

To: Professor Allison Christians and the Innovation Project Team

From: Shelly (Xiaolu) Li

Subject: Survey of the “Patent Box” Concept in Canada, the United States, the United Kingdom, and the European Union At-Large

Date: 27 July 2015

Introduction and Overview

The patent box is an innovation incentive enacted by deduction of the tax bills for qualifying companies.¹ The belief is that innovation is promoted by cutting the corporate tax rate on the profits from products and services derived from the intellectual property.² The patent box regime aims to reward those who engage in the commercial exploitation of research.³

The first country to develop the patent box was Ireland in 1973.⁴ Ireland’s patent box was then followed by implementation European or non-European countries like Belgium (2007), France (2000), Luxembourg (2008), Netherlands (2007), Spain (2008), Switzerland (2014), China (2008), and the UK (2013).⁵ Most nations adopted the patent box in the mid to the late 2000s because they felt the global competition in the innovation advantage had heated up so that they needed to do more to make their nations more attractive for innovation and business.⁶ Innovation is highly mobile around the world so more and more nations adopted the patent box and other innovation policies to boost R&D domestically.⁷

This report focuses on three countries: Canada, the United States of America, and the United Kingdom, as well as European Union.

In Canada, there is no patent box regime. However, many people suggested that the Canadian government adopt a patent box to encourage the further innovation in Canada. For example, the Chartered Professional Accountants of Canada regarded the patent box as a good strategy for capitalizing on the creativity of Canadians by transforming their knowledge into products and services in the global market to

¹ David Lewis, “An industry report on the Patent Box initiative and its impact on UK innovation”, Cambridge Design Partnership (June 2013), online:<

<http://www.marks-clerk.com/MarksClerk/media/MCMediaLib/PDF's/Reports/Marks-Clerk-Patent-Box-Report-2013.pdf?ext=.pdf>>.

² *Ibid* at 5.

³ *Ibid* at 5.

⁴ Ristea Luminita & Trandafir Adina, “Is Patent Box a Solution to Retain and Attract Innovative Businesses in EU? History, Concept and Further Development”, “Ovidius” University Annals, Economic Sciences Series Volume XIII, Issue 1(2013)

⁵ *Ibid* at 1462.

⁶ “10 Frequently Questions Asked About Patent Boxes”, The Information Technology & Innovation Fundation(October 2011).

⁷ *Ibid* at 15.

improve Canada's productivity record.⁸ Some hold the opposite opinion. Dan Herman, the exclusive directive of the Center for Digital Entrepreneurship and Economic, said that there was not enough evidence to show that the patent box had a positive effect on the innovation and the patent box regime may not be good to the small companies.⁹ Canada is discussed further in Section 1.

There is no patent box in the United States (US). In similar respects to Canada, people hold different opinions about the implementation of the patent box in the US. People such as Robert D. Atkinson, the president and founder of the Information Technology and Innovation Foundation (ITIF), said that the US Congress should establish new incentives like an investment tax credit for new machinery, equipment, and software investment, as well as a patent box to promote the economic competitiveness of the US.¹⁰ On the other hand, people like John D. McKinnon, a journalist with the *Wall Street*, said that the US lawmakers not only worried about loss of revenue but also concerned that transferring patents overseas would lead companies to transfer more research and high-end manufacturing jobs overseas.¹¹ The United States is discussed further in Section 2.

The patent box has existed in the United Kingdom since 2013. The UK patent box is about to change though. Recently, Germany and the UK agreed on a joint proposal for rules on preferential IP regimes that will lead to the closure of all existing regimes and create new entrants in June 2016, along with the abolition of the patent box by June 2021.¹² David Lewis, the technology business development manager in the Cambridge Design Partnership, claimed that the patent box had the potential to deliver significant benefits for the UK companies, exploiting the commercialization of the patented technology with some uncertainty in June 2013.¹³ On the other hand, there has been staunch opposition from people like David Quentin, the senior adviser to the

⁸ Canada, Chartered Professional Accountants of Canada, *2014 Pre-budget Consultation: A Submission to the House of Commons Standing Committee on Finance* (Ottawa: Parliament of Canada 2014),

online:<http://www.parl.gc.ca/Content/HOC/Committee/412/FINA/WebDoc/WD6615327/412_FINA_PBC2014_Briefs%5CCharteredProfessionalAccountantsOfCanada-e.pdf>.

⁹ Dan Herman, "Does Canada need to adopt patent box IP treatment", *Deep Centre*(11 February 2015), online: <<http://deepcentre.com/blog/does-canada-need-to-adopt-patent-box-ip-treatment>>.

¹⁰ US, Testimony of Robert D. Atkinson Before the Senate Finance Committee United States Senate (6 March 2012).

¹¹ John D. McKinnon, "Lawmakers Embrace Patent Tax Breaks: US Considering 'Patent Box' Approach Similar to U.K. in Piecemeal Approach to Reform", *The Wall Street Journal*(5 May 2015), online:<<http://www.wsj.com/articles/lawmakers-embrace-patent-tax-breaks-1430850214>>.

¹² HM Treasury, HMRC and The Rt Hon George Osborne MP, "Germany and UK agree joint proposal for rules on preferential IP regimes"(11 November 2014), 2010 to 2015 Conservative and Liberal Democrat Coalition Government, online:<<https://www.gov.uk/government/news/germany-and-uk-agree-joint-proposal-for-rules-on-preferential-ip-regimes>>.

¹³ David Lewis, "An industry report on the Patent Box initiative and its impact on UK innovation", Cambridge Design Partnership (June 2013), online:<<http://www.marks-clerk.com/MarksClerk/media/MCMediaLib/PDF's/Reports/Marks-Clerk-Patent-Box-Report-2013.pdf?ext=.pdf>>.

Tax Justice Network, along with Nicholas Shaxson, the author of *Treasure Islands*, who claimed that the UK patent box was a nasty, disingenuous and hypocritical in *Naked Capitalism* in October 2014.¹⁴ The United Kingdom is discussed further in Section 3.

The European Union (EU) claims that the patent box was created to facilitate tax avoidance rather than encourage economic activities in which the tax treatments were offered.¹⁵ Accordingly the European Commission has made statements indicating its intent to keep a close eye on the patent box in case it becomes a harmful tax competition. The EU is discussed further in Section 4.

1. Canada

1.1 Legal status of the patent box in Canada

There is no patent box regime in Canada.

1.2 Government official, government agency, and legislator commentary

Richard G. Monk, the president and chief executive officer of Msight Global Inc., and Russ Roberts, a senior vice president of Canadian Advanced Technology Alliance (CATA), supported the idea that Canada should consider implementation of a patent box.¹⁶ They spoke at the Senate Committee on National Finance in November 2012 and Russ explained the difference between “innovation box” and “patent box”; some countries only focused on the patents while others considered more kinds of intellectual property, causing the distinction between the two terms.¹⁷ Richard suggested that tax regimes like the patent box was a good measure to improve overall productivity of a country.¹⁸

Additionally, the House of Commons Standing Committee on Finance recommended that the federal government work on increasing the competitiveness of Canadian businesses through research, development, innovation, and commercialization in

¹⁴ David Quentin & Nicholas Shaxson, “The ‘Patent Box’ – Proof That the UK is a Rogue State in Corporate Tax”, *Naked Capitalism*(3 October 2014),
online:

<<http://www.nakedcapitalism.com/2014/10/david-quentin-nicholas-shaxson-patent-box-proof-uk-rogue-state-corporate-tax.html>>.

¹⁵ EC, Commission, Communication from the Commission to the European Parliament: A Fair and Efficient Corporate Tax System in the European Union: 5 Key Areas for Action (Brussels, 17 June 2015),
online:<

http://eur-lex.europa.eu/resource.html?uri=cellar:5e1fd1b0-15b7-11e5-a342-01aa75ed71a1.0003.03/D OC_1&format=HTML&lang=EN&parentUrn=CELEX:52015DC0302>.

¹⁶ Proceedings of the Standing Senate Committee on National Finance, “Topic: Part 1/Amendments to Foreign Affiliates Rule: Discussion Draft” (Ottawa, Parliament of Canada, November 2012),
online: <<http://www.parl.gc.ca/content/sen/committee/411%5CNFFN/30EV-49857-e.HTM>>.

¹⁷ *Ibid.*

¹⁸ *Ibid.*

October 2013.¹⁹ To achieve this, the committee said the government should encourage and support Canadian business to develop made-in-Canada solutions.²⁰ It went so far as to specifically name the patent box as a potential avenue for the government to foster a culture of innovation within the country and increase the competitiveness of Canadian businesses.²¹

Minister James Rajotte, a Conservative Caucus member in House of Commons, called a meeting to continue their pre-budget consultations 2013 in which the patent box was discussed in November 2013.²² In this meeting, Mr. Natan Aronshtam, a global managing director for Deloitte, said that Canada should consider the introduction of the patent box because he believed it would attract companies to hold their IP and make profits from their IP in Canada to get the preferential tax treatment.²³ Additionally, he noted that the patent box was not complicated in making its implementation and the use of the patent box was fairly simple.²⁴ He also believed that it would make more innovation and jobs around intellectual property, a prospect for which he advocated.²⁵

The Association of Equipment Manufacturers (AEM) suggested that Canada should adopt the patent box in the AEM's pre-Budget submission to the House of Commons Standing Committee on Finance in August 2014.²⁶ In the AEM's view, the patent box credit could incentivize companies to innovate and drive their intellectual products to market by providing lower tax rate.²⁷ In this way, a patent box could encourage companies to commercialize their innovative products once it has been researched and developed.²⁸ They also believed the patent box could prevent patents from being transferred internationally as it would provide a more attractive tax rate on these patents in case the companies were to move abroad.²⁹

In the House of Commons Standing Committee on Finance "Pre-budget Consultation 2014" in October 2014, some witnesses held the positive attitude on the patent box

¹⁹ House of Commons, Standing Committee on Finance, *Chapter Eight: Committee Recommendations* (16 October 2013),

online:<<http://www.parl.gc.ca/HousePublications/Publication.aspx?DocId=6830258&Language=E&Mode=1&Parl=41&Ses=2&File=351>>.

²⁰ *Ibid.*

²¹ *Ibid.*

²² *House of Commons Debates*, 41st Parl, 2nd Sess, No 005(7 November 2013) at 1305(Natan Aronshtam),

online:<<http://www.parl.gc.ca/HousePublications/Publication.aspx?DocId=6292526&Language=E&Mode=1>>.

²³ *Ibid.*

²⁴ *Ibid.*

²⁵ *Ibid.*

²⁶ Canada, Association of Equipment Manufacturers, *Pre-Budget Submission to the House of Commons Standing Committee on Finance*(Ottawa: Parliament of Canada, 6 August 2014), online:<http://www.parl.gc.ca/Content/HOC/Committee/412/FINA/WebDoc/WD6615327/412_FINA_PBC2014_Briefs%5CAssociationOfEquipmentManufacturers-e.pdf>.

²⁷ *Ibid* at 3.

²⁸ *Ibid* at 3.

²⁹ *Ibid* at 3.

and explained them to the senators.³⁰ Albert Baker from Deloitte said there were not many academic studies supporting the idea that a patent box was effective.³¹ There were only a few supportive facts showed that the patent box would make a difference in the innovation.³² Some companies made statements that they had either stayed in the particular country or moved and carried out more operations in a particular country which had a patent box.³³ For example, Starbucks complied with all Irish tax rules though Apple had not received any selective tax treatment from Irish authority back to June 2014.³⁴ Minister Mike Allen of the Conservative Caucus said that the patent box may favor larger companies as opposed to smaller companies after listening to Albert Baker but did not expand on his inquiry.³⁵

The Chartered Professional Accountants of Canada (CPA) recommended the adoption of the patent box in CPA's 2014 pre-budget consultation.³⁶ CPA regarded the patent box as a good strategy for capitalizing on the creativity of Canadians by transforming their knowledge into products and services in the global market to improve Canada's productivity record.³⁷ CPA also believed companies could benefit by paying lower rates on profits from commercializing their innovations.³⁸ CPA stated that Canada's tax rate should be competitive and that the object of the patent box was to encourage the R&D activities and the commercialization of intellectual property developed from R&D activities by domestic firms based on the studies of comparable regimes around the world.³⁹ They believed that Canadian business would benefit by paying lower tax to their profits made from commercializing their innovations.⁴⁰ This would, in their opinion, cause a ripple effect of high-value employment opportunities as companies increased in doing more research and exploiting their innovation in Canada.⁴¹

In August 2014, the Canadian Manufacturers and Exporters organization (CME)

³⁰ House of Commons, Standing Committee on Finance, "Pre-budget Consultations 2014", 41st Parl, 2nd Sess, No 051(27 October 2014) at 1750(Mike Allen),
online:<<http://www.parl.gc.ca/HousePublications/Publication.aspx?DocId=6742252&Language=E&Mode=1>>.

³¹ *Ibid.*

³² *Ibid.*

³³ *Ibid.*

³⁴ Adrian Croft & Tom Bergin, "EU Investigates Tax Rulings on Apple, Starbucks, Fiat", *Reuters*(11 June 2014),

online:<<http://www.reuters.com/article/2014/06/11/us-apple-tax-eu-idUSKBN0EM0U220140611>>.

³⁵ House of Commons, Standing Committee on Finance, "Pre-budget Consultations 2014", 41st Parl, 2nd Sess, No 051(27 October 2014) at 1750(Mike Allen),
online:<<http://www.parl.gc.ca/HousePublications/Publication.aspx?DocId=6742252&Language=E&Mode=1>>.

³⁶ Canada, Chartered Professional Accountants of Canada, *2014 Pre-budget Consultation: A Submission to the House of Commons Standing Committee on Finance* (Ottawa: Parliament of Canada 2014),

online:<http://www.parl.gc.ca/Content/HOC/Committee/412/FINA/WebDoc/WD6615327/412_FINA_PBC2014_Briefs%5CCharteredProfessionalAccountantsOfCanada-e.pdf>.

³⁷ *Ibid* at 5.

³⁸ *Ibid* at 5

³⁹ *Ibid* at 5.

⁴⁰ *Ibid* at 5.

⁴¹ *Ibid* at 5.

asked the Federal government to adopt the patent box treatment for income from intellectual property in its submission for the 2015 Federal Budget.⁴² Their main point was that the patent box regime could target commercial and manufacturing activities and would thus support companies in their product development and financial cycle, encouraging companies to commercialize their new products in Canada.⁴³

The government of Canada invited Rogers Communications Inc. to write comments on international tax planning by multinational enterprises (MNEs) in 2014.⁴⁴ Rogers advised Canada to implement a patent box regime because Rogers believed it would provide a better system to ensure greater innovation and commercialization and increase the productivity in Canada.⁴⁵ Rogers noted that the patent box could encourage MNEs to hold foreign investments and license foreign operations from Canada rather than other countries and encourage Canadian domestic companies to enter into international market with lower tax rate.⁴⁶

In the Standing Committee on Finance in House of Commons on October 28, 2014, Minister Gerald Keddy, a member of Conservative Caucus, noted his opinion that the patent box would be difficult to implement.⁴⁷ He argued that if one person used the innovation box for cost recovery but recovering the cost of producing the patent and would still get the advantage over all of this person's competition through R&D incentives or other related tax credits, why should this person still get the tax reduction?⁴⁸ If one suddenly decided to evergreen the patents, he just changed a little about it and already got the tax break.⁴⁹

In the same meeting mentioned above, Minister Guy Caron, a member of NDP Caucus, asked a question about how to balance the budget and eliminate the debts while calling for the innovation box to provide a lower tax rate on the patented inventions.⁵⁰ He did not expand on this inquiry.

⁴² Jayson Myers, *2015 Federal Budget Recommendations*(Ottawa: Parliament of Canada, August 2014), online:<http://www.parl.gc.ca/Content/HOC/Committee/412/FINA/WebDoc/WD6615327/412_FINA_PBC2014_Briefs%5CCanadianManufacturersAndExporters-e.pdf>.

⁴³ *Ibid* at 4.

⁴⁴ Rogers Communications Inc., *Consultation on Tax Planning by Multinational Enterprises*, (10 June 2014), online:<<http://www.fin.gc.ca/consultresp/tpme-pfm/pdf/tpme-pfm-04.pdf>>.

⁴⁵ *Ibid* at 8.

⁴⁶ *Ibid* at 8.

⁴⁷ *House of Commons Debates*, 41st Parl, 2nd Sess, No 052(28 October 2014) at 1620(Gerald Keddy), online:<<http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&DocId=6745285#Int-8484866>>.

⁴⁸ *Ibid*.

⁴⁹ *Ibid*.

⁵⁰ *House of Commons Debates*, 41st Parl, 2nd Sess, No 052(28 October 2014) at 1620(Guy Caron), online:<<http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&DocId=6745285#Int-8484866>>.

The Canadian Chamber of Commerce (CCC) suggested that Canada make the creation of the innovation box a priority in the 2015 federal budget.⁵¹ It said that Canada lagged behind many countries in spending and commercializing new technologies and still had a lot to do, especially while other countries made new moves to adopt the tax incentive regimes to encourage companies to develop and commercialize intellectual property in their jurisdictions.⁵² According to the CCC, an “innovation box” regime could encourage companies to locate their intellectual property activities and the new job opportunities associated with the innovation in Canada.⁵³ They believed the patent box would ultimately promote and enhance science and technology innovations in Canada.⁵⁴

1.3 Journalist commentary

Mark Parsons, a manager and senior economist at PwC and author at the C.D. Howe Institute, said that the federal government should keep a close eye on the new trend toward the patent box in an article in *Financial Post*.⁵⁵ At the time of writing the article in 2011, the Canadian government had already created a competitive tax system across the innovation value chain to improve its business tax competitiveness.⁵⁶ He noted that the evidence on the effect of the patent box remained sparse and some argued that the patent box’s availability everywhere may encourage companies to locate their intellectual property and related business activities outside of Canada.⁵⁷ In his opinion, the patent box was a good option for creating a competitiveness tax system and was worth exploring further.⁵⁸

Finn Poschmann, vice-president of research at the C.D. Howe Institute in Toronto, proposed in an article in the *Globe and Mail* in October 2013 that Canada should seriously consider a patent box, which he used interchangeably with the phrase “innovation box.”⁵⁹ He claimed that the innovation box would tax qualified income at a lower rate than the general corporation tax rate, rewarding firms for developing, owning, and exploring IP in their domestic activities.⁶⁰ He also indicated that R&D and manufacturing co-location would generate the productivity boost which could offset some or all of the loss, especially in light of the government’s worry about

⁵¹ Canada, Canadian Chamber of Commerce, *Priorities for the 2015 Federal Budget* (Ottawa:Parliament of Canada, 2015), online:<http://www.parl.gc.ca/Content/HOC/Committee/412/FINA/WebDoc/WD6615327/412_FINA_PBC2014_Briefs%5CCanadianChamberOfCommerce-e.pdf>.

⁵² *Ibid* at 2.

⁵³ *Ibid* at 2.

⁵⁴ *Ibid* at 2.

⁵⁵ Mark Parsons, “Don’t Push Research, Pull It”, *Financial Post*(23 September 2011), online:<<http://www.cdhewe.org/dont-push-research-pull-it-financial-post-op-ed/14813>>.

⁵⁶ *Ibid* at para 10.

⁵⁷ *Ibid* at para 10.

⁵⁸ *Ibid* at para 10.

⁵⁹ Finn Poschmann, “How to Protect Canadian innovation”, *The Globe and Mail* (31 October 2013), online:<<http://www.theglobeandmail.com/report-on-business/how-to-protect-canadian-innovation/article15172654/>>.

⁶⁰ *Ibid* at para 10.

potential loss of tax revenue after adopting this tax program.⁶¹ He believed policy innovation was the way to keep intellectual property in Canada and that the patent or innovation box was the way forward.⁶²

Gabe Hayos, a FCPA and a FCA, suggested in an article in *PR Newswire* in November 2013 that Canadian businesses would benefit from paying a lower rate of tax on profits earned by commercializing innovations.⁶³ The CPA issued a co-branded pre-budget submission to the finance committee along with the Certified General Accountants Association of Canada (CGA-Canada).⁶⁴ In the submission, the two groups included three key recommendations: tax simplification, standard business reporting and a patent box for greater innovation.⁶⁵ By “tax Simplification” they meant that they wanted Canada to review its tax system to reduce complexities and inefficiencies.⁶⁶ Adopting the standardized business reporting meant building a data tagging mechanism that could be used with government filings to reduce both business compliance costs and improve the efficiency and accuracy of information collected.⁶⁷ The author suggested that if acted upon, following these three recommendations including the patent box would encourage economic growth, promote job creation and help improve Canada's productivity record.⁶⁸ In his view, Canadian businesses would benefit from the patent box because they would be paying lower taxes on profits earned from commercializing innovations.⁶⁹ To him, these lower taxes ultimately meant fostering productivity and commercialization of patents would happen in the economy in Canada.⁷⁰

Dan Herman, the exclusive directive of the Center for Digital Entrepreneurship and Economic Performance and a PhD candidate for the Balsillie School of International Affairs and blogged on the topic of the patent box in the *Deep Centre*.⁷¹ He pointed out that there was not enough evidence to show if the patent box had a positive impact on innovation.⁷² He explained that adopting the patent box may not contribute to the innovation in Canada by providing the following example:

One company may locate its headquarters in Canada but may locate its significant

⁶¹ *Ibid* at para 12.

⁶² *Ibid* at para 14.

⁶³ “Reducing Regulatory Burden for Companies and Sparking Innovation Keys to Economic Growth: CPA Canada”, *PR Newswire*(7 November 2013), online:<<http://www.prnewswire.com/news-releases/reducing-regulatory-burden-for-companies-and-sparking-innovation-keys-to-economic-growth-cpa-canada-230699931.html>>.

⁶⁴ *Ibid* at para 3.

⁶⁵ *Ibid* at para 3.

⁶⁶ *Ibid* at para 6.

⁶⁷ *Ibid* at para 7.

⁶⁸ *Ibid* at para 4.

⁶⁹ *Ibid* at para 10.

⁷⁰ *Ibid* at para 10.

⁷¹ Dan Herman, “Does Canada need to adopt patent box IP treatment”, *Deep Centre*(11 February 2015), online: <<http://deepcentre.com/blog/does-canada-need-to-adopt-patent-box-ip-treatment>>.

⁷² *Ibid* at para 3.

R&D activities in India.⁷³ It may develop its patent in India but may file it in Canada and will still get the tax deduction while this company does little contribution to Canada.⁷⁴ This showed that companies would get the tax credit though they may not contribute to the innovation in Canada.⁷⁵ In this way, adopting the patent box may just let companies get more tax credits but may not be effective to the innovation in Canada.⁷⁶

Herman also noted that the patent box benefitted to large companies and had little to do for the small companies that were usually unprofitable in the beginning of their lifetime as a business.⁷⁷ He suggested the real solution was to find the real barriers in the way of innovating instead of just focusing on the tax competitiveness.⁷⁸

1.4 Academic and practitioner commentary

Deloitte released a report in 2012 noting that the patent box may seem to be an attractive policy, but Canada should consider the challenges the country faced.⁷⁹ First, the patent box was a very new idea at the time and there was little evidence of its effectiveness.⁸⁰ Second, the patent box was not an effective incentive to promote research because it targeted the income from patented products instead of research itself, which would add complexity to the tax system.⁸¹ Patent box may lead companies to focus on the commercialization of patents to get more tax credits and may not be able to pay much attention to do more research while the patent box's goals were both encouraging the research and commercializing the patents.⁸² Policing will be needed to ensure both incomes and costs have been assigned to the patents.⁸³ Third, designing the patent box regime could be very complicated and would need a lot more research in the future.⁸⁴ Additionally, Deloitte was concerned governments may be engaged to race to the bottom in which government revenues fell without the increasing of the economic activities as more countries adopt that tax regime.⁸⁵ Ultimately, Deloitte felt it was important to do further studies to see if Canada could benefit from the patent box regime.⁸⁶

⁷³ *Ibid* at para 3-4.

⁷⁴ *Ibid* at para 4.

⁷⁵ *Ibid* at para 4.

⁷⁶ *Ibid* at para 4.

⁷⁷ *Ibid* at para 8.

⁷⁸ *Ibid* at para 9.

⁷⁹ “Patent Box Regimes—What’s Inside? (Opportunities for Canada)”, *Deloitte Canada*(March 2012), online:<<http://www2.deloitte.com/content/dam/Deloitte/ca/Documents/tax/ca-en-tax-patent-box-regime s.pdf>>.

⁸⁰ *Ibid* at 2.

⁸¹ Rachel Griffith, Helen Miller & Martin O’Connell, “The UK will introduce a Patent Box, but to whose benefit?” *Institute for Fiscal Studies*(30 November 2010), online: <<http://www.ifs.org.uk/publications/5362>>.

⁸² *Ibid*.

⁸³ *Ibid*.

⁸⁴ *Supra* note 79 at 2.

⁸⁵ *Ibid*.

⁸⁶ *Ibid*.

Antoine Desroches, a Montreal-based tax associate at Norton Rose Fulbright writing on the Canadian Tax Foundation site, suggested that it was time for Canada to reverse the IP immigration trend and further innovation by adopting a patent box.⁸⁷ He pointed out that this regime was not to reform but to improve the existing tax system because Canada already provided generous R&D tax incentives and preferential taxation of IP.⁸⁸ He also noted that though the patent box may result in decreased tax revenues in the short-term, he believed it would attract foreign IP to Canada, resulting in long-term economic benefits, spillovers, and ultimately increase revenues from other sources in addition to promote innovation.⁸⁹ He suggested that the Canadian patent box should be a broad and inclusive regime, meaning that the patent box should not be restricted to the patents but include other intellectual property more like an “innovation” box by definition.⁹⁰ His belief about the breadth of his proposed Canadian patent box existed because he felt other IP assets would also contribute to the economic growth, citing successes in this realm in places like Luxembourg and Hungary.⁹¹ In addition to a low tax rate on qualifying income, he believed it could provide increasing incentives on qualifying IP resulting from R&D activities performed in Canada no matter in whole or in part.⁹² He pointed out that it was not clear whether these industrial countries would be better off in a world where they need to compete aggressively with other countries to attract IP and collaborate with each other in the same time.⁹³

Nick Pantaleo, Finn Poschmann, and Scott Wilkie believed that Canada should adopt a patent box in a joint report in 2013.⁹⁴ Nick Pantaleo is a FCA at PwC LLP.⁹⁵ Finn Poschmann is a Vice-President and doing research at the C.D. Howe Institute.⁹⁶ Scott Wilkie is a tax partner at Blakes and teaches International Taxation at the University of Toronto.⁹⁷ They believed altered business behavior would potentially address Canada’s low rate growth in patent registrations and low rates of commercialization of new products and services compared to other OECD members. Keeping this low rate

⁸⁷ Antoine Desroches, “A Comparative Study of the Canadian and European Taxation of Intellectual Property Income: Has the Time Come for a Canadian Patent Box?”(2012), Travail dirigé présenté au programme de maîtrise en droit, option fiscalité (Preparation work presented in the Master of Laws program , Taxation option), online:<<https://www.ctf.ca/ctfweb/CMDDownload.aspx?ContentKey=adb14403-820c-4a59-b7c1-0b9c7ece5c48&ContentItemKey=99816829-3d00-4059-960c-54cf325d1519>>.

⁸⁸ *Ibid* at 62.

⁸⁹ *Ibid* at 62.

⁹⁰ *Ibid* at 62.

⁹¹ *Ibid* at 63.

⁹² *Ibid* at 63.

⁹³ *Ibid* at 63.

⁹⁴ Nick Pantaleo, Finn Poschmann & Scott Wilkie, “Improving the Tax Treatment of Intellectual Property Income in Canada”(2013), C.D. Howe Institute Commentary: Fiscal and Tax Competitiveness, NO.379,

online:<http://www.cdhowe.org/pdf/Commentary_379.pdf>.

⁹⁵ *Ibid*.

⁹⁶ *Ibid*.

⁹⁷ *Ibid*.

of growth was not good for further innovation in the perspective of competitiveness.⁹⁸ They also believed that adopting the patent box could encourage business investment in innovative processes, which in turn would improve productivity growth and income growth.⁹⁹

Albert Baker, a global tax policy leader at Deloitte expressed his advices in the Deloitte's Budget 2015 that Canada should consider the introduction of the Patent Box model.¹⁰⁰ He said that patent box could encourage companies to commercialize and retain patents inside the country, which was good for Canada to keep its competitiveness.¹⁰¹ In recent years, global competition in attracting R&D has increased and some countries not only adopt and expand R&D tax incentives, but also adopt the patent box to encourage the commercialization of innovations.¹⁰² Baker believed Canada was at a competitive disadvantage without the patent box while trading partners like the UK continued to utilize and support the patent box and other similar regimes.¹⁰³ The recommended structure of the patent box was still being debated and the United Kingdom and Germany had announced an agreement as to the structure of the patent box going forward in December 2014.¹⁰⁴

HEC Montreal drafted a report that said the tax burden on companies in Quebec was among the highest in North America and there were number of Canadian patents transferred to jurisdictions that had attractive tax policies like the patent box which was aimed at intellectual property.¹⁰⁵ The report indicated the fact that the tax treatment of intellectual property was less competitive in Quebec and in Canada as a whole than in other countries could explain the lack of effectiveness of R&D in Canada.¹⁰⁶ As a more competitive policy with respect to intellectual property, the author believed the patent box could increase the effectiveness of government investments in R&D in theory.¹⁰⁷

1.5 Further thoughts and lingering questions

My first concern is: how does one ensure that the patent box benefits to companies contributing to Canada's innovation rather than a benefit to companies with little

⁹⁸ *Ibid* at 2.

⁹⁹ *Ibid* at 5.

¹⁰⁰ Albert Baker, "Budget 2015 – tax policy issues for consideration", *Deloitte Canada*, online:<<http://www2.deloitte.com/ca/en/pages/tax/articles/budget-2015-tax-policy-issues-for-consideration.html>>.

¹⁰¹ *Ibid* at 3.

¹⁰² *Ibid* at 3.

¹⁰³ *Ibid* at 3

¹⁰⁴ *Ibid* at 3.

¹⁰⁵ HEC Montreal, "Taxation and Government Assistance to Companies: Literature Review and Analysis", *Conference Board*, online:<http://www.conferenceboard.ca/Libraries/PUBLIC_PDFS/6966_Fiscalite-AidePublique_RPT_E-ES.sflb>.

¹⁰⁶ *Ibid* at i.

¹⁰⁷ *Ibid* at i.

contribution? A company could get a tax incentive but may not really contribute to the innovation in Canada. As Dan Herman mentioned before, a company may locate its headquarters and file its patents in Canada but locate its significant R&D activities in India.¹⁰⁸ The company could assign some excellent engineers to India to do the research and develop new intellectual property and build factories in India instead of in Canada, thereby foregoing any benefit to Canada but reaping the benefits of the patent box regime.

Next, what should government do to choose qualified companies? It seems that the phrase is quite vague and would need some serious clarification with regards to the criteria for fitting that designation. Nowadays, an increasing number of multinational companies appear on an almost instantaneous basis. They have a lot of resources and have the freedom to choose a country where they can make the most profits. In my opinion, qualified companies should first and foremost contribute to the economic growth in Canada. It should not only register their patents in Canada but also locate its R&D activities in Canada.

Many companies register in a developed country but locate R&D activities in a developing country. Do these companies also contribute to the economic growth in developed countries? They created jobs and GDPs and did research in the developing country instead of Canada. They may also contribute to the revenue to the developing country. Canada might only be the place where they registered their patents rather than the place in which the development happens.

As mentioned above, the patent box regime most often benefits large companies instead of SMEs so that I think the patent box may not be able to encourage the innovation in Canada. Large companies generally receive more tax credits from the patent box regimes than small companies and can put more money into development.¹⁰⁹ It may enhance competition and put more pressure on the small companies that they cannot release because they may not qualify for the credit in the start-up.¹¹⁰ Most large companies who already own many valuable patents and can make large profits from them. These companies may not only focus on research but also on the markets while small companies most concentrate on developing its intellectual property like patents. Creation and commercialization of intellectual property are both important. For the further innovation, intellectual property still plays a significant part and SMEs also will play an important part. It is important for SMEs to benefit from tax incentives and we should be sure that we consider how to benefit SMEs in the formation of any further regulations to encourage innovation because SMEs are essential to the growth of the nation and its economy.

2. The United States of America

¹⁰⁸ *Supra* note 71.

¹⁰⁹ *Ibid.*

¹¹⁰ *Ibid.*

2.1 Legal status of the patent box in the United States

The United States does not have the Patent Box regime.

However, the US Representative Allyson Young Schwartz proposed the idea of a patent box to the Committee on Ways and Means in September 2012 in the *Manufacturing Innovation in America Act* of 2012.¹¹¹ The number of the Bill is H.R. 6544.¹¹² The bill would have amended the Internal Revenue Code to allow a taxpayer to elect a tax deduction for an amount equal to 71% of the lesser of the taxpayer's patent box profit or its taxable income for the taxable year.¹¹³ It defined "patent box profit" to include gross receipts derived from the sale, lease, license, and other dispositions of qualified patent property in the course of a US trade or business over the sum of the taxpayer's cost of goods sold allocable to patent gross receipts, other expenses, losses, or deductions, including research and development expenditures, allocable to such receipts, plus routine profit.¹¹⁴ It defined "qualified patent" to include a patent issued or extended by which an application was pending before.¹¹⁵ It also set forth rules for the application of the patent box profit deduction to pass-thru entities, including partnerships and corporations, trusts, estates, and agricultural and horticultural cooperatives.¹¹⁶ This legislation mimics the classically understood "patent box" regime in many ways and is in effect in the United States.¹¹⁷

The *Manufacturing Innovation in America Act* of 2013 introduced the same proposal as above in 2013 though did not get passed.¹¹⁸ This act was introduced in House by House of Representatives and referred to the House Committee on Ways and Means in June 28, 2013.¹¹⁹ The latest action is referred to the House Committee on Ways and Means in June 28, 2013.¹²⁰

The Senator Finance Committee's international tax reform working group co-chaired by Senator Rob Portman and Senator Charles Schumer has released its final report in July 2015 in which co-chairs agreed that the US must take legislative action soon to implement its own innovation box.¹²¹ This report said that the co-chairs agreed to

¹¹¹ US, Bills, H.R.6544, *Manufacturing Innovation in America Act of 2012*, 112th Congress 2nd Session, 2012.

¹¹² *Ibid.*

¹¹³ *Ibid.*

¹¹⁴ *Ibid.*

¹¹⁵ *Ibid.*

¹¹⁶ *Ibid.*

¹¹⁷ *Ibid.*

¹¹⁸ US, Bill, H.R.2605, *Manufacturing Innovation in America Act of 2013*, 113th Congress, 2013.

¹¹⁹ *Ibid.*

¹²⁰ *Ibid.*

¹²¹ US, Senator Finance Committee, *International Tax Reform Working Group: Final Report* (July 2015) at 76,
online:<

combat efforts of other countries to attract highly mobile corporative income through implementing the US own innovation box regime.¹²² The co-chairs believed that the innovation box would encourage the development and ownership of IP in the US along with associated domestic manufacturing.¹²³ Senator Rob Portman and Senator Charles Schumer will continue to work to determine appropriate criteria for “covered IP, a nexus standard that incentivizes US research, manufacturing, and production, as well as a mechanism for the domestication of currently offshore IP”.¹²⁴ This report also mentioned that the discounted rates of the innovation box has the potential to be effective in encouraging the movement of the ownership of IP offshore.¹²⁵ The co-chairs also agreed that the anticipated impact of the new nexus requirement on the innovation box regime as the “substantial activity” will have a “significant detrimental” impact on the maintenance and creation of the intellectual property in the United States.¹²⁶ To co-chairs, the impact will be on the associated domestic manufacturing sector, jobs, and revenue base.¹²⁷ Under the proposed the BEPS modified nexus approach, businesses need to show that businesses activities such as research and development activities were substantially performed in the country where they applied for the innovation box.¹²⁸ The nexus approach will be further discussed in the UK section.

The innovation box draft proposal came out in July 28, 2015 to “amend the Internal Revenue Code of 1986 to allow a deduction for innovation box profit from the use of United States innovations and to encourage domestication of intangible property”.¹²⁹ There should be a deduction an amount of equal to 71% of the lesser of “the innovation box profit of the taxpayer for the taxable year or taxable income (determined without the 71% deduction) for the taxable year”.¹³⁰ This would result in approximately 10% effective tax rate on innovation box profits.¹³¹ The deduction could not be taken into account “in computing any net operating loss or the amount of any operating loss carryback or carryover” according to the Bill.¹³² The Bill determined the “innovation box profit”, “definition of costs and special rules for affiliated groups”, “regulations”, and “effective date”.¹³³ KPMG’s observation was

<http://www.finance.senate.gov/newsroom/chairman/release/?id=e9eefc66-7e11-4276-939f-3eca6fd6d959>.

¹²² *Ibid* at 76.

¹²³ *Ibid* at 76.

¹²⁴ *Ibid* at 76.

¹²⁵ *Ibid* at 74; OECD, *Action 5: Agreement on Modified Nexus Approach for IP Regimes*, online:<

<http://www.oecd.org/ctp/beps-action-5-agreement-on-modified-nexus-approach-for-ip-regimes.pdf>>.

¹²⁶ *Ibid* at 75.

¹²⁷ *Ibid* at 75.

¹²⁸ *Ibid* at 75.

¹²⁹ US, Bill, HR, *Innovation Promotion Act of 2015*, 114th Cong, 2015, online:<

<http://waysandmeans.house.gov/wp-content/uploads/2015/07/Innovation-Box-2015-Bill-Text.pdf>>.

¹³⁰ *Ibid*.

¹³¹ *Ibid*.

¹³² *Ibid*.

¹³³ *Ibid*.

that this proposal did not include an estimate of the revenue cost or offer any indication of whether or how the revenue cost might offset which could be substantial.¹³⁴

2.2 Government official, government agency, and legislator commentary

Senator Dianne Feinstein, a Democrat from California, expressed her desire for a patent box in the United States in November 2012.¹³⁵ She drafted legislation that would reduce the corporate tax rate from usual 35% to 15% on the sale of patented and domestically manufactured products based on the patent box.¹³⁶ Sen. Feinstein believed that to remain the most powerful economy in the world the United States should dominate the manufacturing of innovative products.¹³⁷ She saw the fact that manufacturing jobs across the country continued to be offshore which made the US employment base suffer and companies experienced a rapid decline in innovation.¹³⁸ According to Sen. Feinstein, one strategy to stop this trend was lower the tax rate on profits derived from the innovation products which was known as the patent box.¹³⁹ She believed that the patent box regime would increase returns to investment in research and development, encourage increased domestic production and level the playing field with international competitors who used a wide range of tax incentives to attract businesses.¹⁴⁰ In her view, the patent box would provide a tax incentive for companies to locate their investment in the United States.¹⁴¹ She also claimed that R&D incentives were different from the patent box because R&D encouraged more “basic research” while the patent box would reward companies that can capitalize the research and turn a profit.¹⁴² Unfortunately, Sen. Feinstein did not expand on the meaning of the “basic research”.¹⁴³

In the testimony of Robert D. Atkinson before the Senate Finance Committee United States Senate in March 2012, Atkinson said that Congress should establish new incentives like an investment tax credit for new machinery, equipment, and software investment and a patent box to promote the competitiveness of the US.¹⁴⁴ Robert D. Atkinson is the president and founder of the Information Technology and Innovation Foundation (ITIF) and claimed that many countries had already accepted the patent

¹³⁴ “Legislative update - Draft proposal for innovation box”, KPMG (29 July 2015), online:<<http://www.kpmg.com/US/en/IssuesAndInsights/ArticlesPublications/taxnewsflash/Pages/2015-1/legislative-update-draft-proposal-for-innovation-box.aspx>>.

¹³⁵ Dianne Feinstein, “Putting America Back to Work” (4 November 2012), Dianne Feinstein (blog), online: <<http://www.feinstein.senate.gov/public/index.cfm/putting-america-back-to-work>>.

¹³⁶ *Ibid* at para 1

¹³⁷ *Ibid* at para 2.

¹³⁸ *Ibid* at para 4.

¹³⁹ *Ibid* at para 7.

¹⁴⁰ *Ibid* at para 15.

¹⁴¹ *Ibid* at para 17.

¹⁴² *Ibid* at para 20.

¹⁴³ *Ibid*.

¹⁴⁴ US, Testimony of Robert D. Atkinson Before the Senate Finance Committee United States Senate (6 March 2012).

box regime to allow corporate income from the sale of patented products taxed at a lower rate.¹⁴⁵ To Atkinson, the patent box could increase the competitive advantage in growing, retaining, and attracting knowledge-based economic activities.¹⁴⁶ He also believed that the patent would put the US innovation economy at an even greater competitive disadvantage than it already was.¹⁴⁷ Thus, Atkinson believed that Congress should consider establishing a patent box incentive either tied to revenue from patented products or more broadly to innovation-based products.¹⁴⁸

The staff of the Joint Committee on Taxation prepared a document titled “Present Law and Background Related to Reform the Taxation of Income of Multinational Enterprises” which claimed that the patent box may promote the domestic investment in research and development by providing a low tax rate in July 2014.¹⁴⁹ It mentioned that policymakers pursued the patent box under the premise that the location where the IP was held would influence where companies made the investment.¹⁵⁰ It also pointed out that though patent box may attract the patent-related income, there would be a large decrease in tax revenue.¹⁵¹

The staff of the Joint Committee on Taxation prepared a document titled “Present Law and Selected Policy Issues in the US Taxation of Cross-Border Income” which analyzed the patent box’s implications for the United States in March 2015.¹⁵² This document was included in a public hearing “Building a Competitive U.S. International Tax System” held by the Senate Committee on Finance.¹⁵³ Some policymakers worried that the patent box adopted by other countries would pull research activities away from the United States.¹⁵⁴ Some commentators argued that the US should adopt the patent box.¹⁵⁵ Sen. Charles Schumer from Democratic Party had been one of the main advocates of the patent box in the U.S along with Sen. Rob Portman from Republican Party from Ohio.¹⁵⁶ Sen. Schumer said that other countries were trying to lure US research and the US needed to protect themselves and kept high tech, pharmacy or high-end manufacturing inside the country.¹⁵⁷ Sen. Portman claimed that

¹⁴⁵ *Ibid.*

¹⁴⁶ *Ibid.*

¹⁴⁷ *Ibid.*

¹⁴⁸ *Ibid.*

¹⁴⁹ US, Joint Committee on Taxation, *Present Law and Background Related to Reform the Taxation of Income of Multinational Enterprises* (JCX-90-14) (21 July 2014).

¹⁵⁰ *Ibid.*

¹⁵¹ *Ibid.*

¹⁵² US, Joint Committee on Taxation, *Present Law and Selected Policy Issues in the US Taxation of Cross-Border Income* (JCX-51-15) (16 March 2015),

online:<<https://www.jct.gov/publications.html?func=startdown&id=4742>>.

¹⁵³ *Ibid.*; US, Senate Committee on Finance, *Hearing on Building a Competitive U.S. International Tax System*(17 March 2015).

¹⁵⁴ *Ibid.*

¹⁵⁵ *Ibid.*

¹⁵⁶ John D. McKinnon, “Lawmakers Embrace Patent Tax Breaks: US Considering ‘Patent Box’ Approach Similar to U.K. in Piecemeal Approach to Reform”, *The Wall Street Journal* (5 May 2015), online:<<http://www.wsj.com/articles/lawmakers-embrace-patent-tax-breaks-1430850214>>.

¹⁵⁷ *Ibid.*

the US had been uncompetitive because of its high corporate tax and patent box even decreased US's competitiveness, which would make workers and wages suffer.¹⁵⁸ One economic rationale for the patent box was that it could promote investment in research and development by lowering the tax rate.¹⁵⁹ However, it may be still unclear whether the patent box was more effective than a research credit at promoting research activity.¹⁶⁰ The research credit directly subsidized while the patent box subsidized all activity generating income related to intellectual property, which also included the non-research expenditure marketing.¹⁶¹ In this sense, the research credit was more targeted and may contribute more directly to research activity and economic growth at the same or lower budgetary cost compared to the patent box.¹⁶² Additionally there was not enough conclusive research supporting that the patent box had real economic effects and some concerned that the loss of the revenue may outweigh the economic benefits of the patent box.¹⁶³ The author did not mention how many researched he thought was enough.¹⁶⁴

In February 2015, the Senate Finance Committee held a hearing on tax reform and economic growth in which the patent box was discussed.¹⁶⁵ Laura D'Andrea Tyson, a professor of business and administration and economics from University of California-Berkeley, said that it was time to change current system because the US companies were at a competitive disadvantage compared to their European counterparts who were able to offer the benefits of the patent boxes to multinational corporations.¹⁶⁶ She did not expand on her opinion.

In April 2015, PepsiCo Inc. said in a submission to the Senate Finance Committee only expressed that the patent box as part of a new reformed tax system should have a broad applicability but did not claim if the PepsiCo wanted the patent box.¹⁶⁷ They also stated that broad applicability could not only benefit a wide cross-section of industries but also promote the greatest possible investment and job growth in the United States.¹⁶⁸ In PepsiCo's point of view, limiting the applicability of the patent box meant limiting the investment and job growth the new tax reform was intended to achieve.¹⁶⁹ They held the opinion that tax reform should be designed to contribute to create more jobs and increase the economic growth.¹⁷⁰ In today's globalized world, companies would consider their total tax return or tax relief on investment when they

¹⁵⁸ *Ibid.*

¹⁵⁹ *Ibid.*

¹⁶⁰ *Ibid.*

¹⁶¹ *Ibid.*

¹⁶² *Ibid.*

¹⁶³ *Ibid.*

¹⁶⁴ *Ibid.*

¹⁶⁵ US, *Tax Reform, Growth and Efficiency*, Senate Finance Committee Hearing (24 February 2015).

¹⁶⁶ *Ibid.*

¹⁶⁷ US, *PepsiCo, Inc., Submission to Senate Finance Committee Tax Working Groups on Business Income Tax and International Tax* (15 April 2015).

¹⁶⁸ *Ibid* at 3.

¹⁶⁹ *Ibid* at 3.

¹⁷⁰ *Ibid* at 1.

made a decision on investing in one country so US needed a new tax reform like the patent box to attract companies to invest inside the US with low tax rate.¹⁷¹

The Silicon Valley Tax Directors Group wrote a submission to four senators including Senator Rob Portman, Senator Charles E. Schumer, Senator John Thune and Senator Ben Cardin that said adopting the patent box would have the long-term benefits to the US competitiveness in April 2015.¹⁷² They advised the government to adopt the patent box to maintain US competitiveness and avoid the migration of IP ownership and R&D jobs from US to other developed countries.¹⁷³ Additionally, they believed that the patent box would help make the US more competitive by providing a lower tax rate, attracting and maintaining the high value jobs and spillover benefits associated with innovation and development.¹⁷⁴ The authors believed that a properly designed patent box would benefit to promote the creation, ownership and commercialization of IP in the United States.¹⁷⁵

National Association of Manufactures (NAM) was open to the idea of innovation box according to its comments submitting to the Senator Finance Committee international tax working group in April 2015.¹⁷⁶ The NAM said that it was the idea of preferential tax rate for the intellectual property income earned by the US companies resulting from the development of the R&D activities or the ownership of the R&D activities in the US.¹⁷⁷ The NAM believed that the creation and commercialization in the US was directly tied to the “highly-skilled jobs with good wages and benefits”.¹⁷⁸ Therefore, the NAM pointed out that an innovation box would level the playing field with the US foreign counterparts who had already had the reduced rates and tax incentives.¹⁷⁹ Besides, the NAM also believed that an innovation box would encourage companies to “invest in innovations, manufacturing and retain the ownership of the resulting, valuable IP” in the US.¹⁸⁰

The Motion Picture Association of America (MPAA) submitted to the international tax reform working group claiming that the US needed to take specific steps to address developments overseas or the US would suffer from significant jobs and revenue loss in April 2015.¹⁸¹ The MPAA mentioned that other countries were seeking to attract IP creation and commercialization through introducing the broad IP

¹⁷¹ *Ibid* at 1.

¹⁷² US, Silicon Valley Tax Directors Group, Submission to Senators (15 April 2015).

¹⁷³ *Ibid* at 3.

¹⁷⁴ *Ibid* at 3.

¹⁷⁵ *Ibid* at 4.

¹⁷⁶ National Association of Manufactures, *Comments of the National Association of Manufactures Submitted to the Senator Finance Committee International Tax Working Group* (15 April 2015) at 6.

¹⁷⁷ *Ibid* at 6.

¹⁷⁸ *Ibid* at 6.

¹⁷⁹ *Ibid* at 6.

¹⁸⁰ *Ibid* at 6.

¹⁸¹ Motion Picture Association of America, Inc. *Submission to the International Tax Reform Working Group* at 4 (15 April 2015).

regimes.¹⁸² Companies like the MAPP were under increased pressure from stakeholders to take advantages from IP regimes.¹⁸³ Many companies would decide to locate “IP ownership and a higher proportion of IP development functions” overseas to meet the requirement of the “nexus approach” to claim the benefits of IP regimes.¹⁸⁴ The MAPP suggested that the US should adopt the IP box to prevent greater migration of IP ownership and high-quality jobs to other countries and to prevent the loss of associated tax revenue.¹⁸⁵ The IP box would encourage the development, ownership, and commercialization of IP in the US according to the submission.¹⁸⁶ The MAPP believed that if the US delay to adopt a competitive IP system, the risk that the US IP development shifted overseas would increase causing the US to lose significant jobs and revenue to other developed countries.¹⁸⁷

McGraw Hill Financial submitted to the international tax reform working group claiming that creating an American innovation box would send a strong message that the US was open to the businesses to incentivize innovation and promote job creation inside the US in April 2015.¹⁸⁸ From the McGraw Hill Financial’s point of view, an American innovation box would relieve significant market pressure of companies to retain and invest resources in the US.¹⁸⁹ In the submission, the McGraw urged the Congress to consider the innovation box and this tax regime would be a “good down payment on comprehensive tax reform”.¹⁹⁰ Reducing the US corporate tax rate coupling with an innovation box would be a strong incentive for expansion in America.¹⁹¹

Senate Finance Committee Ranking Member Ron Wyden of the Democratic Party did not include an innovation or patent box in his tax plans in June 2015.¹⁹² He noted in his plans, though, that he was open to the idea of the patent box but that he had technical concerns about how the rules would be written.¹⁹³

2.3 Journalist commentary

A series of researchers from PwC LLP said that it was important to develop a US

¹⁸² *Ibid* at 4.

¹⁸³ *Ibid* at 4.

¹⁸⁴ *Ibid* at 4.

¹⁸⁵ *Ibid* at 5.

¹⁸⁶ *Ibid* at 5.

¹⁸⁷ *Ibid* at 5.

¹⁸⁸ McGraw Hill Financial, *Submission to the International Tax Reform Working Group* at 2 (15 April 2015).

¹⁸⁹ *Ibid* at 3.

¹⁹⁰ *Ibid* at 3.

¹⁹¹ *Ibid* at 3.

¹⁹² Latest US Tax Break Fad Means Today’s Winners Would Score Anew, *Bloomberg Business* (24 June 2015),

online:<<http://www.bloomberg.com/news/articles/2015-06-24/latest-u-s-tax-break-fad-means-today-s-winners-would-score-anew>>; US, Bill, S., *Offshore Reinsurance Tax Fairness Act*, 114th Congress, 2015.

¹⁹³ *Ibid*.

version of IP box in the adequate time in *Tax Notes* in March 2012.¹⁹⁴ In their opinions, adoption of the patent box in other EU countries has reduced US competitiveness.¹⁹⁵ The United States is a relatively unattractive location to develop and own IP from a tax perspective, in part due to the fact that it lacked a patent box.¹⁹⁶ The authors believed that the US would be the least attractive country for developing and holding IP among OECD members even if other countries had not adopted the patent box regimes because of its high tax rate.¹⁹⁷ They recommended that the US policymakers consider adopting a patent box no matter as a stand-alone measure or as part of more fundamental tax reform.¹⁹⁸ The authors believed that the patent box would provide a more attractive tax environment for companies to create and commercialize IP in the United States.¹⁹⁹ To design a US version of the patent box, they said that policymakers needed to consider types of qualified IP, types of IP-related income, the methods of taxing like choosing deduction or reducing tax rate, and the amount of the tax rate.²⁰⁰ They also said that policymakers should take notice that the patent box could have a significant revenue cost and impose substantial compliance and administrative burdens, which makes the adequate time of developing the IP box in the US important.²⁰¹

Robert Wood, the managing partner of Wood LLP, said that the patent box would be beneficial to the United States in *Forbes* in October 2014.²⁰² He claimed the US was at a disadvantage because many other countries attract industries by taxing income from intellectual property at a lower rate compared to the US.²⁰³ Companies with IP often consider locating in appropriate jurisdictions to get a better deal for their intellectual property.²⁰⁴ In his opinion, patents are the most appropriate type of IP for the patent box but designs, copyrights, and trademarks should also be eligible.²⁰⁵ He did not explain why patents were the most appropriate type for the IP box. Further, Wood thought that the patent box should not only include patents but also other intellectual property and took the splitting up income as an example.²⁰⁶ It is difficult to judge whether revenue is from IP, manufacturing, or from sale because revenue

¹⁹⁴ Peter R. Merrill et al, “Is It Time for the United States to Consider the Patent Box?”, *Tax Notes*(26 March 2012), online:<http://www.pwc.com/en_US/us/washington-national-tax/assets/Merrill0326.pdf>.

¹⁹⁵ *Ibid* at 1672.

¹⁹⁶ *Ibid* at 1672.

¹⁹⁷ *Ibid* at 1672.

¹⁹⁸ *Ibid* at 1672.

¹⁹⁹ *Ibid* at 1672.

²⁰⁰ *Ibid* at 1675.

²⁰¹ *Ibid* at 1675.

²⁰² Robert W. Wood, “Patent Boxes Come To Ireland & UK, Why Not US”, *Forbes*(16 October 2014), online:<<http://www.forbes.com/sites/robertwood/2014/10/16/patent-boxes-come-to-ireland-uk-why-not-us/>>.

²⁰³ *Ibid*.

²⁰⁴ *Ibid*.

²⁰⁵ *Ibid*.

²⁰⁶ *Ibid*.

may come from all of them.²⁰⁷ IP can produce capital gains rather than ordinary income and the US should learn that intellectual property and taxes go together according to Wood.²⁰⁸ He did not expand on this inquiry.

John D. McKinnon, a journalist with the *Wall Street Journal* who covers tax policy and related fiscal issues, said that many US businesses were pushing for a tax break known as the patent box or innovation box in an article published in May 2015.²⁰⁹ Many developed countries adopted this tax break.²¹⁰ He listed various individuals' opinions about the patent box.²¹¹ Some thought the patent box was a good idea to help preserve intellectual property from transferring abroad while at that time it was relatively easy for companies to move intellectual property to tax heavens.²¹² Many companies do research in the US but hold registered patents in tax-heaven countries to avoid the high US corporation tax.²¹³ According to McKinnon, US lawmakers not only worried about loss of revenue but also concerned that transferring patents overseas would lead companies to transfer more research and high-end manufacturing jobs overseas.²¹⁴ The biggest research-intensive firms were supporting the idea of the patent box who mostly located its intellectual property and production facilities in low-tax heavens like Ireland.²¹⁵ However, despite the bipartisan support, the author held the idea that lawmakers needed to concern about that what sorts of innovations deserve the tax break.²¹⁶ Some may want a narrow standard that only covers income from patents and manufacturing know-how while others may want a broader standard that could cover income attributable to market materials.²¹⁷ The author also noted that not every company was in full support of the patent box because many worried that they may not get as much benefit as other industries.²¹⁸

Bernie Becker, a reporter for *The Hill*, said that lawmakers seeking progress on tax reform were considering a new incentive for innovation in June 2015.²¹⁹ Becker said the tax break, known as the "patent box," would help companies who had already paid little tax which may not good.²²⁰ He pointed out that the patent box would give companies a tax break on their income from intellectual property to attract more

²⁰⁷ *Ibid.*

²⁰⁸ *Ibid.*

²⁰⁹ *Ibid.*

²¹⁰ John D. McKinnon, "Lawmakers Embrace Patent Tax Breaks: US Considering 'Patent Box' Approach Similar to U.K. in Piecemeal Approach to Reform", *The Wall Street Journal* (5 May 2015), online:<<http://www.wsj.com/articles/lawmakers-embrace-patent-tax-breaks-1430850214>>.

²¹¹ *Ibid.*

²¹² *Ibid.*

²¹³ *Ibid.*

²¹⁴ *Ibid.*

²¹⁵ *Ibid.*

²¹⁶ *Ibid.*

²¹⁷ *Ibid.*

²¹⁸ *Ibid.*

²¹⁹ Bernie Becker, "Tax writers mull new breaks for innovators", *The Hill* (9 June 2015), online:<<http://thehill.com/policy/finance/244366-tax-writers-mull-new-breaks-for-innovators>>.

²²⁰ *Ibid.*

high-tech and pharmaceutical businesses.²²¹ Bernie Becker also noticed that though there was bipartisan interest in the patent box, congressional tax writers acknowledged that they faced challenges getting the policy right.²²² On the policy side, lawmakers need to struggle with what type of intellectual property would qualify.²²³ Lawmakers also need to consider what sort of income is eligible.²²⁴ The author noted that the OECD was trying to find a way to make sure the patent box encouraged economic activities in the countries instead of being a tool to allow companies to shift profits.²²⁵ Another challenge was that small businesses may need to wait for getting credits from the patent box and the patent box may potentially strike a deal that gave fewer benefits to retailers and manufactures.²²⁶

Kelsey Snell, a reporter for *The Washington Post*, said that the patent box debate was coming in Congress in June 2015.²²⁷ She noted that tax writers in the Congress were starting to seriously consider the best treatment for intellectual property.²²⁸ The patent box was top on tax writers' list to treat the intellectual property.²²⁹ Snell pointed out that the patent box issue had been suddenly occurred in the Senator where the members of the Finance Committee were working on proposals for tax reforms.²³⁰

Alexandra Thornton, the senior director of Tax Policy on the Economic Policy team at the Center for American Progress, believed that policymakers should be wary of adopting a patent box tax structure in *Center for American Progress* in June 2015.²³¹ To her, the patent box would reward many companies that have taken the advantage of profit shifting to avoid paying their fair share of US taxes that already benefited from the R&E tax credit in developing their patented products.²³² She believed the R&E credit provides incentives for innovations regardless of whether ideas would become commercially valuable.²³³ However, the patent box only rewards innovations that could prove to be commercially successful.²³⁴ These companies' patents also benefit

²²¹ *Ibid.*

²²² *Ibid.*

²²³ *Ibid.*

²²⁴ *Ibid.*

²²⁵ *Ibid.*

²²⁶ *Ibid.*

²²⁷ Kelsey Snell, "Budget and Tax: The Senate is poised to pass TPA, and TAA is next", *The Washington Post* (24 June 2015), online: <

<http://www.washingtonpost.com/news/powerpost/wp/2015/06/24/budget-and-tax-the-senate-is-poised-to-pass-tpa-and-taa-is-next/>>.

²²⁸ *Ibid.*

²²⁹ *Ibid.*

²³⁰ *Ibid.*

²³¹ Alexandra Thornton , "Patent Tax Dodge: Why the Patent Box Does Not Answer America's Need for Tax Reform", *Center for American Progress* (1 June 2015), online:<<https://www.americanprogress.org/issues/economy/news/2015/06/01/114088/patent-tax-dodge-why-the-patent-box-does-not-answer-americas-need-for-tax-reform/>>.

²³² *Ibid.*

²³³ *Ibid.*

²³⁴ *Ibid.*

from the strong protection from the US and protection always cost money.²³⁵ She believed that to find revenue to support federal priorities, lawmakers should ensure that multinational companies pay their fair share of taxes.²³⁶ In her opinion, the patent box with a low tax rate could end up being a loophole for the US multinationals.²³⁷ The author held the opinion that reducing the tax rate on patents will require others to endure higher taxes or program cuts to make up for it.²³⁸

Marty Sullivan, a chief economist at *Tax Analysts*, held the idea that the patent box was very complicated and was not a good idea to be introduced to the US in the *Tax Analysts* in June 2015.²³⁹ The author also claimed that retailers or some other firms that were not benefiting from the patent box were going to go ballistic.²⁴⁰ The patent box was very complicated and there were easier methods for delivering the tax benefits to the technology according to the Sullivan.²⁴¹ The author thought research credits was a much easier and cost-effective incentive to encourage the innovation than other options because the incentive was proportional to the research effort.²⁴²

An article in *Bloomberg Business* in June 2015 said that the US lawmakers were exploring a new tax break known as a patent box or innovation box that would benefit companies already adept at avoiding taxes but there were many different voices.²⁴³ The innovation box was attractive to both parties because they worried that companies could easily move income outside the US and chase the low-tax heavens.²⁴⁴ *Bloomberg* stated that the US patent box could not compete with single-digit tax rates some firms may get abroad but could attract companies to locate their intellectual property and potentially more research jobs in the US while the tax rates was 10 percent to 15 percent in Europe.²⁴⁵ However, some people still worry about adopting the patent box.²⁴⁶ The reason was that they would have trouble getting their income inside the patent box so it could qualify for lower rates and they would have little if any guarantee that Congress would come back and cut their tax rates.²⁴⁷ Critics said that innovation box did not necessarily create incentives for new investment and companies relying on older intellectual property like cartoon character could gain

²³⁵ *Ibid.*

²³⁶ *Ibid.*

²³⁷ *Ibid.*

²³⁸ *Ibid.*

²³⁹ Marty Sullivan, "Patent Box: Good Intentions Gone Bad", *Tax Analysts*(8 June 2015), online:< <http://www.taxnotes.com/document/patent-box-good-intentions-gone-bad> >.

²⁴⁰ *Ibid.*

²⁴¹ *Ibid.*

²⁴² *Ibid.*

²⁴³ Latest US Tax Break Fad Means Today's Winners Would Score Anew, *Bloomberg Business* (24 June 2015),

online:<<http://www.bloomberg.com/news/articles/2015-06-24/latest-u-s-tax-break-fad-means-today-s-winners-would-score-anew>>.

²⁴⁴ *Ibid.*

²⁴⁵ *Ibid.*

²⁴⁶ *Ibid.*

²⁴⁷ *Ibid.*

windfall benefits.²⁴⁸

2.4 Academic and practitioner commentary

Robert D. Atkinson, the founder and president of the Information Technology and Innovation Foundation, and Scott Andes, a senior policy analyst at the Metropolitan Policy Program at the Brookings Institution, said in October 2011 that a patent box reduced the corporate tax rate on qualified IP would provide firms with much stronger incentives to innovate and produce in the United States.²⁴⁹ The United States faced intense global competition for economic advantage especially in innovation-based and high wage industries in recent years.²⁵⁰ Furthermore, the economy was based more on intellectual property and innovation, in the meantime, intellectual property was mobile that companies could perform R&D and develop patents around the world.²⁵¹ Accordingly, they believed that the US should establish its new tax policy like the patent box to attract innovation-based businesses and promote both research and commercialization of these businesses.²⁵² In the authors' opinion, a patent box would spur the creation and location of more innovation-based jobs in the United States if a patent box were designed in a way that linked the incentive to the conduct of R&D and production of patented products domestically.²⁵³ Additionally, the authors thought that the patent box could help knowledge-based establishments located in the United States compete against establishments in other countries with robust innovation incentives by providing a lower tax rate.²⁵⁴

Mihir A. Desai, the Mizuho financial group professor of finance at Harvard Business School and a professor of law at Harvard Law School, supported the idea that United States should adopt the patent box in 2012.²⁵⁵ He said that the patent box could lure innovative activities to the US by providing a lower tax rate.²⁵⁶ Desai noted that the patent box would promote the high-quality domestic jobs because this tax regime taxed returns to intellectual property at a preferential rate as long as the intellectual property was developed and employed within the United States.²⁵⁷

Khurram Naik, an associate at Polsinelli PC, said that the US should introduce its own the patent box taxation scheme to provide incentives for innovative use of patents in 2012.²⁵⁸ The author believed that the patent box could provide incentives to

²⁴⁸ *Ibid.*

²⁴⁹ Robert D. Atkinson & Scott Andes, "Patent Boxes: Innovation in Tax Policy and Tax Policy for Innovation", The Information Technology and Innovation Foundation (October 2011).

²⁵⁰ *Ibid* at 1.

²⁵¹ *Ibid* at 1.

²⁵² *Ibid* at 1.

²⁵³ *Ibid* at 2.

²⁵⁴ *Ibid* at 2.

²⁵⁵ Mihir A. Desai, "A Better Way to Tax US Businesses", Harvard Business Review (July-August 2012).

²⁵⁶ *Ibid* at 6.

²⁵⁷ *Ibid* at 6.

²⁵⁸ Khurram Naik, "For Sale. Patents. Never Used: Gaps In the Tax Code for Patent Sales", The John

companies with a lower tax rate compared to the normal corporate tax rate to produce and develop intellectual capitals domestically.²⁵⁹ The difference between R&D credits and the patent box was that R&D credits encouraged companies to produce patents and the patent box provided companies with incentives to develop uses for their patents according to Naik.²⁶⁰ Additionally, the US taxes global income domestically and has to compete with other nations especially those of the similar economic profiles like UK who has almost 10% lower corporate tax rate.²⁶¹ The patent box could provide companies with incentives to retain its innovative activities and innovate using intellectual property domestically to improve the US competitiveness.²⁶²

Jason M. Brown, the associate managing editor of *The International Lawyer*, said that the US should consider several factors before ultimately adopting the patent box as a proper answer to the innovation in 2012.²⁶³ The author referred to the patent box as the latest tool in international competition to encourage domestic innovation and commercialization.²⁶⁴ He believed that the US should design its own the patent box to re-position the US as the worldwide leader in high-tech research and manufacturing.²⁶⁵ The author suggested lawmakers design a simple patent box while remaining competitive by providing an effective tax rates, scope of income and scope of intellectual property.²⁶⁶ The author also believed it important to establish a firm connection between gaining the tax credits and doing domestic research and commercialization activities inside the country.²⁶⁷ This connection would ensure that the patent box does not merely become a heaven for holding companies but also encourage the active development and commercialization of new intellectual property.²⁶⁸

Daniel Hemel, who received a JD from Yale Law School in 2012, and Lisa Larrimore Ouellette, who received a JD from Yale Law School in 2011, claimed that the patent box was a tax policy tool that could leverage the special advantage to the patent system in December 2013.²⁶⁹ They noted that the patent box was different from the R&D tax credits because of the timing that R&D tax credit was applied when the expenses occurred and the patent box was applied when income was earned.²⁷⁰ Thus,

Marshall Law School Review of Intellectual Property Law (Spring 2012).

²⁵⁹ *Ibid* at 6.

²⁶⁰ *Ibid* at 5.

²⁶¹ *Ibid* at 5.

²⁶² *Ibid* at 6.

²⁶³ Jason M. Brown, “Patent Box Taxation: A Comparison of Four Recent European Patent Box Tax Regimes and an Analytical Consideration of If and How the United States Should Implement Its Own Patent Box”, *The International Lawyer* (Fall 2012).

²⁶⁴ *Ibid* at 22.

²⁶⁵ *Ibid* at 22.

²⁶⁶ *Ibid* at 22.

²⁶⁷ *Ibid* at 22.

²⁶⁸ *Ibid* at 22.

²⁶⁹ Daniel Hemel & Lisa Larrimore Ouellette, “Beyond the Patents-Prizes Debate”, *Texas Law Review* (December 2013).

²⁷⁰ *Ibid* at 17.

the patent box had a special advantage for the patents which would influence companies to decide which inventions were worth pursuing and which projects were most likely to yield the inventions.²⁷¹ Hemel believed the lost revenue caused by the patent box could be offset by general tax revenue.²⁷²

W. Wesley Hill, a CPA and a member of the Alabama State Bar and J. Sims Rhyne, a member of the Alabama State Bar, they expressed their concerns about adopting a patent box regime to the United States in *IDEA: The Intellectual Property Law Review* in 2013.²⁷³ The article listed six concerns with adoption of a United States patent box.²⁷⁴ First, policy makers must assess the weakness of the patent box that this tax regime may attract patent trolls.²⁷⁵ Through the *eBay Inc. v. MercExchange LLC* case determined by Supreme Court of the United States, Justice Kennedy described that the patent trolls were an industry developed in which firms used their patents not as a basis for producing and selling goods but for obtaining licensing fees.²⁷⁶ The second concern was about the expansion of patented subject matter.²⁷⁷ A United States patent box could be the incentive to expand the boundaries of patentable subject matter to maximize the tax savings on income earned from newly developed technologies.²⁷⁸ The third concern was that the patent box might promote patents over other IP forms.²⁷⁹ If the patent box is a patent-only approach, the regime will encourage patent above trade secret protection while trade secrecy law may be a superior choice in protecting technology innovation.²⁸⁰ The fourth concern is that the patent box may create a two-tier tax regime.²⁸¹ The patent box may become a two-tier tax regime that a preferential tax rate would be provided for businesses holding patents and a higher tax rate for businesses without patents.²⁸² The fifth concern of adopting a patent box is about the efficiencies on the patent boxes because there was lack of evidence.²⁸³ There were few evidence on job creating effects of the patent box but some evidence showed that the patent boxes did not make up for the accompanying lost tax revenues in the short term and government needed to face the immediate budget shortfalls.²⁸⁴ The sixth, the role of a patent box as another tax expenditure in the United States corporate tax system would raise another concern.²⁸⁵ It is unclear whether targeted tax incentives like the patent box is a tax regime or a tax

²⁷¹ *Ibid* at 17.

²⁷² *Ibid* at 26.

²⁷³ W. Wesley Hill & J. Sims Rhyne, “Opening Pandora’s Patent Box: Global Intellectual Property Tax Incentives and Their Implications for the United States”, *IDEA: The Intellectual Property Law Review* (2013).

²⁷⁴ *Ibid* at 13.

²⁷⁵ *Ibid* at 13.

²⁷⁶ *Ibid* at 13; *eBay Inc. v. MercExchange LLC*, 547 U.S. 388 (2006).

²⁷⁷ *Ibid* at 15.

²⁷⁸ *Ibid* at 15.

²⁷⁹ *Ibid* at 17.

²⁸⁰ *Ibid* at 17.

²⁸¹ *Ibid* at 17.

²⁸² *Ibid* at 18.

²⁸³ *Ibid* at 18.

²⁸⁴ *Ibid* at 18.

²⁸⁵ *Ibid* at 18.

expenditure.²⁸⁶ Tax expenditures are for selected industries, which are really spending programs instead of tax rollbacks and lost revenue must be financed by other means like raising tax rate on somebody else.²⁸⁷ The patent box regime as a targeted-tax relief may produce an increased burden on the rest of industries which are not selected to get the tax credit.²⁸⁸

The article edited by Jenice Robinson was published in the *Citizens for Justice* in June 2015 said that the patent box was wholly unnecessary and was a bad policy idea.²⁸⁹ The article said that it was unfortunate that some politicians were willing to oblige the patent box regime because the patent box was a bad idea.²⁹⁰ The author presented four main reasons to prove that the patent box was a bad policy.²⁹¹ The first, the patent box would be very expensive and open a new loophole in the corporation tax code.²⁹² It would cost a lot to narrowly define income that was contributable to intellectual property while companies would have to lobby for a broader patent box definition to make as much of their income to meet the definition.²⁹³ The second reason was that the US tax code had already offered extremely generous tax incentives for companies performing research.²⁹⁴ The US had provided many billions in tax incentives for research activities though it did not have the patent box regime.²⁹⁵ The third was that US should not follow suit because the patent box regimes were already promoting a damaging global tax race to the bottom.²⁹⁶ The fourth reason was that revenue reduced from the corporate tax incentives could be used directly to fund and support research and innovation.²⁹⁷ The most straightforward way to boost research and innovation would be to expand direct research funding by the federal government which could also avoid the problem of subsidies for “research” had little to do with real scientific advances.²⁹⁸ If Congress’s priority was research and innovation, it should raise more revenue from corporations to undo the cuts in federal research’s spending.²⁹⁹

2.5 Further thoughts and lingering questions

Besides the patent box, what would companies concern before they decided to locate or relocate? The patent box can attract companies by providing the lower tax rate.

²⁸⁶ *Ibid* at 19.

²⁸⁷ *Ibid* at 19.

²⁸⁸ *Ibid* at 19.

²⁸⁹ Jenice Robinson edited, “A ‘Patent Box’ Would Be a Huge Step Back for Corporate Tax Reform”, *Citizens for Tax Justice* (4 June 2015), online:<<http://ctj.org/pdf/patentboxstepback.pdf>>.

²⁹⁰ *Ibid* at 1.

²⁹¹ *Ibid* at 1.

²⁹² *Ibid* at 2.

²⁹³ *Ibid* at 2.

²⁹⁴ *Ibid* at 3.

²⁹⁵ *Ibid* at 3.

²⁹⁶ *Ibid* at 4.

²⁹⁷ *Ibid* at 4.

²⁹⁸ *Ibid* at 4.

²⁹⁹ *Ibid* at 4.

However, I think that the tax rate is only one of the factors that companies need to consider. To locate its research and investment in a country, companies should also consider educated labor, infrastructure construction and science achievement. For educated labor, companies may save time and money to train their employees if these employees already have good education. For infrastructure construction, companies will be able to use these infrastructure construction directly like the highways, hospitals, and etc. Companies can deliver their goods to anywhere under a convenient traffic condition. For science achievement, companies will get the most frontier studies and research instruments. In the United States, there are many educated employees, complete infrastructure construction and frontier science research achievements. I believe these factors are already very attractive to multinational companies and will improve US competitiveness. Adopting the patent box may not be necessary because it is not the only way to improve US competitiveness.

How does the government balance the budget after adopting the patent box? Many believe there will be a large loss after adopting the patent box.³⁰⁰ I do not mean that the patent box is the only reason or the main reason for fiscal imbalance. I mean if a country is in the fiscal imbalance, the patent box may intensify this crisis. Though many may argue that the patent box will bring spillovers, there will likely be a fair amount of time that passes before the patent box could create these spillovers. Any state adopting the patent box will need to compensate for lost revenue in the short term and I am concerned that full adoption of a patent box regime could be detrimental to the US in the short term. The patent box may improve the competitiveness but there is a large cost.

Along the same line as my previous question, where could revenue come from to compensate for that loss as a result of the patent box? The question will be whether the patent box deserves the cost. The United States could borrow money from other countries to cover the deficit and it has borrowed money in the past. If the loss of the revenue caused by the patent box could not be fixed after a long term, the government would like to print more dollars to pay back its debt. The US dollar plays a very important role in the global economic and will cause a serious chain reaction. The loss of revenue caused by the patent box may be fixed by individual citizens. The less tax companies need to pay, the more tax someone in the country need to pay back. The revenue loss may lead to increase the tax rate on companies without patents. I recognize that the intellectual property is very important in the innovation but I believe that other industries also can contribute to the economic growth like service industries and tourist industries. The increase of the tax rate may lead to these industries offshore and break the industry equilibrium, which does not help economic growth.

3. Patent Box Used in the United Kingdom

³⁰⁰ *Supra* note 243 at 1.

3.1 Legislation

The United Kingdom has a patent box.³⁰¹ The UK patent box provides lower corporate tax rate on profits earned from patented inventions and certain other innovations from April 2013.³⁰² The lower rate of the corporate tax to be applied is 10%.³⁰³ The patent box regime requires qualifying patents, qualifying companies, and qualifying income.³⁰⁴

Qualifying patents must be exclusively licensing-in and granted by the UK Intellectual Property Office, the European Patent Office, or the countries in the European Economic Area (including Austria, Bulgaria, Czech Republic, Denmark, Estonia, Finland, Germany, Hungary, Poland, Portugal, Romania, Slovakia and Sweden).³⁰⁵ The exclusive license enables the licensee to be the only one who can make use of the patent in the fields specified in the license even the patentee is excluded.³⁰⁶ In some cases when EU or domestic competition laws may prevent companies who have the exclusive license from enjoying the full rights of the license, companies' competitors may get the patented items from an EU country.³⁰⁷ In HMRC's view, though, companies are prevented from enjoying the full rights of the license as mentioned above, this license is still the exclusive license.³⁰⁸

Companies need to be elected to benefit from the reduction of the tax rate.³⁰⁹ The election should be no later than 2 years after the end of the accounting period when the relevant income arose.³¹⁰ Besides, there are three main conditions.³¹¹ First, companies must own the qualifying patents or the exclusive rights to the qualifying patents.³¹² Second, companies need to receive the income when they are still qualified and have the patent box election in effect.³¹³ Third, the company should meet the active ownership condition if the company is a member of the group.³¹⁴ "Active ownership" means the company should contribute to the development of the patents itself or act an important role in the management activities.³¹⁵

³⁰¹ UK, HMRC, "Business tax guidance-Corporation Tax: The Patent Box", online: <<https://www.gov.uk/corporation-tax-the-patent-box>>.

³⁰² *Ibid.*

³⁰³ *Ibid.*

³⁰⁴ *Ibid.*

³⁰⁵ *Ibid.*

³⁰⁶ HMRC, CIRD210120, "Patent Box: qualifying companies: exclusive license: meaning of 'exclusive license'",

online:<<http://www.hmrc.gov.uk/manuals/cirdmanual/CIRD210120.htm>>.

³⁰⁷ *Ibid.*

³⁰⁸ *Ibid.*

³⁰⁹ HMRC, CIRD210000, "Patent Box: qualifying companies: contents", online:<<http://www.hmrc.gov.uk/manuals/cirdmanual/CIRD210000.htm>>.

³¹⁰ *Ibid.*

³¹¹ *Ibid.*

³¹² *Ibid.*

³¹³ *Ibid.*

³¹⁴ HMRC, CIRD210210, "Patent Box: qualifying companies: groups: active ownership condition", online:<<http://www.hmrc.gov.uk/manuals/cirdmanual/CIRD210210.htm>>.

³¹⁵ HMRC, CIRD210210, CTA10/S357BE "Patent Box: qualifying companies: groups: active

Qualifying income has five sub-categories. The first is sales income.³¹⁶ The sales income is income from the sales of qualifying items which are inventions claimed in the patent by the company. Second are the license fees and royalties.³¹⁷ The third is the income from the sale or other disposal of a qualifying patent right or exclusive license in respect of such a right.³¹⁸ Fourth is any income payable to the company from an infringement or alleged infringement of the company's qualifying IP rights held at the time of the infringement or alleged infringement.³¹⁹ Fifth, the qualifying income includes infringement income, damages, insurance proceeds or other compensation.³²⁰

The patent box regime is about to change because the UK and Germany had agreed to advocate the negotiations on new rules for preferential IP regimes within the G20/OECD BEPS Project.³²¹ This agreement used the modified nexus approach that corporations could use the patent box only if they showed that significant research and development occurred in that same jurisdiction.³²² This proposal will lead to the closure of all existing regimes and create new entrants in June 2016 and the abolition of the patent box by June 2021.³²³

In the OECD Base Erosion and Profit Shifting Project (BEPS), the action five included the agreement on modified nexus approach for IP regimes.³²⁴ There were concerns about how to calculate qualifying R&D expenditure, grandfathering

ownership condition”,

online:<<http://www.hmrc.gov.uk/manuals/cirdmanual/CIRD210210.htm>>.

³¹⁶ HMRC, CIRD220170, CTA10/S357CC(2) , “Patent Box: relevant IP profits: relevant IP income: head 1 : sales income”,

online:<<http://www.hmrc.gov.uk/manuals/cirdmanual/CIRD220170.htm>>.

³¹⁷ HMRC, CIRD220200 , CTA10/S357CC(6), “ Patent Box: relevant IP profits: relevant IP income: head 2: licence fees and royalties”,

online:<<http://www.hmrc.gov.uk/manuals/cirdmanual/CIRD220200.htm>>.

³¹⁸ HMRC, CIRD220220, CTA10/S357CC(7), “Patent Box: relevant IP profits: relevant IP income: head 3: proceeds of realization”,

online:<<http://www.hmrc.gov.uk/manuals/cirdmanual/CIRD220220.htm>>.

³¹⁹ HMRC, CIRD220230 , CTA10/S357CC(8) & (9), “Patent Box: relevant IP profits: relevant IP income: heads 4 and 5: infringement income, damages, insurance proceeds or other compensation”, online:<<http://www.hmrc.gov.uk/manuals/cirdmanual/CIRD220230.htm>>.

³²⁰ HMRC, CIRD220160 -, CTA10/S357CC, “Patent Box: relevant IP profits: relevant IP income: overview”,

online:<<http://www.hmrc.gov.uk/manuals/cirdmanual/CIRD220160.htm>>.

³²¹ HM Treasury, HMRC and The Rt Hon George Osborne MP, “Germany and UK agree joint proposal for rules on preferential IP regimes”(11 November 2014), 2010 to 2015 Conservative and Liberal Democrat Coalition Government,

online:<<https://www.gov.uk/government/news/germany-and-uk-agree-joint-proposal-for-rules-on-preferential-ip-regimes>>; OECD, *Action 5: Agreement on Modified Nexus Approach for IP Regimes*, online:<

<http://www.oecd.org/ctp/beps-action-5-agreement-on-modified-nexus-approach-for-ip-regimes.pdf>>.

³²² *Ibid.*

³²³ *Ibid.*

³²⁴ OECD, *Action 5: Agreement on Modified Nexus Approach for IP Regimes*,

online:<

<http://www.oecd.org/ctp/beps-action-5-agreement-on-modified-nexus-approach-for-ip-regimes.pdf>>.

provisions, and the tracking and tracing of expenditure.³²⁵ Businesses using the patent box regimes might see the reduction in income receiving preferential treatment.³²⁶ The action required the countries with the patent boxed to close to the new entrants by the end of June 2016 and abolish the old patent box regime by the 30 June 2021.³²⁷

3.2 Government official, government agency, and legislator commentary

In the “Written Evidence submitted by the Chartered Institute of Taxation (CIOT) and the Low Incomes Tax Reform Group (LITRG) to the Pre-budget Report 2009”, CLOT and LITRG said that they very welcomed the announcement of introducing the patent box regime into the UK’s tax system in 2009.³²⁸ They thought it was disappointed that the patent box had to wait till 2013.³²⁹ CLOT and LITRG believed that the patent box was a good sign for the UK to have a more modern, internationally competitive corporate tax system.³³⁰ They did not expand on this inquiry.

The “Consultation on the Patent Box” in the HM Treasury and the HMRC introduced the patent box regime in June 2011.³³¹ According to this consultation, the aim of the patent box was to provide an additional incentive for companies to retain, commercialize existing patents, and develop new, innovative, patented products in the UK.³³² The consultation mentioned that the government had received many representations to extend the patent box to other forms of intellectual property.³³³ The government’s opinion was that there was no plan to extend the scope of the patent box unless there was strong evidence showing that action was necessary to be taken to make the UK tax regime more competitive.³³⁴

David Gauke, Exchequer Secretary to HM Treasury, believed that the patent box regime was the key initiative to make the UK tax system more competitive for innovative high-tech companies.³³⁵ He expressed his opinion in the Foreword of the Consultation on the Patent Box in June 2011.³³⁶ Gauke claimed that the patent box played an important role in creating the most competitive tax system in the G20 in

³²⁵ *Ibid* at 3.

³²⁶ *Ibid* at 3.

³²⁷ *Ibid* at 3.

³²⁸ UK, HC, “Written Evidence submitted by the Chartered Institute of Taxation (CIOT) and the Low Incomes Tax Reform Group (LITRG) to the Pre-budget Report 2009”, *Treasury Committee Publications*(2009-10), online:<

<http://www.parliament.the-stationery-office.co.uk/pa/cm200910/cmselect/cmtreasy/180/180we03.htm>>

³²⁹ *Ibid*.

³³⁰ *Ibid*.

³³¹ UK, HMRC, Consultation on the Patent Box (June 2011).

³³² *Ibid* at 5.

³³³ *Ibid* at 6.

³³⁴ *Ibid* at 6.

³³⁵ *Ibid* at 3.

³³⁶ *Ibid* at 3.

order to drive the private sector growth.³³⁷ Though the UK had a long and proud history in great inventions and discoveries, Gauke pointed out that things had changed in recent years such that many more companies were choosing to move their patents offshore.³³⁸ Many valuable jobs in development, manufacturing and exploitation of patented technologies were attracted to other countries with more favorable corporate tax regimes.³³⁹ In Gauke's view, the patent box regime would reverse the trend of moving offshore and help re-establish the UK's position as an attractive location for innovative industries.³⁴⁰ He believed that the patent box would encourage the businesses across a wide range of sectors to invest in the UK, generate growth and create more jobs in the UK.³⁴¹

In the debates on "Written Answers to Questions" in January 2013, Jo Swinson from the Business Innovation & Skills (BIS) said that HMRC and the BIS were actively promoting the patent box and encouraging companies to consider joining the patent box election.³⁴² He claimed that some companies indicated they would increase the patent filing to the Intellectual Property Office (IPO) responding to the patent box relief.³⁴³ In the debates, he did not expand this inquiry.³⁴⁴

George Gideon Oliver Osborne, the Chancellor of the Exchequer and Second Lord of the Treasury, insisted that the patent box should focus on the patents because patents were very important to the high-tech research and development in September 2014.³⁴⁵ He also believed that the patent box was a great deal that would help protect their vital scientific research and set a good example for countries who wished to have this regime.³⁴⁶

The report, "HMRC's progress in improving tax compliance and preventing tax avoidance," ordered by the House of Commons and published in November 2014, Margaret Hodge as the Member of the Parliament representing Barking and Dagenham said that the members of the Committee of Public Accounts were not convinced that the expected benefits of the patent box regime had materialized.³⁴⁷

³³⁷ *Ibid* at 3.

³³⁸ *Ibid* at 3.

³³⁹ *Ibid* at 3.

³⁴⁰ *Ibid* at 3.

³⁴¹ *Ibid* at 3.

³⁴² UK, *Commons Debates*, Written Answers to Questions (16 January 2013), online:<<http://www.publications.parliament.uk/pa/cm201213/cmhsrd/cm130116/text/130116w0001.htm>>.

³⁴³ *Ibid*.

³⁴⁴ *Ibid*.

³⁴⁵ Simon Bowers, "Osborne's patent box tax break policy likely to divide G20", *The Guardian* (17 September 2014), online:<<http://www.theguardian.com/business/2014/sep/17/osborne-patent-box-tax-break-g20>>.

³⁴⁶ Ulrika Lomas, "UK Agrees With Germany To Limit Patent Box Regime", *Tax-News*(13 November 2014), online:<http://www.taxnews.com/news/UK_Agrees_With_Germany_To_Limit_Patent_Box_Regime_66375.html>.

³⁴⁷ UK, HC, "Report of HMRC's progress in improving tax compliance and preventing tax avoidance",

She believed that the patent box generated little domestic investment and job creation in the UK in return for the tax benefits the companies received from the patent box.³⁴⁸ In her opinion, the tax reliefs like the patent box would make it easier for companies to avoid paying tax in the jurisdiction where they made a profit.³⁴⁹ She suggested that HM Treasury and HMRC providing the Committee with details of progress that the international tax structures were exploited and setting out the costs and the benefits of the patent box and other changes to the UK's tax reform.³⁵⁰

3.3 Journalist commentary

Damian Reece was Head of Business for *the Telegraph* media group who said that the patent box with lower tax rate would start to make the UK more attractive than the US or even the Far East in December 2011.³⁵¹ The author said that the patent box would lower the tax rate on the profits from the patents registered in the UK.³⁵² Reece also noted that the patent box would enhance the UK's outstanding reputation in the life science area and improved the links between universities and businesses.³⁵³

Groom Brian said that the UK government believed that the tax cut like the patent box would provide businesses with the confidence to invest and expand in the UK in *Financial Times* in March 2012.³⁵⁴ He said that government's reforms to the corporate tax like the patent box would save businesses much money.³⁵⁵ The author believed that changes like the patent box would improve the UK's attractiveness to the multinational companies.³⁵⁶ It was also mentioned that according to the Treasury, the UK would have the lowest main corporate tax rate in the G7 and the fourth lowest in the G20 assuming that other countries did not cut their rates.³⁵⁷

Dyson James said that the patent box opened businesses' eyes to the benefits of long-term R&D activities in the *Financial Times* in September 2013.³⁵⁸ He said that

³⁴⁸ HC 458, in *Sessional Papers* (2014-15), 12.

³⁴⁹ *Ibid* at 12.

³⁵⁰ *Ibid* at 12.

³⁵¹ Damian Reece, "Drugs Proposals Don't Go Far Enough", *The Telegraph*(6 December 2011), online:<<http://www.telegraph.co.uk/finance/comment/damianreece/8937321/Drugs-proposals-dont-go-far-enough.html>>.

³⁵² *Ibid*.

³⁵³ *Ibid*.

³⁵⁴ Groom Brian, "Cut Aims to Raise Company Spending", *Financial Times*(22 March 2012), online:<<http://search.proquest.com.proxy3.library.mcgill.ca/docview/931405530/BBA45243229140AE/PQ/325?accountid=12339>>.

³⁵⁵ *Ibid*.

³⁵⁶ *Ibid*.

³⁵⁷ *Ibid*.

³⁵⁸ Dyson James, "Britain Stands on the Cusp of a New Industrial Revolution", *Financial Times*(7 September 2013), online:<<http://search.proquest.com.proxy3.library.mcgill.ca/docview/1439951110/BBA45243229140AEPQ/381?accountid=12339>>.

the patent box was a long-term policy supporting long-term projects.³⁵⁹ Thanked to the patent box, the author mentioned that the pharmaceutical company GlaxoSmithKline had been encouraged to transferred 150 overseas research projects to the UK.³⁶⁰ James held the opinion that for the long-term growth, it was important to have skills to call on in the UK by attracting the most high-tech of companies and encouraging them to stay in the UK.³⁶¹ The patent applicants rose 29 percent in 2011 due to the patent box policy and the investors reacted positively to the patent box, which showed that the patent box had positive effects on the economic growth in the UK.³⁶²

David Simonds said that the EU Commission could try the UK if the EC was looking for the tax heavens in June 2014 in *The Guardian*.³⁶³ He said that the current crop of nasty multinationals exploited loopholes in the rules in a “corrosive manner”.³⁶⁴ The author mentioned that the Apple, Starbucks, and Fiat had struck with the taxman in Ireland, Netherlands, and Luxembourg.³⁶⁵ However, though these three companies denied that they had special treatments from the government.³⁶⁶ The EC believed these companies had enjoy some kind of the tax treatment.³⁶⁷ The author said that Starbucks may shift its headquarters from EU to the UK as well as Pfizer because the UK had a very clear policy in tax competition for multinationals known as the patent box which gave tax breaks to IP owners and was regarded as tax heaven.³⁶⁸

David Quentin, the senior adviser to the Tax Justice Network, along with Nicholas Shaxson, the author of Treasure Islands, claimed that the UK patent box was a nasty, disingenuous and hypocritical in *Naked Capitalism* in October 2014.³⁶⁹ They justified this sentiment in a three-fold manner. The first reason was that the UK had already offered generous R&D tax incentives targeting the technology-driven sectors and the patent box was just a further subsidy supplementing the eventual profits.³⁷⁰ The second was that the patent box rules were not structured to incent the creation of the new technology because companies could get the tax relief by bringing the existing

³⁵⁹ *Ibid.*

³⁶⁰ *Ibid.*

³⁶¹ *Ibid.*

³⁶² *Ibid.*

³⁶³ David Simonds, “If the European Commission is looking for tax havens, it could try the UK”, *The Guardian* (15 June 2014), online:<

[>](http://www.theguardian.com/business/2014/jun/15/european-commission-tax-havens-uk-apple-starbucks-fiat)

³⁶⁴ *Ibid.*

³⁶⁵ *Ibid.*

³⁶⁶ *Ibid.*

³⁶⁷ *Ibid.*

³⁶⁸ *Ibid.*

³⁶⁹ David Quentin & Nicholas Shaxson, “The ‘Patent Box’ – Proof That the UK is a Rogue State in Corporate Tax”, *Naked Capitalism*(3 October 2014), online:

<<http://www.nakedcapitalism.com/2014/10/david-quentin-nicholas-shaxson-patent-box-proof-uk-rogue-state-corporate-tax.html>>.

³⁷⁰ *Ibid.*

patents back from outside of the UK or exploiting the patents instead of creating new technology.³⁷¹ The third was that it was the very existence of intellectual property rights that contributed to the innovation so there was no need to have a special extra subsidy for the IP rights like the patent box.³⁷² Quentin and Shaxson held the view that cutting the companies' tax bill via the patent box did not directly achieve anything by way of innovation. Rather, the tax relief the patent box provides was a tool of wealth transfer to capital owners.³⁷³

Vanessa Houlder said that the UK agreed the deal on the patent box due to the international pressure in December 2014 in the *Financial Times*.³⁷⁴ Britain reached a compromise on the patent box with Germany in September 2014.³⁷⁵ The compromise restricted the tax break to R&D carried out in Britain, which would make it easier for businesses to qualify according to the author.³⁷⁶ Houlder said that the majority of the countries tried to find a "nexus approach" that limited the tax break to income from R&D carried out at the taxpayers' expense while the UK argued that the "nexus approach" was burdensome, impractical, and being contrary to the EU law.³⁷⁷ This compromise broke the row when the UK, Spain, Luxembourg, and Netherlands had refused to agree to curb on patent boxes aimed at stopping "harmful" tax competition which was supported by other 40 countries.³⁷⁸

Mathew Lynn is a financial columnist and author who said that the low tax was a factor of driving an innovative economic and the patent box could offer tax breaks for the innovation in *The Telegraph* in June 2015.³⁷⁹ Lynn held the opinion that inventors were very mobile and found out that some of the most important breakthroughs were made by immigrants.³⁸⁰ He also noted that the tax rate would highly influence the inventors' choices of settling the work.³⁸¹ The author believed that the higher the tax

³⁷¹ *Ibid.*

³⁷² *Ibid.*

³⁷³ *Ibid.*

³⁷⁴ Vanessa Houlder, "UK agrees deal on 'patent box' tax break", *Financial Times* (2 December 2014), online:<<http://www.ft.com.proxy3.library.mcgill.ca/intl/cms/s/0/d2c783dc-7a54-11e4-8958-00144feabdc0.html#axzz3fxo7NBjG>>.

³⁷⁵ *Ibid*; HM Treasury, HMRC and The Rt Hon George Osborne MP, "Germany and UK agree joint proposal for rules on preferential IP regimes"(11 November 2014), 2010 to 2015 Conservative and Liberal Democrat Coalition Government, online:<<https://www.gov.uk/government/news/germany-and-uk-agree-joint-proposal-for-rules-on-preferential-ip-regimes>>.

³⁷⁶ *Ibid.*

³⁷⁷ *Ibid.*

³⁷⁸ *Ibid.*

³⁷⁹ Mathew Lynn, "Want more inventors? Then try lowering the top rate of tax", *The Telegraph*(15 June 2015), online:<

<http://www.telegraph.co.uk/finance/11676069/Want-more-inventors-Then-try-lowering-the-top-rate-of-tax.html>>.

³⁸⁰ *Ibid.*

³⁸¹ *Ibid.*

rate was the fewer inventors would come to the country.³⁸² The patent box could provide with lower tax rate than the normal corporate rate to attract more inventors to the UK.³⁸³

3.4 Academic and practitioner commentary

Rachel Griffith, Helen Miller, and Martin O'Connell (all researchers at the Institute for Fiscal Studies), expressed their opinions on the patent boxes stating that the UK patent box was not a good idea in Institute for Fiscal Studies (IFS) in November 2010.³⁸⁴ The authors pointed out that the patent box would cause a large reduction in the UK tax receipts from the income derived from the patents due to the low tax rate.³⁸⁵ The patent box was targeted on the income from the patented technology rather than research itself as noted by the authors.³⁸⁶ Companies could use existing patents to get tax credits without the necessity to do new research on new patents.³⁸⁷ In addition, the authors believed that the patent box would add complexity to the tax system to assure that both income and costs were assigned to appropriate patents.³⁸⁸ To get the tax credits and develop its business in the meantime, companies may hold patent income in the UK without co-locating any real activity, which they felt made it difficult to assure the patent box to contribute to the innovation in the UK.³⁸⁹ Furthermore, the authors claimed that it was far from clear that any research resulted from the patent box would take place in the UK.³⁹⁰

Rachel Griffith is a Deputy Research Director in the Institute for Fiscal Studies (IFS) and Helen Miller is the senior research economist in the IFS. They held the view that the patent box may not be good for the UK in the CEPR'S Policy Portal in June 2011.³⁹¹ The authors claimed that extent to which the UK patent box would be successful in investing the high-skilled activity domestically was highly uncertain because the creation of the new technology was not necessarily undertaken in the same country where the intellectual property was held for tax purposes.³⁹² The authors recognized that the patent box may have positive effects in a long term through an indirect way to make the government remain competitive to attract mobile activities.³⁹³ However, the authors pointed out that the patent box would tax mobile

³⁸² *Ibid.*

³⁸³ *Ibid.*

³⁸⁴ Rachel Griffith, Helen Miller & Martin O'Connell, "The UK will introduce a Patent Box, but to whose benefit?" Institute for Fiscal Studies (30 November 2010), online: <<http://www.ifs.org.uk/publications/5362>>.

³⁸⁵ *Ibid.*

³⁸⁶ *Ibid.*

³⁸⁷ *Ibid.*

³⁸⁸ *Ibid.*

³⁸⁹ *Ibid.*

³⁹⁰ *Ibid.*

³⁹¹ Rachel Griffith & Helen Miller, "Patent Boxes: An innovative way to race to the bottom?" CEPR'S Policy Portal (30 June 2011), online: <<http://www.voxeu.org/article/patent-boxes-innovative-way-race-bottom>>.

³⁹² *Ibid.*

³⁹³ *Ibid.*

activities in a lower rate than immobile activities that would allow a higher tax rate on these less mobile activities.³⁹⁴ Therefore, specifically setting a different rate for mobile income raised difficulties in implementing the patent box.³⁹⁵ The patent box may allow the UK government to maintain high tax rate and collect more revenue from less mobile forms of corporate income.³⁹⁶

Wendy Nicholls and Paul Smith of Grant Thornton UK welcomed the patent box regime to the UK but they raised some questions on the patent box in the *International Law Review* in October 2011.³⁹⁷ In authors' point of view, the patent box could encourage companies to continue invest and grow in the UK instead of relocating the R&D activities outside of the UK.³⁹⁸ The authors worried that the proposed patent box regime would be rather narrow in practice because the regime restricted the qualifying IP to be patented by the UK Intellectual Property Office or the EU patent office.³⁹⁹ For example, some software companies who are also highly innovative businesses may get minimal benefit from the patent box regime because most of their software is non-patented.⁴⁰⁰ Additionally, the UK's patent box regime is very complex and potentially the lowest overall and restricted tax benefits.⁴⁰¹ The reduced tax rate would be on profits derived from qualifying patents, which were narrowly defined, and the calculation of the relevant profits for patent box was very complex.⁴⁰² The authors hoped that the patent box would be proved to be a success, also hoped that the scope of the patent box would be widen to include other forms of the intellectual property rather than only includes patents.⁴⁰³

Michelmore LLP offered the general guide of the UK patent box in the *Jordan Publishing* in December 2012 and claimed that the patent box regime could help stimulate funding from qualifying companies to University based research projects.⁴⁰⁴ The article noted that the UK government introduced the patent box regime in order to drive the commercialization of intellectual property in the UK.⁴⁰⁵

Taylor Wessing an international law firm in the UK, wrote a report generally

³⁹⁴ *Ibid.*

³⁹⁵ *Ibid.*

³⁹⁶ *Ibid.*

³⁹⁷ Wendy Nicholls & Paul Smith, "Questions raised on the new UK patent box", *International Law Review* (October 2011).

³⁹⁸ *Ibid* at 31.

³⁹⁹ *Ibid* at 30.

⁴⁰⁰ *Ibid* at 30.

⁴⁰¹ *Ibid* at 31.

⁴⁰² *Ibid* at 31.

⁴⁰³ *Ibid* at 31.

⁴⁰⁴ Michelmore LLP, "Patent Growth in the UK: Patent Box", *Jordan Publishing* (11 December 2012),
online:<

http://www.jordanpublishing.co.uk/practice-areas/law-for-business/news_and_comment/patent-growth-in-the-uk-patent-box#.VZ2vVM9Vj5K>.

⁴⁰⁵ *Ibid.*

welcoming the patent box in January 2013.⁴⁰⁶ The article claimed that the UK patent box was advantageous in applying to profits arising from the sale of the patented products.⁴⁰⁷ The UK patent box was also advantageous in being applicable to the income from the licensing of the patented rights, proceeds from the sale of the patented rights, or an exclusive license mentioned in the article.⁴⁰⁸ However, the article also pointed out that the calculation of profits applied to the patent box was very complex.⁴⁰⁹ Additionally, the uncertainty generated from the wide definition of the “group” could discourage some companies from electing to apply the patent box regime.⁴¹⁰

David Lewis, the technology business development manager in the Cambridge Design Partnership, claimed that the patent box had the potential to deliver significant benefits for the UK companies, exploiting the commercialization of the patented technology with some uncertainty in June 2013.⁴¹¹ Lewis drew two tables about the number of patents from 2005-2010 from the data from European Patent Office Worldwide Patent Statistical Database (PATSTAT online).⁴¹² These two tables showed that there was a rise of numbers of patent applications within these countries with the patent box regime.⁴¹³ The author said that the patent box was likely to lead to the increased patenting by companies who tried to qualify more of their profits to the patent box according to the tables.⁴¹⁴ According to Lewis, in the short term, the gains would likely accrue for large companies, but the gains from the patent box would cover more kinds of companies in a long term.⁴¹⁵ Lewis held the opinion that the patent box may have the spillover effects in attracting the location of the IP and jobs to the UK and leading to an indirect increase in innovation, even where companies did not reinvest savings in R&D.⁴¹⁶

Allistair Booth, Arwen Berry, Seona Burnett, Stuart Richards, and Heather Self from the Pinsent Masons LLP expressed their considerations related to the patent box about the licensing transactions in *Business Development & Licensing Journal* in July 2013.⁴¹⁷ The authors believed that there would be a situation when licensees were

⁴⁰⁶ “UK Patent Box: Background to the Patent Box regime”, Taylor Wessing (January 2013), online: <http://www.taylorwessing.com/synapse/ti_patentbox.html>.

⁴⁰⁷ *Ibid* at 6.

⁴⁰⁸ *Ibid* at 6.

⁴⁰⁹ *Ibid* at 6.

⁴¹⁰ *Ibid* at 6.

⁴¹¹ David Lewis, “An industry report on the Patent Box initiative and its impact on UK innovation”, Cambridge Design Partnership (June 2013), online:<

<http://www.marks-clerk.com/MarksClerk/media/MCMediaLib/PDF's/Reports/Marks-Clerk-Patent-Box-Report-2013.pdf?ext=.pdf>>.

⁴¹² *Ibid* at 5.

⁴¹³ *Ibid* at 5.

⁴¹⁴ *Ibid* at 18.

⁴¹⁵ *Ibid* at 18.

⁴¹⁶ *Ibid* at 18

⁴¹⁷ Allistair Booth, Arwen Berry, Seona Burnett, Stuart Richards & Heather Self, “Patent Box related considerations for licensing transactions”, *Business Development & Licensing Journal* (July 2013).

unsuccessful in pushing through the relevant provisions to support their elections for the patent box.⁴¹⁸ Then the licensees may be provoked to try to offset their inability to call relief under the patent box by negotiating more favorable royalty payments, greater warranty, or indemnity protections in the license agreement.⁴¹⁹

Keith Hodkinson was the chairman of the Marks & Clerk International expressed his comments on the German Finance Minister's criticism of the patent box.⁴²⁰ He said that there was a difference between low tax regimes designed to attract virtual holding companies with their intangible assets and those tax regimes designed to reward good behaviors like R&D tax incentives and the patent box regime.⁴²¹ Hodkinson said that the UK patent box was not a harmful tax regime because it focused on the very narrow range of patented technology.⁴²² He noted that Germany also has a low base rate of the corporation tax and its R&D credits were very generous and German-location focused.⁴²³ Last, he pointed out that though the patent box would make the UK more attractive to companies to relocate, it would take a lot of years.⁴²⁴

Lisa Evers, a former member of the Centre for European Economic Research staff, Helen Miller, the senior research economist in the IFS, and Christoph Spengel, the Chair of General Business Administration and Business Taxation II Castle from Mannheim, noted that the UK patent box was challenged by European Commission because it may grant tax advantages without requiring any real economic activity or economic presence in the UK in *International Tax and Public Finance* in June 2014.⁴²⁵ The authors noted that most countries that had the patent box regime had the same concern as the UK—that the tax regime restricted the relief to the acquired intellectual property but did not require the substantive domestic economic innovative activity.⁴²⁶ Therefore, authors doubted whether the patent box would be effective in attracting real innovative activities.⁴²⁷ In addition, the effectiveness of the patent box may depend on the time.⁴²⁸ This is because that once more countries adopt the patent box regime to attract more mobile investments by providing low tax rate, the benefits to each country with the patent box would be likely to have diminished.⁴²⁹ If more and more countries adopted the patent box, the attractiveness would be less and less

⁴¹⁸ *Ibid* at 17.

⁴¹⁹ *Ibid* at 17.

⁴²⁰ Keith Hodkinson, "Reaction to German Finance Minister's Criticism of the Patent Box ", Mark & Clerks(10 July 2013),
online:<

<http://www.marks-clerk.com/Home/Knowledge-News/Articles/Reaction-to-German-Finance-Minister-s-criticism-of.aspx#.VaZZ989Vj5I>>.

⁴²¹ *Ibid*.

⁴²² *Ibid*.

⁴²³ *Ibid*.

⁴²⁴ *Ibid*.

⁴²⁵ Lisa Evers, Helen Miller & Christoph Spengel, "Intellectual property box regimes: effective tax rates and tax policy considerations", *International Tax and Public Finance* (June 2014).

⁴²⁶ *Ibid* at 24.

⁴²⁷ *Ibid* at 24.

⁴²⁸ *Ibid* at 24.

⁴²⁹ *Ibid* at 24.

for each country because the advantage of the low tax rate would disappear and every country was on the even ground again.

Dr. Paul Brady is a partner of Able & Imray and the head of the firm's London Chem-Bio team noted that the UK patent box was popular with high-tech businesses in an article published in the Able & Imray official website in 2014.⁴³⁰ The joint proposal made by the UK and Germany required for the qualifying expenditure on the product within the UK, which would place a cap on the profit that could qualify the deducted tax rate.⁴³¹ The author pointed out that it remained to be seen whether the OECD and other G20 countries would accept the proposal.⁴³² Brady claimed that the proposal was generally welcomed though because it would remove the uncertainties that debates around the UK and other patent box had created: the patent box would continue for a long term and the benefits under the patent box would continue to be available until at least 2021.⁴³³

David Ward from the Johnston Carmichael said that the current UK patent box was very generous and was about to change under the pressure of other EU countries in June 2015.⁴³⁴ He claimed that the UK patent box was designed to encourage the innovative businesses to commercialize their intellectual property domestically and it worked by giving super-deduction from taxable profits derived from the patents.⁴³⁵ Ward said that the patent box was seen as a key to stimulate the economic growth in the UK.⁴³⁶ However, Ward noticed that with so generous tax rate which was 10%, UK's patent box faced challenges from other countries especially the Germany who claimed that the UK patent box was not follow the spirit of EU anti-discriminatory rules and it encouraged the artificial diversion from other countries to the UK.⁴³⁷ To address the challenges, he pointed out that the patent box regime in the UK was about to be closed to new entrants from 30 June 2016 and be abolished by 30 June 2021 and implemented a replacement regime by then.⁴³⁸

3.5 Further thoughts and lingering questions

⁴³⁰ Paul Brady, "UK-Germany Joint Statement provides increased Certainty for Patent Box Regimes", Able & Imray (November-December 2014), online:<<http://www.patentable.co.uk/Increased%20Certainty%20for%20Patent%20Box%20Regimes.pdf>>.

⁴³¹ *Ibid.*

⁴³² *Ibid.*

⁴³³ *Ibid.*

⁴³⁴ David Ward, "The future of the UK's patent box regime", Johnston Carmichael (25 June 2015), online:<<http://www.jcca.co.uk/news-and-insights/publications/the-future-of-the-uk%20%99s-patent-box-regime/>>.

⁴³⁵ *Ibid.*

⁴³⁶ *Ibid.*

⁴³⁷ *Ibid.*

⁴³⁸ *Ibid.*

My first concern is that the definition of “real innovative activities” was unclear. Lissa Evers, Helen Miller, and Christoph Spengel claimed that the patent box regime might not encourage real innovative activity in the UK as mentioned above.⁴³⁹ Is the real innovative activity means doing research, making products, improving the patent, or any other activities? I think it is difficult to see if the patent box really contributes to increase the innovative activities in the UK because the standard is not easy to find. For example, the patent box may encourage investors to file their patents in the UK and it works. Is filing patents in the UK the innovative activities?

My second concern is about the proper time to develop the patent box for a country as a policy. The first country that developed the patent box may need to take the risk of failing and bear the negative effects. These effects may be on revenue loss, broken companies or others. The patent box could provide companies with a lower tax rate and this would lead to revenue loss. Small companies may not be able to apply for the patent box while big companies benefit from the patent box regime. The patent box may cause pressure on small companies too, potentially causing them to go bankrupt, sell off assets, or close altogether.

4. European Union and the Patent Box

4.1 Legislation

The report from Code of Conduct Group (Business Taxation) to the ECOFIN Council on 29 November 1999 discussed some of the concerns relating to the patent box.⁴⁴⁰ The Council and the representatives of the governments of the member states established the criteria that the Code of Conduct Group should base on to assess tax measures.⁴⁴¹ The first, the code of conduct concerned those measures that may affect the location of business activities in the community in a significant way.⁴⁴² In this respect, business activities included all activities carried out within a group of companies and the tax measures covered both laws and regulations or administrative practice.⁴⁴³ Second, the code of conduct concerned that tax measures providing for a significantly lower effective level of taxation than those levels generally applied to the member states were to be regarded potential harmful.⁴⁴⁴ This included taxation at a rate of zero.⁴⁴⁵

The EC initiated discussions about the patent box within the EU in its staff working document of research and innovative performance in EU member states and

⁴³⁹ *Supra* note 425 at 24.

⁴⁴⁰ EC, Code of Conduct, *Report from the Code of Conduct (Business Taxation) to the Council of the European Union*, SN 4901/99 (Brussels: 1999), online:< http://ec.europa.eu/taxation_customs/resources/documents/primarolo_en.pdf>.

⁴⁴¹ *Ibid* at 2.

⁴⁴² *Ibid* at 2.

⁴⁴³ *Ibid* at 2.

⁴⁴⁴ *Ibid* at 2.

⁴⁴⁵ *Ibid* at 2.

associated countries met in 2013, specifically looking at it in the UK.⁴⁴⁶ The EC said that the UK had not set a national R&D intensity target corresponding to request of the European Council.⁴⁴⁷ However, the patent box and an “ambitious public procurement policy” may succeed in reversing the negative trend of R&D activities when the R&D intensity experienced an initial fall.⁴⁴⁸ The UK R&D intensity was 1.77% of GDP in 2011 down from 1.86% and was 2% lower than the EU average.⁴⁴⁹ The R&D intensity trend in the UK showed an initial fall since 2000, a mild recovery from 2005 to 2009 and a recent decline.⁴⁵⁰ This Working Document mentioned that the hypothesis of the patent box was that this regime would “encourage firms to retain existing patents, develop new, innovative technologies and patent them, and to locate jobs and activities associated with patentable activities in the UK.”⁴⁵¹

In the final report of the study on R&D tax incentives by EU Commission in November 2014, the report claimed that it was unclear if the patent box worked.⁴⁵² The report said that a large body of literature had identified that multinational companies engaged in profit-shifting activities in order to benefit from the patent box to avoid paying tax.⁴⁵³ However, the patent box and other tax incentives for income generated by R&D could cause large decreases tax revenue for all governments including those engaging in the patent box regimes.⁴⁵⁴ This report also said that it was hard to make that argument that the patent box served the purpose of rewarding the firms for societal benefits from the innovation.⁴⁵⁵ According to the report, the patent box introduced a preferential tax rate for income from innovations that were already protected by Intellectual Property Rights (IPR’s).⁴⁵⁶ IPR’s allowed companies to capture a large part of the societal benefits, which made the need for a tax incentive like the patent box for protected innovations became unclear.⁴⁵⁷ The report believed that patent boxes’ impacts on innovation were difficult to evaluate empirically as “tax planning and tax competition induce measurement error in innovation indicators.”⁴⁵⁸

The Communication from the Commission to the European Parliament and the

⁴⁴⁶ Documents: Working Papers, *Research and Innovation performance in EU Member States and Associated countries – Innovation Union progress at country level* (SWD/2013/075 final), 52013SC0075, online:<

[http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1437168682202&uri=CELEX:52013SC0075>.](http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1437168682202&uri=CELEX:52013SC0075)

⁴⁴⁷ *Ibid.*

⁴⁴⁸ *Ibid.*

⁴⁴⁹ *Ibid.*

⁴⁵⁰ *Ibid.*

⁴⁵¹ *Ibid.*

⁴⁵² EC, Commission, “A Study on R&D Tax Incentives Final report” (Working Paper N. 52 – 2014), online:<http://ec.europa.eu/taxation_customs/resources/documents/taxation/gen_info/economic_analyses/tax_papers/taxation_paper_52.pdf>.

⁴⁵³ *Ibid* at 6.

⁴⁵⁴ *Ibid* at 6.

⁴⁵⁵ *Ibid* at 6.

⁴⁵⁶ *Ibid* at 6.

⁴⁵⁷ *Ibid* at 6.

⁴⁵⁸ *Ibid* at 6.

Council met in 2015 and mentioned five key areas for actions in a fair and efficient corporate tax system in the European Union.⁴⁵⁹ The second action was ensuring effective taxation where profits were generated.⁴⁶⁰ The communication said that certain preferential regimes were perceived to facilitate tax avoidance rather than genuinely encouraging economic activities in which the tax treatments were offered in particularly the patent boxes.⁴⁶¹ For example, a company may locate its real R&D activities in one country and locate its intellectual property in another country in order to avail the tax benefits like the patent box.⁴⁶² The communication claimed that it was necessary linking preferential tax regimes to where value was generated.⁴⁶³

Officially, the EU is skeptical of the use of patent boxes in countries within the Euro zone. This had been indicated by statements made by the EU commission that tax incentives like the patent box focusing on the mobile income rather than real economic activities might provide opportunities for an increase in harmful competition in the report of tax reforms in EU member states in 2014.⁴⁶⁴ The report said that the patent box distorted the geographical location of patents rather than increasing and underlying research and innovation activities.⁴⁶⁵

4.2 Government official, government agency, and legislator commentary

In the 2013, the EC “Specification Attached to the Open Invitation to Tender n° TAXUD/2012/AO-13 for the Provision of Effective Tax Rates in the Context of An Enlarged European Union and Related supporting Services” mentioned that new tax systems, which affected the tax burden on the R&D investments like the patent box had been established in recent years.⁴⁶⁶ However, the effective tax rate had not clear modelled the influence of the patent box and other provisions on the effective tax burdens.⁴⁶⁷ This specification suggested that analysis was needed to evaluate the effective tax effects of the patent box and other measures on multinational companies with regard to the tax burden on investment in R&D activities.⁴⁶⁸

⁴⁵⁹ EC, Commission, Communication from the Commission to the European Parliament: A Fair and Efficient Corporate Tax System in the European Union: 5 Key Areas for Action (Brussels, 17 June 2015),
online:<

[⁴⁶⁰ *Ibid.*](http://eur-lex.europa.eu/resource.html?uri=cellar:5e1fd1b0-15b7-11e5-a342-01aa75ed71a1.0003.03/D OC_1&format=HTML&lang=EN&parentUrn=CELEX:52015DC0302 >.</p>
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⁴⁶¹ *Ibid.*

⁴⁶² *Ibid.*

⁴⁶³ *Ibid.*

⁴⁶⁴ European Commission, “Tax Reforms in EU Member States: Tax policy challenges for economic growth and fiscal sustainability 2014 Report”, European Economy (2014).

⁴⁶⁵ *Ibid.*

⁴⁶⁶ EC, Commission, *Specifications attached to the Open invitation to tender n° TAXUD/2012/AO-13 for the provision of effective tax rates in the context of an enlarged European Union and related supporting services* (2012),

online:<http://ec.europa.eu/taxation_customs/resources/documents/common/tenders_grants/tenders/ao-2012-13/specifications_en.pdf>.

⁴⁶⁷ *Ibid* at 2.

⁴⁶⁸ *Ibid* at 2.

The EU Commission reviewed the patent box regime in Spain in 2008 and concluded that the patent box did not constitute state aid.⁴⁶⁹ The EC requested that Luxembourg to provide specific information to assess whether certain tax practices favored certain companies in Luxembourg in breach of EU state aid in 2014.⁴⁷⁰ The EC had received indications that the patent box regimes seemed to mainly benefit highly mobile businesses and do not trigger significant additional research and development activity.⁴⁷¹ It is important to note that the EC was gathering information to assess whether the regimes like the patent box regime granted a selective advantage to a particular group of companies in breach of EU state aid rule.⁴⁷²

The EC claimed to facilitate tax compliance and tackle non-compliance in the general assembly of General Assembly of the Intra-European Organization of Tax Administrations (IOTA) in July 2014.⁴⁷³ The EC wanted to use every tool regardless of state aid rules or the code of conduct to ensure every member states play fair amongst themselves.⁴⁷⁴ All the patent boxes were under the assessment under the Code of Conduct undertaking by the EC.⁴⁷⁵ Member states needed to work together to fight evasions and facilitate tax compliance rather than engaging harmful tax competition.⁴⁷⁶

The EU Commission Directorate-General for Economic and Financial Affairs claimed that the patent box might produce large tax shields that can be used to offset tax liabilities for other forms of income in the Occasional Papers in December 2014.⁴⁷⁷ The EC claimed that the definition of tax base and treatment of expenses differed across member states and could be more decisive for the effective tax burden than the patent box tax rate itself.⁴⁷⁸ The EC pointed out that the patent box was potentially harmful to competition because the tax regime targeted the IP rather than R&D investment, which would increase the risk of distorting the investment choices and locations.⁴⁷⁹

In 2015, The EC said that certain preferential tax regimes like the patent box allowed companies to shift their profits away from where their real activities were based in

⁴⁶⁹ EC, Commission, *State aid: Commission orders Luxembourg to deliver information on tax practices* (2014),
online:<http://europa.eu/rapid/press-release_IP-14-309_en.htm>.

⁴⁷⁰ *Ibid.*

⁴⁷¹ *Ibid.*

⁴⁷² *Ibid.*

⁴⁷³ EU, Commission, *Facilitating tax compliance, Tackling non-compliance* (2014),
online:<http://europa.eu/rapid/press-release_SPEECH-14-526_en.htm>.

⁴⁷⁴ *Ibid.*

⁴⁷⁵ *Ibid.*

⁴⁷⁶ *Ibid.*

⁴⁷⁷ EU, Commission, “Tax expenditures in direct taxation in EU Member States Economic and Financial Affairs” (2014),
online:<http://ec.europa.eu/economy_finance/publications/occasional_paper/2014/pdf/ocp207_en.pdf>.

⁴⁷⁸ *Ibid.*

⁴⁷⁹ *Ibid.*

order to benefit from a lower corporate tax rate in another country in its Action Plan in THE Communication from the Commission to the European Parliament and the Council in 2015.⁴⁸⁰ The EC claimed that the patent box regimes were perceived to facilitate tax avoidance rather than encouraging economic activities where the preferential tax rate was offered.⁴⁸¹ A company may locate its intellectual property in one country and locate its real R&D activities in another country in order to get preferential tax treatment especially the patent box according to the EC.⁴⁸² This report also mentioned that the Code of Conduct for Business Taxation Group agreed that in new approach there must be a direct link between the preferential tax rate and the underlying R&D activities applied to the patent box.⁴⁸³ The EC said that they would continue to provide guidance for member states on how to implement the patent box in line with the new approach to ensure that the patent box regimes were not harmful.⁴⁸⁴ Last, they warned that if within 12 months the Member States were found not applying the new approach, it would prepare binding legislative measures to ensure the proper implementation of the patent box regimes.⁴⁸⁵

Manfred Naumann is the transfer pricing specialist of the Kluwer international tax blog who said that harmonized tax base and minimum tax rates were needed to secure the future of the European Union's tax system in Kluwer International Tax Blog in March 2015.⁴⁸⁶ Naumann pointed out that the nexus approach from the OECD would like to achieve that countries with the patent box would continue competing with low tax rates and doubtful substantial activity to their intangible income.⁴⁸⁷ The author noted that other countries who lost too much tax income through introducing the patent boxes would not be able to check the application of the patent box rules.⁴⁸⁸ It seemed that European countries were not ready to stop competing with their corporate tax rates according to the author.⁴⁸⁹ European countries wished to attract investment for the price of a small contribution to their taxable income.⁴⁹⁰ However, the author claimed that no one would gain from this tax competition in the end.⁴⁹¹ It was because that in the tax race to the bottom, EU member countries would effectively

⁴⁸⁰ EC, Commission, *A Fair and Efficient Corporate Tax System in the European Union: 5 Key Areas for Action* (SWD(2015) 121 final), online:<http://ec.europa.eu/taxation_customs/resources/documents/taxation/company_tax/fairer_corporate_taxation/com_2015_302_en.pdf>.

⁴⁸¹ *Ibid* at 10.

⁴⁸² *Ibid* at 10.

⁴⁸³ *Ibid* at 10.

⁴⁸⁴ *Ibid* at 10.

⁴⁸⁵ *Ibid* at 10.

⁴⁸⁶ Manfred Naumann, International Tax Competition and Patent Boxes, Kluwer International Tax Blog (18 March 2015), online:<

<http://www.kluwertaxlawblog.com/blog/2015/03/18/international-tax-competition-and-patent-boxes/>>.

⁴⁸⁷ *Ibid*.

⁴⁸⁸ *Ibid*.

⁴⁸⁹ *Ibid*.

⁴⁹⁰ *Ibid*.

⁴⁹¹ *Ibid*.

drive the corporate tax rate down to zero according to Naumann.⁴⁹²

Annette Alstadsæter from the University of Oslo, Salvador Barrios from the European Commission's Joint Research Centre, Gaetan Nicodeme from the European Commission, Agnieszka Maria Skonieczna from the European Commission, and Antonio Vezzani from the European Commission's Joint Research Centre analyzed the effects on the patent box in the Taxation Papers published by the EU Commission in June 2015.⁴⁹³ They found that the patent boxes exerted a strong effect on attracting patents mostly due to the specific preferential tax treatment that patent boxes brought out.⁴⁹⁴ The authors also found out that the tax treatment offered by the patent box had more influence on high-quality patents in choosing locations than low-quality patents.⁴⁹⁵ However, in the majority of cases the authors analyzed, the patent box regimes incentivized multinational companies to shift their location of patents without a corresponding growth in the amount of the investors or a shift of the research and development activities.⁴⁹⁶ The authors realized that the size of the tax treatment was negatively correlated to the local R&D activities.⁴⁹⁷ Patent box regimes were criticized for offering additional tax advantages to income already profiting from the protection of the intellectual property and potentially had little effects on the level of R&D activities.⁴⁹⁸ The development of the patent box had raised the concerns based on the fact that the patent box regime could exert a significant effect on the location of the patents without a change of in the real R&D activities.⁴⁹⁹ The result of the authors' research confirmed that these concerns were reasonable and existed.⁵⁰⁰ The authors believed that linking the tax treatment of the patent box to the requirements of real R&D activities inside the country with the patent box would potentially decrease the still dominate tax effects of the patent box on patent location and increase the level of the investment.⁵⁰¹

4.3 Journalist commentary

Mathew Dalton said that the EU "rapped" the UK over the patent box regime in *The Wall Street Journal* in October 2013.⁵⁰² He noted that the EC had told the UK to change a new scheme that gave corporate tax incentives to companies filing patents in

⁴⁹² *Ibid.*

⁴⁹³ EC, Commission, *Patent Boxes Design, Patents Location and Local R&D* (Working Paper N. 57 – 2015), online:<http://ec.europa.eu/taxation_customs/resources/documents/taxation/gen_info/economic_analyses/tax_papers/taxation_paper_57.pdf>

⁴⁹⁴ *Ibid* at 24.

⁴⁹⁵ *Ibid* at 24.

⁴⁹⁶ *Ibid* at 24.

⁴⁹⁷ *Ibid* at 24.

⁴⁹⁸ *Ibid* at 25.

⁴⁹⁹ *Ibid* at 25.

⁵⁰⁰ *Ibid* at 25.

⁵⁰¹ *Ibid* at 25.

⁵⁰² Mathew Dalton, "EU Raps U.K. Over 'Patent Box' Scheme", *The Wall Street Journal* (15 October 2013), online:<<http://www.wsj.com/articles/SB10001424052702304106704579137233434289984>>.

the UK.⁵⁰³ The EC held the opinion that the UK patent box violated several provisions of EU's Code of Conduct on Taxation.⁵⁰⁴ First, the patent box was not sufficient linked to real economic activities.⁵⁰⁵ Second, the formula of the UK patent box about how much profits were derived from the particular patents was not in line of the international principles.⁵⁰⁶ The code was voluntary but governments had never ignored the Commission's opinion.⁵⁰⁷ However, the author pointed out that this time was different because many other countries had adopted the patent box and without the unanimous support to change the patent box, commission officers worried that the UK might "dig in its heels".⁵⁰⁸

Lorys Charalambous claimed that the OECD and the European Union's Code of Conduct Group had endorsed the compromise agreement approached by the United Kingdom and Germany in the *Tax News* in December 2014.⁵⁰⁹ The author said that the endorsement was concerning the UK patent box and the design of the similar preferential intellectual property tax regimes.⁵¹⁰ The agreement included that the UK would limit its patent box regime that provided for a preferential ten percent corporate tax rate on the income derived from the patents.⁵¹¹ The author said that the UK agreed that its preferential tax rate was granted to the income derived from the patents and linked to the R&D activities carried out in the UK.⁵¹² The author held the opinion that the deal between the UK and Germany would be mirrored by all jurisdictions wishing to offer preferential tax regimes for intellectual property income.⁵¹³

Rebecca Christie said that the European Nations who offered the patent box regime should retool their laws so that only deserving companies could benefit from the preferential tax rate in the *Bloomberg* in December 2014.⁵¹⁴ France, Germany, and Italy had led calls for EU nations to align tax policies to ensure companies could not escape duties by relocating in sympathetic nations.⁵¹⁵ The author claimed that the governments with the patent box were struggling to increase revenue and reduce the deficits while the patent box caused the tax avoidance.⁵¹⁶ The author said that

⁵⁰³ *Ibid.*

⁵⁰⁴ *Ibid.*

⁵⁰⁵ *Ibid.*

⁵⁰⁶ *Ibid.*

⁵⁰⁷ *Ibid.*

⁵⁰⁸ *Ibid.*

⁵⁰⁹ Lorys Charalambous, "International Approval for Patent Box Changes", *Tax News* (5 December 2014), online:<http://www.tax-news.com/news/International_Approval_For_Patent_Box_Changes___66608.html>.

⁵¹⁰ *Ibid.*

⁵¹¹ *Ibid.*

⁵¹² *Ibid.*

⁵¹³ *Ibid.*

⁵¹⁴ Rebecca Christie, "EU Tax Working Group to Propose Retool of Patent Boxes", *Bloomberg Business* (5 December 2014), online:<<http://www.bloomberg.com/news/articles/2014-12-05/eu-tax-working-group-to-propose-retool-of-patent-boxes>>.

⁵¹⁵ *Ibid.*

⁵¹⁶ *Ibid.*

retooling the patent box was to ensure governments did not grant tax breaks on patent income developed outside of their jurisdictions.⁵¹⁷

4.4 Academic and practitioner commentary

Rachel Griffith is the deputy research director of Institute for Fiscal Studies and a professor of industrial organization of UCL and Helen Miller is a senior research economic of Institute for Fiscal Studies who said that the EU, via the EU Code of Conduct on Business Taxation, had been active in discouraging the policies which were thought to open the possibility of the harmful tax competition between the EU countries in the VOX, CEPR's policy portal in June 2011.⁵¹⁸ The authors mentioned that the Commission considered whether the patent box fell foul of rules on state aid.⁵¹⁹ However, it was not clear that countries would be better off to compete to other countries to attract intellectual property in authors' opinion.⁵²⁰ In particular, there may be some gains to European countries from coordinating tax setting though the income derived from the intellectual property was mobile.⁵²¹ From the point of view of an individual country, the income would be less mobile between the block of EU countries and the rest of the world.⁵²²

Paul Rutherford, Claire Bennett, and Adam Cooke from DLA Piper LLP claimed that the Code of Conduct for business taxation intended to discourage member states from introducing tax measures that resulted in harmful tax competition in 2013.⁵²³ The authors mentioned that the EU Commission concluded that though the patent box required significant investment in the development of innovation and required that qualifying rights must be actively managed.⁵²⁴ These requirements can be satisfied without there being real economic activities or substance businesses in the UK.⁵²⁵ The EU Commission pointed out that the UK patent box granted the tax advantages in the absence of any real economic activity in the country, which offended the Code criterion according to the authors.⁵²⁶

Hellen Miller from Institute for Fiscal Studies said that EU Commission labeled the

⁵¹⁷ *Ibid.*

⁵¹⁸ Rachel Griffith & Helen Miller, "Patent Boxes: An innovative way to race to the bottom?" VOX(30 June 2011),

online:<<http://www.voxeu.org/article/patent-boxes-innovative-way-race-bottom>>.

⁵¹⁹ *Ibid.*

⁵²⁰ *Ibid.*

⁵²¹ *Ibid.*

⁵²² *Ibid.*

⁵²³ "EC challenged UK patent box", DLA Piper (2013),
online:<https://www.dlapiper.com/~/media/Files/Insights/Publications/2013/10/EC%20challenges%20the%20UK%20patent%20box/Files/EC_challenges_the_uk_patent_box/FileAttachment/EC_challenges_the_uk_patent_box.pdf>.

⁵²⁴ *Ibid.*

⁵²⁵ *Ibid.*

⁵²⁶ *Ibid*; EU, Council of the European Union, Code of Conduct(Business Taxation), (29 November 1999),
online:<http://ec.europa.eu/taxation_customs/resources/documents/primarolo_en.pdf>.

UK patent box harmful tax competition in October 2013.⁵²⁷ Miller pointed out that the EU Commission had judged that the UK patent box breached the Code of Conduct for Business Taxation that aimed to prevent countries from enacting policies that resulted in harmful competition.⁵²⁸ The author noticed that the patent box would cost £1.1 billion a year estimated by the Officer for Budget Responsibility of the UK once the regime was fully in place.⁵²⁹ The EU Commission concerned that the patent box may not be effectively related to real research activities that the patent box aimed to promote.⁵³⁰ The author said that the Code of Conduct for Business Taxation challenged that the UK patent box breached two provisions.⁵³¹ First, the UK patent box may grant tax incentives without requiring real research and development activities inside of the country.⁵³² Second, the rules of qualifying profits applied to the UK patent box were deemed to depart from the internationally accepted principles.⁵³³ The UK patent box did not require profits associated to individual patents, which would allow a wide scope of income to be included to the patent box.⁵³⁴

Paul Rutherford, Claire Bennett, and Adam Cooke from DLA Piper LLP said that European Economic and Financial Affairs Council known as ECOFIN Ministers endorsed the joint proposal for rules on preferential intellectual property regimes approached by the UK and Germany in December 2014 in the *Lexology* in February 2015.⁵³⁵ ECOFIN Ministers also invited the Code of Conduct Group to monitor the implementation of the proposal during 2015 in 3399th Council Meeting on Economic and Financial affairs.⁵³⁶ The authors claimed that the endorsement had convinced the EU to withdraw its enquiries into the patent box regimes across the EU. In the authors' opinion, withdrawing its enquiries was "a sensible and welcome design" given that the patent box had been accepted long ago and widely.⁵³⁷ The withdraw brought a welcome level of certainty to EU patent box regimes that had not been obvious because the certainty was not complete due to the legislative reform expected during 2015 according to the authors' opinions.⁵³⁸ The authors recommended that taxpayers

⁵²⁷ Hellen Miller, "EU Commission labeled the UK patent box harmful tax competition", Institute for Fiscal Studies (18 October 2013), online:< <http://www.ifs.org.uk/publications/6899> >.

⁵²⁸ *Ibid.*

⁵²⁹ *Ibid.*

⁵³⁰ *Ibid.*

⁵³¹ *Ibid;* EC, *Conclusion of the ECOFIN Council Meeting on 1 December 1997 Concerning Taxation Policy* (98/C 2/01),

online:< http://ec.europa.eu/taxation_customs/resources/documents/coc_en.pdf >.

⁵³² *Ibid.*

⁵³³ *Ibid.*

⁵³⁴ *Ibid.*

⁵³⁵ Paul Rutherford, Claire Bennett & Adam Cooke, "EU patent box regimes-the way ahead", *Lexology*(5 February 2015),

online:< <https://www.dlapiper.com/hu/hungary/insights/publications/2015/02/eu-patent-box-regimes/> >.

⁵³⁶ *Ibid;* EU, Council of the European Union, *Outcome of the Council Meeting*, OR.en 10089/15 (2015) at 16.

⁵³⁷ *Ibid.*

⁵³⁸ *Ibid.*

that were already taking advantage of the existing EU patent box should not fear losing the benefits of the patent box and should be able to continue to get the benefits of the patent box regimes until 2021.⁵³⁹ The authors also suggested that taxpayers who had not opted in to a patent box should consider the value of the patent box before the June 2016 deadlines when the existing patent box regimes would be closed to new entrants.⁵⁴⁰

KPMG's EU tax center introduced the Code of Conduct Group's report to ECOFIN on patent box in December 2014.⁵⁴¹ The Code of Conduct Group reported that none of the IP regimes examined was compatible with the "nexus approach" developed by the OECD.⁵⁴² The "nexus approach" was designed to ensure the patent box regimes met the "substantial activity" requirement.⁵⁴³ KPMG claimed that the idea of the "nexus approach" was that IP income should be generated by R&D activities carried on by taxpayers itself to qualify for preferential treatment.⁵⁴⁴ KPMG pointed out that the Code of Conduct Group modified the BEPS approach in line with the UK and German's proposal to allow qualifying expenses to be increased by outsourcing and acquisition costs up to a maximum of 30% of qualifying expenses.⁵⁴⁵

4.5 Further thoughts and lingering questions

I do not understand the definition of the real economic activities in the EU context. The EU accused the UK of breaching two provisions of the Code of Conduct on Business and Taxation.⁵⁴⁶ The first was that the UK patent box did not link the tax incentives and the real economic activities because the UK patent box did not require the domestic innovative activities. What are those real economic activities? What do they include? For example, is filing the patents in the UK the real economic activity? Companies need to find local law firms and pay them bunch of money. Does it contribute to the economic growth? From the business dictionary, the economic activity means actions that involve the production, distribution, and consumption of goods and services at all levels within a society.⁵⁴⁷ According to the dictionary, GDP is one way of assessing economic activity.⁵⁴⁸ The current degree of the patent box and its development prospect can impact business activity and profits.⁵⁴⁹ In this way,

⁵³⁹ *Ibid.*

⁵⁴⁰ *Ibid.*

⁵⁴¹ KPMG, "Code of Conduct Group reports to ECOFIN on patent boxes, hybrid entities", KPMG EU Tax Center(16 December 2014), online:<

<https://www.kpmg.com/Global/en/services/Tax/regional-tax-centers/european-union-tax-centre/Documents/eu-tax-flash/etf-243.pdf>>.

⁵⁴² *Ibid; supra* note 324.

⁵⁴³ *Ibid.*

⁵⁴⁴ *Ibid.*

⁵⁴⁵ *Ibid.*

⁵⁴⁶ *supra* note 434.

⁵⁴⁷ *Business Dictionary, sub verbo* "economic activity",

online:<<http://www.businessdictionary.com/definition/economic-activity.html>>.

⁵⁴⁸ *Ibid.*

⁵⁴⁹ *Ibid.*

companies hire local law firms is a real economic activity. Hiring local law firms will need to pay and will contribute to the GDP. However, filing the patent box in the UK may not be the real economic activity because it is not included in the items mentioned above.

Most countries that adopted the patent box are in the European Union. I think it may lead to the tax competition within EU countries. EU Member States should align to compete with other countries instead of competing inside the union or I fear the competition will create the downward spiral that some commentators have mentioned.

Conclusion and the Future of the Patent Box

I do not think Canada will adopt the patent box. The first patent box was introduced in 1973 in Ireland. It has been 43 years from then.⁵⁵⁰ Nowadays, there is little talk about the patent box in Canada. From my research, only few government officials had comments on the patent box and in my understanding, and the Canadian government has not earnestly considered the adoption of the patent box. Also, though the intellectual property becomes more and more important and plays an important role in economic growth, resources like the oil are still important. Canada has rich resources, which is very attractive to investors. Canada also has R&D incentives to support the research and development. This does not mean that Canada will not benefit from the patent box at all. I mean that it is unnecessary for Canada to adopt the patent box because it already has many advantages for the innovations. I think Canada does not need to adopt the patent box but to make changes to its R&D incentives to make it more attractive.

It is more likely that the US would adopt the patent box in the future. First, as the patent box becomes more popular worldwide, the US' competitiveness may fall behind when other countries attract more and more IP holders with a more preferential tax rate. Second, from the proposal that the UK and Germany had approached on the patent box, we can see that the UK patent box regime will be abolished in 2021 and be replaced by some new tax regime.⁵⁵¹ It may be better to adopt the patent box before the UK abolishes this tax regime to share the pressure. Many countries and the EU Commission have criticized the UK patent box or other patent boxes would cause the harmful tax competition, which caused a lot pressure on the countries with the patent box. The patent box is the hot issue in the US and many government officials have talked about it, and given the additional proposals for it that exist, I foresee the possibility that the patent box will be enacted in a more advanced form in the US. There is, of course, no guarantee as the political climate is volatile in the United States.

I doubt that the UK will truly stop using the patent box after 2021. This is because the

⁵⁵⁰ *Supra* note 4.

⁵⁵¹ *Supra* note 12.

joint proposal mentioned that the patent box would be replaced by the new tax regime.⁵⁵² It means that the name of the “patent box” must be abolished, but the actual patent box may stay in some form. The UK patent box had increased the patent registration and worked in encouraging the innovative businesses to commercialize their intellectual property domestically. The important thing is that the UK has already lost tax revenue through the patent box in the short term. The revenue is very important to the country’s economic growth. If the patent box is abolished, companies may move to another country with preferential tax rate and the UK government may never cover the lost revenue so the country is incentivized to maintain some form of favorable tax treatment towards IP lest countries flee from it. If the UK continued using the patent box, the government may balance the revenue with the development of the companies. Company will develop inside the UK and make more profits and the government will be able to collect more revenue for the fiscal balance.

From my point of view, the EU may soon endorse the patent box. The EU Commission only claimed that the UK patent box is against the Code of Conduct and did not challenge other patent boxes. This means that the EU is not really against the patent box itself, but rather just certain method by which it is employed. In the joint proposal approached by the UK and Germany, the UK government ensured that the patent box would change to require the real R&D activities to get the treatment to meet the Code of Conduct.⁵⁵³ Other countries like France, the Netherlands, and Spain who also have the patent box regimes have not been challenged by the EU as it did to the UK. This means that at least implicitly the EU will stand by the patent box if the tax regime does not go against the Code of Conduct in the EU’s eyes.

⁵⁵² *Ibid.*

⁵⁵³ *Supra* note 324.