NSTDA or any other organizations determined by the Minister
    d. The companies or partnerships has submitted an expense form for the purpose of research and development on innovation and technology, and other documents with the details of the expenses incurred for the research and development on innovation and technology, with all required details as attached to this Notification together with the Corporate Income Tax filing
    e. The companies or partnerships has provided a full report with the details of the research and development on innovation and technology, including a memoir of the research procedures, the result, and the research paper for future reference (if applicable)
5) This Notification is in effect from January 1, 2015 onward

APPENDIX C
NOTIFICATION BY DIRECTOR-GENERAL OF REVENUE DEPARTMENT

Re: Establishing the Criteria and Processes for the Application for Research and Development on Innovation and Technology

Notification by Director-General of Revenue Department

Re: Establishing the Criteria and Processes for the Application for Research and Development on Innovation and Technology

By virtue of Section 4 of the Decree issued in 2016 under the Revenue Code regarding Tax Exemption (No. 598), the Director-General of Revenue Department has established the criteria and processes for the application of research and development on innovation and technology as such:

1) The public or private sector who wishes to conduct a research and development task on innovation and technology by Section 4 of the Decree issued in 2016 under the Revenue Code regarding Tax Exemption (No. 598) must submit an application for research and development on innovation and technology to the Director-General of Revenue Department with reference to the Application Form for Research and Development on Innovation and Technology attached to this Notification by submitting the form to the Large Business Tax Administration Office (LTO), Revenue Department or to the local Revenue Department Office closest to the respective office location the public or private sector in consideration
2) The public or private sector in 1) must be:
    a. A Ministry or government departments in general, or a state-owned enterprise by the Law on the Establishment of State-Owned Enterprise, including business organizations owned by the government that does not hold the status of an enterprise
    b. An individual, partnership, group of persons that is not a legal entity, other legal entities, companies or partnerships by Section 39 of the Revenue Code

    Restricted to only those who conduct research and development tasks in Thailand on innovation and technology.
3) The public or private sector in 2) must submit the application for research and development on innovation and technology by presenting the complete list with attached documents as follow:
    a. A copy of the Organization Registration Letter and Objective in the case of a public organization, with the exemption of those being a ministry or government departments in general
    b. A copy of the Registration Letter for the companies or partnerships, Memorandum and Articles of Associations (in the case of a legal entity)
    c. A copy of the House Registration Letter, National Identity Card (in the case of an individual)

d. The list of names of the researchers involved, with an education background of no less than a Bachelor Degree in the applicable field of study to the research and development task conducted on innovation and technology, including a full-detailed resume, and a copy of the certification of educational background (separating full-time researchers and contract researchers)
e. A copy of the Value-Added Tax Registration Letter (if applicable)
f. A copy of the Application for Value-Added Tax Registration Letter (if applicable)
g. A copy of the Report on the Changes to Value-Added Tax Registration Letter (if applicable)
h. A receipt letter which at least contains the message under Section 105 bis of the Revenue Code with the message “Is responsible for conducting the research no. .... by the Director-General”, and the message “The type of research is....”
i. Details on the equipment and tools used in the research and development of innovation and technology (if applicable)
j. A short summary of the business conduct at present
k. A project plan for the conduct of the research and development on innovation and technology

4) The public or private sector approved to conduct the research and development on innovation and technology will have the right to conduct the research and development task on innovation and technology from hence an officer of the Revenue Department has accepted the Application for Research and Development on Innovation and Technology has stated in 1)
5) In the case where the person(s) approved to conduct the research and development on innovation and technology in 2) a. which is a company or partnership paying tax on Income Tax charged on the actual net profits of the business involving research and development tasks on innovation and technology in addition to other business activities, the company or partnership must calculate the actual net loss and profit separately for each activity, but in calculating the net profit for Corporate Income Tax, the net loss and profit of both activities should be combined.
6) In the case of a public sector in 2) b. approved to conduct research and development on innovation and technology, it should be clearly stated in the memorandum and agreement that the project is a research and development on innovation and technology as stated in the Notification by the Ministry of Finance on Income Tax (no. 391) Re: Establishing the Criteria and Processes for Income Tax Exemption under Innovation and Technology Research and Development Expenses issued on March 25, 2016

7) The public or private sector approved by the Director-General of Revenue Department to conduct research and development task on innovation and technology for any person(s) must issue a Receipt Letter under Section 105 bis of the Revenue Code as follow:
    a. In the case where the research and development on innovation and technology is conducted in service of another person, a Receipt Letter should be issued under the name of the organization approved by the Director-General of Revenue Department, with a separate receipt from that of other activities
    b. In the case where the research and development on innovation and technology is conducted for own use, a Receipt Letter should be issued to self as if conducting the service for another person(s) as in a. without issuing a Tax Invoice
8) An application to conduct research and development on technology that has been submitted by the Notification of the Revenue Department on the Application of Research and Development on Technology for Public or Private Sector conducting Research and Development Service, issued on September 5, 2002, which has been amended by the Notification of the Revenue Department on the Application of Research and Development on Technology for Public or Private Sector conducting Research and Development Service, issued on December 25, 2002, and is still in consideration, can be considered mutadis mutandis as an Application of Research and Development on Innovation and Technology. If in any case, the documents submission is incomplete as per this Notification, the officer of the Revenue Department in charge can issue a request to the public or private sector to submit additional documents as needed.

APPENDIX D

SINGAPORE INCOME TAX ACT

(CHAPTER 134)

Section 14D

Section14DA

Section 14E

SINGAPORE INCOME TAX ACT 1948

Expenditure on research and development

14D.—

(1) For the purpose of ascertaining the income of any person carrying on any trade or business and subject to Subsection (4), the following expenditure incurred (other than any amount which is allowable as a deduction under section 14) by that person shall be allowed as a deduction:

(*a*) expenditure incurred on research and development undertaken directly by him and related to that trade or business (except to the extent that it is capital expenditure on plant, machinery, land or buildings or on alterations, additions or extensions to buildings or in the acquisition of rights in or arising out of research and development);

(*aa*) expenditure incurred during the basis period for any year of assessment between the year of assessment 2009 and the year of assessment 2025 (both years inclusive) on research and development undertaken in Singapore directly by him and not related to that trade or business (except to the extent that it is capital expenditure on plant, machinery, land or buildings or on alterations, additions or extensions to buildings or in the acquisition of rights in or arising out of research and development);

(*b*) payments made by that person to a research and development organisation for undertaking on his behalf in Singapore research and development related to that trade or business;

(*ba*) payments made by that person to a research and development organisation for undertaking on his behalf, partly in Singapore and partly outside Singapore, research and development related to that trade or business;

(*c*) payments made during the basis period for any year of assessment between the year of assessment 2009 and the year of assessment 2025 (both years inclusive) by that person to a research and development organisation for undertaking on his behalf in Singapore research and development not related to that trade or business;

(*d*) payments made by that person to a research and development organisation for undertaking on his behalf outside Singapore research and development related to that trade or business;

(*e*)

payments made by that person under any cost-sharing agreement during the basis period for the year of assessment 2012 or a subsequent year of assessment, in respect of research and development that is related to that trade or business (excluding any payment made by him for the right to become a party to the cost-sharing agreement), regardless of who undertakes the research and development so long as it is undertaken wholly or partly for himself or on his behalf; and

(*f*) payments made by that person during the basis period for any year of assessment between the year of assessment 2012 and the year of assessment 2025 (both years inclusive), under any cost-sharing agreement in respect of research and development that is undertaken in Singapore and is not related to that trade or business (excluding any payment made by him for the right to become a party to the cost-sharing agreement), regardless of who undertakes the research and development so long as it is undertaken wholly or partly for himself or on his behalf.

(1A) The expenditure or payment referred to in subsection (1) shall not include any such expenditure or payment to the extent that it is or is to be subsidised by grants or subsidies from the Government or a statutory board.

(2) For the purposes of this section, any expenditure incurred by a person prior to the commencement of his trade or business shall be deemed to have been incurred by that person on the first day on which he carries on that trade or business.

(3) For the purposes of subsection (1)(*ba*) or (*d*), a claim for deduction shall be allowed to a person only if —

(*a*) there is an undertaking by the person that any benefit which may arise from the conduct of the research and development shall accrue to the person; and

(*b*) the claim is made by the person in such manner and subject to such conditions as the Comptroller may require.

(3A) For the purposes of subsection (1)(*e*) in respect of research and development that is undertaken wholly or partly outside Singapore, a claim for deduction shall be allowed to a person only if —

(*a*) there is an undertaking by the person that any benefit which may arise from the conduct of the research and development shall accrue, wholly or partly, to the person; and

(*b*) the claim is made by the person in such manner and subject to such conditions as the Comptroller may require.

(4) The deduction of the expenditure and payments referred to in subsection (1)(*aa*), (*c*) and (*f*) shall be made in accordance with the following provisions:

(*a*) if the person derives from the trade or business carried on by him both normal income and concessionary income, the amount of the expenditure or payments (after deducting any amount in respect of which an election for a cash payout has been made under section 37I) shall so far as possible be deducted against the normal income, and any remaining balance of the amount shall be treated as part of the unabsorbed losses in respect of the normal income to be deducted against the concessionary income in accordance with section 37B;

(*b*) if the concessionary income referred to in paragraph (*a*) is subject to tax at 2 or more concessionary rates of tax, the deduction under section 37B of the remaining balance referred to in that paragraph shall so far as possible be made against the part of the concessionary income that is subject to tax at the higher or highest concessionary rate of tax, and the deduction under section 37B of any remaining balance shall so far as possible be made against the part of the concessionary income that is subject to tax at the lower or next lowest concessionary rate of tax, and so on;

(*c*) if the person derives from the trade or business only concessionary income which is subject to tax at a single concessionary rate of tax, a specified amount of the expenditure or payments shall be deducted against the concessionary income;

(*d*) if the person derives from the trade or business only concessionary income which is subject to tax at 2 or more concessionary rates of tax, a specified amount of the expenditure or payments shall so far as possible be deducted against the part of the concessionary income that is subject to the higher or highest concessionary rate of tax, and any remaining balance of the specified amount shall be treated as part of the unabsorbed losses in respect of that part of the concessionary income that is subject to the higher or highest concessionary rate of tax, to be deducted in accordance with section 37B against the rest of the concessionary income;

(*e*) if the rest of the concessionary income referred to in paragraph (*d*) is subject to tax at 2 or more concessionary rates of tax, then paragraph (*b*) shall apply, with the necessary modifications, to the last-mentioned deduction in paragraph (*d*).

(4A) Where a person to whom deductions have been allowed for payments referred to in subsection (1)(*e*) or (*f*) becomes entitled to any royalty or other payments (in one lump sum or otherwise) for the use of or right to use any technology or know-how developed from the research and development activities conducted under the cost-sharing agreement, such royalty or payments shall be deemed to be income of that person that is derived from Singapore for the year of assessment which relates to the basis period in which he becomes entitled to the royalty or payments.

(5) In this section —

"concessionary income" means income that is subject to tax at a concessionary rate of tax;

"concessionary rate of tax" has the same meaning as in section 14C;

"cost-sharing agreement" means any agreement or arrangement made by 2 or more persons to share the expenditure of research and development activities to be carried out under the agreement or arrangement;

"normal income" means income that is subject to tax at the rate of tax specified in section 43(1)(*a*);

"specified amount", in relation to any expenditure or payments, means an amount computed in accordance with the formula

$$A \times \frac{B}{C},$$

where A is the amount of the expenditure or payments (after deducting any amount in respect of which an election for a cash payout has been made under section 37I);

B is the rate of tax specified in section 43(1)(*a*); and

C is —

(*a*) in a case where the concessionary income derived by the person from the trade or business carried on by him is subject to tax at a single concessionary rate of tax, that rate; or

(*b*) in a case where the concessionary income derived by the person from the trade or business carried on by him is subject to tax at 2 or more concessionary rates of tax, the higher or highest of those rates.

Enhanced deduction for qualifying expenditure on research and development

14DA.—

(1) Subject to this section, for the purpose of ascertaining the income of a person carrying on any trade or business during the basis period for any year of assessment between the year of assessment 2009 and the year of assessment 2025 (both years inclusive), there shall be allowed in respect of all his trades and businesses, in addition to the deductions allowed under section 14D, a deduction for expenditure or payments for research and development undertaken by him, of an amount computed in accordance with the following formula:

$$(U + V) \times 50\%,$$

where U is the amount of qualifying expenditure incurred during the basis period on any local research and development undertaken directly by the person, including on that part undertaken in Singapore of any mixed research and development undertaken directly by that person, but excluding any capital expenditure on plant, machinery, land or buildings or on alterations, additions or extensions to buildings or in the acquisition of rights in or arising out of research and development; and

V is the aggregate of the following:

(*a*) the amount referred to in subsection (2A) of payments made during the basis period by the person to a research and development organisation for undertaking local research and development on his behalf, including for that part undertaken in Singapore of any mixed research and development that is undertaken by a research and development organisation on his behalf; and

(*b*) the amount referred to in subsection (2A) of payments made during the basis period (being the basis period for the year of

assessment 2012 or a subsequent year of assessment) by the person under a cost-sharing agreement (excluding any payment made by him for the right to become a party to the cost-sharing agreement) —

(i) for any local research and development; or

(ii) for that part of any mixed research and development that is undertaken in Singapore,

regardless of who undertakes the research and development so long as it is undertaken wholly or partly for himself or on his behalf.

(2) Subject to this section and section 37IC, for the purpose of ascertaining the income of a person carrying on any trade or business during the basis period for any year of assessment between the year of assessment 2011 and the year of assessment 2018 (both years inclusive), there shall be allowed in respect of all his trades and businesses, in addition to the deductions allowed under subsection (1) and section 14D, a deduction for expenditure or payments for research and development undertaken by him, of —

(*a*) an amount computed in accordance with the formula

$$\left[(U+V)\times 250\%\right]+\left[(W+X)\times 300\%\right]; \text{ or}$$

(*b*) if the aggregate of U, V, W and X exceeds the specified amount for the year of assessment, an amount computed in accordance with the formula

$$(Y\times 250\%)+(Z\times 300\%),$$

where U and V have the same meanings as in subsection (1);

W is the amount of qualifying expenditure incurred during the basis period on any foreign research and development undertaken directly by the person, including on that part undertaken outside Singapore of any mixed research and development

undertaken directly by that person, but excluding any capital expenditure on plant, machinery, land or buildings or on alterations, additions or extensions to buildings or in the acquisition of rights in or arising out of research and development;

X is the aggregate of the following:

(*a*) the amount referred to in subsection (2A) of payments made during the basis period by the person to a research and development organisation for undertaking any foreign research and development on his behalf, including for that part undertaken outside Singapore of any mixed research and development that is undertaken by a research and development organisation on his behalf; and

(*b*) the amount referred to in subsection (2A) of payments made during the basis period (being the basis period for any year of assessment between the year of assessment 2012 and the year of assessment 2018 (both years inclusive)) by the person under a cost-sharing agreement (excluding any payment made by him for the right to become a party to the cost-sharing agreement) —

(i) for any foreign research and development; or

(ii) for that part of any mixed research and development that is undertaken outside Singapore,

regardless of who undertakes the research and development so long as it

is undertaken wholly or partly for himself or on his behalf;

Y — is the whole or any part of the sum of U and V which the person has elected for inclusion in the computation of the deduction under this paragraph, which when aggregated with Z does not exceed the specified amount; and

Z — is the whole or any part of the sum of W and X which the person has elected for inclusion in the computation of the deduction under this paragraph, which when aggregated with Y does not exceed the specified amount.

(2A) The amount of any of the payments in the definitions of V and X in subsections (1) and (2) is —

(*a*) if more than 60% of all the payments made during the basis period to the research and development organisation or under the cost-sharing agreement to which the definition applies are qualifying expenditure, the actual amount of the qualifying expenditure; or

(*b*) in all other cases, 60% of all such payments,

and where there is more than one research and development organisation or cost-sharing agreement, the aggregate of all the amounts computed in this manner of the payments to every organisation or under every agreement.

(2B) In subsections (1) and (2) —

"foreign research and development" means research and development that is undertaken outside Singapore, and that is related to the trade or business of the first-mentioned person in subsection (1);

"local research and development" means research and development that is undertaken in Singapore;

"mixed research and development" means research and development that is undertaken partly in Singapore and partly outside Singapore, and that is related to the trade or business of the first-mentioned person in subsection (1) or (2), as the case may be.

(3) The election under subsection (2)(*b*) shall be made at the time of lodgment of the return of income for the year of assessment or within such further time as the Comptroller may, in his discretion, allow.

(4) The specified amount referred to in subsection (2)(*b*) is —

(*a*) for the year of assessment 2011, $800,000;

(*b*)
for the year of assessment 2012, the balance after deducting from $800,000 the subsection (2) amount for the year of assessment 2011;

(*c*)
for the year of assessment 2013, $1,200,000;

(*d*)
for the year of assessment 2014, the balance after deducting from $1,200,000 the subsection (2) amount for the year of assessment 2013;

(*e*)
for the year of assessment 2015, the balance after deducting from $1,200,000 the subsection (2) amount for the year of assessment 2013 and the subsection (2) amount for the year of assessment 2014;

(*f*)
for the year of assessment 2016, $1,200,000;

(*g*)
for the year of assessment 2017, the balance after deducting from $1,200,000 the subsection (2) amount for the year of assessment 2016; or

(*h*)
for the year of assessment 2018, the balance after deducting from $1,200,000 the subsection (2) amount for the year of assessment 2016 and the subsection (2) amount for the year of assessment 2017.

(5) In subsection (4) —

(*a*)
the amount under paragraph (*a*) of that subsection shall be substituted with "$400,000" if the person does not carry on any trade or business during the basis period for the year of assessment 2012;

(*b*)
the balance under paragraph (*b*) of that subsection shall be substituted with "$400,000" if the person does not carry on any trade or business during the basis period for the year of assessment 2011;

(*c*)
if the person does not carry on any trade or business during the basis period for any one year of assessment between the year of assessment 2013 and the year of assessment 2015 (both years inclusive), the references to "$1,200,000" in the paragraphs of that subsection applicable to the other 2 years of assessment shall be substituted with "$800,000";

(*d*)
if the person does not carry on any trade or business during the basis periods for any 2 years of assessment between the year of assessment 2013 and the year of assessment 2015 (both years inclusive), the reference to "$1,200,000" in the paragraph of that subsection applicable to the remaining year of assessment shall be substituted with "$400,000";

(*da*)

if the person does not carry on any trade or business during the basis period for any one year of assessment between the years of assessment 2016 and 2018 (both years inclusive), the references to "$1,200,000" in the paragraphs of that subsection applicable to the other 2 years of assessment shall be substituted with "$800,000";

(*db*)
if the person does not carry on any trade or business during the basis periods for any 2 years of assessment between the years of assessment 2016 and 2018 (both years inclusive), the reference to "$1,200,000" in the paragraph of that subsection applicable to the remaining year of assessment shall be substituted with "$400,000";

(*e*)
for the avoidance of doubt, no deduction shall be made from the substituted amount in subsection (4)(*d*) or (*e*) of the subsection (2) amount for the year of assessment 2013 if the person does not carry on any trade or business during the basis period for that year of assessment, and no deduction shall be made from the substituted amount in subsection (4)(*e*) of the subsection (2) amount for the year of assessment 2014 if the person does not carry on any trade or business during the basis period for that year of assessment; and

(*f*)
for the avoidance of doubt, no deduction shall be made from the substituted amount in subsection (4)(*g*) or (*h*) of the subsection (2) amount for the year of assessment 2016 if the person does not carry on any trade or business during the basis period for that year of assessment, and no deduction shall be made from the substituted amount in subsection (4)(*h*) of the subsection (2) amount for the year of assessment 2017 if the person does not carry on any trade or business during the basis period for that year of assessment.

(6) For the purposes of subsections (4) and (5), "subsection (2) amount", in relation to a year of assessment, means —

(*a*)
if the deduction allowed under subsection (2) for that year of assessment is the amount referred to in subsection (2)(*a*), the aggregate of U, V, W and X referred to in that subsection; or

(*b*)
if the deduction allowed under subsection (2) for that year of assessment is the amount referred to in subsection (2)(*b*), the aggregate of Y and Z referred to in that subsection.

(7) For the purpose of subsection (2)(*b*), where an individual carrying on a trade or business through 2 or more firms (excluding partnerships) has, during the basis period for any year of assessment between the year of assessment 2011 and the year of assessment 2018 (both years inclusive), incurred qualifying expenditure or made payments in respect of such firms entitling him to a deduction under subsection (2), the deduction that may be allowed to him for

those expenditure or payments in respect of all his trades and businesses shall not exceed the amount computed in accordance with subsection (2)(*b*) for that year of assessment.

(8) For the purpose of subsection (2)(*b*), where a partnership carrying on a trade or business has, during the basis period for any year of assessment between the year of assessment 2011 and the year of assessment 2018 (both years inclusive), incurred qualifying expenditure or made payments entitling the partners of the partnership to a deduction under subsection (2), the aggregate of the deductions that may be allowed to all the partners of the partnership for the expenditure or payments in respect of all the trades and businesses of the partnership shall not exceed the amount computed in accordance with subsection (2)(*b*) for that year of assessment.

(9) Section 14D(4) and (5) shall apply in relation to the deduction for expenditure and payments for which a deduction is allowed under subsection (1) or (2) for research and development that is not related to the trade or business carried on by the person, as they apply in relation to the deduction for the expenditure and payments referred to in section 14D(1)(*aa*), (*c*) and (*f*), subject to the following modifications:

(*a*) a reference to the amount of the expenditure or payments (after deducting any amount in respect of which an election for a cash payout has been made under section 37I) in section 14D(4) is a reference to the remaining amount of the deduction under subsection (1) or (2) (as the case may be) after deducting the amount of the deduction under that subsection that corresponds to the qualifying expenditure or payments in respect of which an election for a cash payout has been made under section 37I;

(*b*) a reference to the specified amount of the expenditure or payments is a reference to an amount computed in accordance with the formula

$$A \times \frac{B}{C},$$

where

A is the remaining amount of the deduction under subsection (1) or (2) (as the case may be) after deducting the amount of the deduction under that subsection that corresponds to the qualifying expenditure or payments in respect of which an election for a cash payout has been made under section 37I;

B is the rate of tax specified in section 43(1)(*a*); and

C is —

(i) in a case where the concessionary income derived by the person from the trade or business carried on by him is subject to tax at a single concessionary rate of tax, that rate; or

(ii) in a case where the concessionary income derived by the person from the trade or business carried on by him is subject to tax at 2 or more concessionary rates of tax, the higher or highest of those rates.

(10) No deduction shall be allowed to a company under subsection (2) for any year of assessment if a deduction for any expenditure has been allowed under section 37G for that year of assessment.

(11) In this section —

"consumables" means any materials or items used in the research and development which, upon such use, are consumed or transformed in such a manner that they are no longer useable in their original form, but does not include utilities;

"cost-sharing agreement" means any agreement or arrangement made by 2 or more persons to share the expenditure of research and development activities to be carried out under the agreement or arrangement;

"qualifying expenditure" means any expenditure attributable to the research and development that is incurred on —

(*a*) staff costs;

(*b*) consumables; or

(*c*) such other matter as the Minister may prescribe by regulations;

"staff costs" means any salary, wages and other benefits paid or granted in respect of employment (excluding director's fees), whether in money or otherwise, to any employee for carrying out the research and development, and includes —

(*a*) expenses incurred for training or certifying the employee for the purpose of carrying out the research and development; and

(*b*) such other expenses as may be prescribed.

(12) In this section —

(*a*) a reference to a person undertaking research and development includes —

(i)

a reference to a research and development organisation undertaking research and development on his behalf; and

(ii)

for any year of assessment between the year of assessment 2012 and the year of assessment 2025 (both years inclusive), a reference to any person undertaking research and development under a cost-sharing agreement of which the first-mentioned person is a party, so long as the research and development is undertaken wholly or partly for the first-mentioned person or on his behalf; and

(*b*)

a reference to any expenditure or payment excludes any such expenditure or payment to the extent that it is or is to be subsidised by grants or subsidies from the Government or a statutory board.

Further deduction for expenditure on research and development project

14E.—

(1) Subject to this section, where the Comptroller is satisfied that —

(*a*) a person carrying on any trade or business has incurred expenditure in undertaking directly by himself, or in paying a research and development organisation to undertake on his behalf, an approved research and development project in Singapore which is related to that trade or business;

(*aa*) a person carrying on any trade or business has incurred during the basis period for any year of assessment between the year of assessment 2009 and the year of assessment 2020 (both years inclusive) expenditure in undertaking directly by himself, or in paying a research and development organisation to undertake on his behalf, an approved research and development project in Singapore which is not related to that trade or business; or

(*b*) a research and development organisation has incurred expenditure in undertaking an approved research and development project in Singapore and no deduction under this section has been allowed to another person in respect of any expenditure for that project or for another project of which that project forms a part,

there shall be allowed to that person or research and development organisation a further deduction of the amount of such expenditure in addition to the deduction allowed under section 14, 14D or 14DA, as the case may be.

(2) The Minister or such person as he may appoint may —

(*a*) specify the maximum amount of the expenditure (or any item thereof) incurred to be allowed under subsection (1);

(*b*) impose such conditions as he thinks fit when approving the research and development project; and

(*c*) specify the period or periods for which deduction is to be allowed under this section.

(3) No deduction shall be allowed under this section in respect of any expenditure which is not allowed under section 14 or 14D.

(3A) The total amount of deduction allowed under this section and sections 14, 14D and 14DA in respect of any expenditure incurred by a person for an approved research and development project in Singapore shall not exceed 200% of such expenditure incurred.

(3AA) No deduction shall be allowed to any person under this section in respect of any expenditure for which a deduction has been allowed under section 14DA(2).

(3B) Section 14D(4) and (5) shall apply in relation to the deduction of the expenditure and payments referred to in subsection (1)(*aa*), as they apply in relation to the deduction of the expenditure and payments referred to in section 14D(1)(*aa*), (*c*) and (*f*), subject to the following modifications:

(*a*) a reference to the amount of the expenditure or payments is a reference to the amount of deduction that would have been allowed under this section for the expenditure or payments referred to in subsection (1)(*aa*) but for this subsection;

(*b*) a reference to a specified amount of the expenditure or payments is a reference to an amount computed in accordance with the following formula:

$$A \times \frac{B}{C},$$

where A is the amount of the deduction referred to in paragraph (*a*);

B is the rate of tax specified in section 43(1)(*a*); and

C is —

(i) in a case where the concessionary income (as defined in section 14D(5)) derived by the person from the trade or business carried on by him is subject to tax at a single concessionary rate of tax, that rate; or

(ii) in a case where the concessionary income derived by the person from the trade or business carried on by him is subject to tax at 2 or more concessionary rates of tax, the higher or highest of those rates.

(3C) No research and development project may be approved under this section after 31st March 2020.

(4) In this section, "approved" means approved by the Minister or such person as he may appoint.

APPENDIX E
MALAYSIA INCOME TAX ACT
(ACT 53)

Section 34A

Section 34B

Malaysia Income Tax Act B.E. 1967

Special deduction for research expenditure

Section 34A.

(1) Subject to this section, in ascertaining the adjusted income of a person from a business for the basis period for a year of assessment, a deduction shall be made, as specified in subsection (4), from the gross income from the business for that period in respect of expenditure, not being capital expenditure incurred on plant, machinery, fixtures, land, premises, buildings, structures or works of a permanent nature or on alterations, additions or extensions thereof or in the acquisition of any rights in or over any property, incurred by that person during that period on research—

(a) approved by the Minister; or

(b) undertaken by that person where that person is participating in industrial adjustment approved under section 31A of the Promotion of Investments Act 1986 [Act 327].

(2) The Minister in approving the research pursuant to paragraph (1)(a) may impose such conditions as he thinks fit or may specify the period or periods for the purpose of deduction under this section.

(3) A deduction for expenditure on research pursuant to paragraph (1)(b) shall be made in respect of expenditure incurred within ten years from the date of approval of industrial adjustment under section 31A of the Promotion of Investments Act 1986.

(4) The amount of deduction to be made under subsection (1) shall be twice the amount of expenditure, not being capital expenditure, referred to in that subsection:

Provided that where subsection (4A) applies, the amount of deduction to be made shall be the amount of expenditure incurred.

(4A) A pioneer company may, in a return of income for the year of assessment in which the expenditure referred to in subsection (1) had been incurred,

elect that the amount of that expenditure be deducted in the first basis period in respect of its post-pioneer business for a year of assessment.

(5) Where any deduction in respect of expenditure on research is made under this section, no deduction in respect of that expenditure shall be made under section 33 or 34.

(6) For the purposes of this section, the words “pioneer company” and “post-pioneer business” have the respective meanings assigned to them under the Promotion of Investments Act 1986.

Special deduction for contribution to an approved research institute or payment for use of services of an approved research institute or company

Section 34B.

(1) Subject to this section, in ascertaining the adjusted income of a person from a business for the basis period for a year of assessment, a deduction shall be made, as specified in subsection (2), from the gross income from the business for that period in respect of expenditure, not being capital expenditure, incurred by that person during that period in respect of—

(a) contribution in cash to an approved research institute;

(b) payment for the use of the services of an approved research institute or an approved research company; or (c) payment for the use of the services of a research and development company or a contract research and development company.

(2) The amount of deduction to be made under subsection (1) shall be twice the amount of expenditure, not being capital expenditure, referred to in that subsection:

Provided that no deduction in respect of that expenditure shall be made under this section to a person being a related company of a research and development company which has been given approval under subsection 27D(1) of the Promotion of Investments Act 1986 and whose period as prescribed under paragraph 29E(2)(b) of that Act has not ended.

(3) Where any deduction in respect of expenditure referred to in subsection (1) is made under this section, no deduction in respect of that expenditure shall be made under section 33, 34 or 34A.

(4) In this section—

(a) an “approved research institute” means an institute, including a company licensed under section 24 of the Companies Act 1965, approved by the Minister to mainly carry on research in an industry specified in the approval and to commercially exploit the benefit of such research thereof;

(b) an “approved research company” means a company, other than a company licensed under section 24 of the Companies Act 1965, approved by the Minister to mainly carry on research in an industry specified in the approval and to commercially exploit the benefit of such research thereof;

(c) a “contract research and development company”, a “related company” and a “research and development company” have the meaning assigned thereto in section 2 of the Promotion of Investments Act 1986.

BIOGRAPHY

Name	Mr. Nattapol Techaprasertporn
Date of Birth	January 5, 1987
Educational Attainment	2009: Bachelor of Laws, Thammasat University
	2011: Barrister-at-Law, The institute of Legal Education Thai Bar Association