Incentives and Disincentives of Profit Shifting in Developing Countries

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Preface and Acknowledgment

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Abstract

Current international tax system maintains the opportunity and incentive for profit shifting strategy. Two of the most popular strategies are transfer price manipulation and debt shifting. Today, there is an increasing concern of this issue in the context of developing countries, based on the fact that the cost of profit shifting imposed by developing countries is higher than developed ones. Although empirical study in profit shifting could play a major role in creating immediate response to tackle tax avoidance, such study in the context of developing countries is very limited in numbers. Using 8,602 subsidiary firms in 29 developing countries, I found that the incentive of profit shifting is considerably 'high', approximately for -1.2 point. The main channel for shifting profit is through transfer price manipulation, which accounts for 93% of the case. Moreover, anti-avoidance rules could reduce profit shifting from 35% to 72%, although it highly depends on the effectiveness of tax administration system to collect taxes. Since that most of developing countries have weak tax administration system, it is essential for them to formulate policy that is simple to implement, effective to combat profit shifting and rational. In this thesis, I emphasized the relevance of BEPS project for policy considerations, particularly on multilateral cooperation, transfer pricing, interest limitation, data for BEPS analysis, and improvement of tax administration.

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Chapter 1
Introduction

Profit shifting is much in the news these days. Virtually every government, every donor or aid agency, every non-governmental organisation, and every newspaper or TV channel are constantly on the lookout for ways to discover and control profit shifting behaviour. The OECD/G-20 base erosion and profit shifting (BEPS) project could be considered as culmination point.[1] But, what is profit shifting and what aspects of it should we know more about?

Profit shifting is a strategy to minimize the multinational enterprise's global corporate tax burden by placing or allocating profit to the entity that operates in the country that provides the most favourable tax regime. As a result, profit shifting can erode a country's tax base. Under globalisation, multinational enterprise could utilise any of various tax systems across countries that will bring the highest economic return. Such asymmetrical system starts with national tax sovereignty to design their tax policy, irrespective of the other country's policy. This creates spillovers in international corporate taxation.[2]

Amongst other, there are three elements that provide opportunity to profit shifting, namely: jurisdiction to tax, separate accounting approach and the interest deductibility. **Firstly**, in global economy, when capital and labour are mobile, countries are dealing with questions on how to set taxation for non-residents income and taxation for residents who generate income abroad. Since tax sovereignty is limited to domestic economic activities, tax on cross-border activity should also be allocated between countries.[3] With regards to tax sovereignty and national interest, each country will choose the best system to tax them. The interaction between these national tax systems then creates tax distortionary effect, since there are possibilities to over taxation (double taxation) and under taxation (double non-taxation).

Secondly, separate accounting. Separate accounting approach originated on the water's edge concept. It warrants variation of calculation of taxable profit for each country, as to determine the amount of tax to be collected by tax authority. With separate accounting system, internal transactions within a multinational enterprise will much depend on tax consideration, since no countries apply unitary

1 See OECD. *Addressing Base Erosion and Profit Shifting*. Paris: OECD Publishing, 2013.
2 IMF. "Spillovers in International Corporate Taxation", *IMF Policy Paper* (2014): 12-13.
3 Maarten F. de Wilde, "Some Thoughts on a Fair Allocation of Corporate Tax in a Globalizing Economy," *Intertax* Vol. 38, Issue 5 (2010): 281-282.

framework to comprehend the business as a whole and see how multinational enterprise allocates their profit.[4]

Thirdly, treatment of interest expense. Tax treatment of interest and dividend payments is commonly distinguished.[5] The first will be deductible when computing corporate income tax liability, the second will not. For multinational enterprise, this situation incentivized them to fund their subsidiaries (intra-group) with excessive debt (thin capitalisation).[6] The debt would be located in subsidiary country with high tax rates, the corresponding receivable in a country with a low tax rate.

Furthermore, tax sovereignty yet permits countries to maintain different corporate tax rates, which distort business decision making.[7] All else being equal, profit shifting is a corporate tax rate sensitive activity. This is exacerbated by the existence of tax haven countries. The low tax rates, ability to hold passive investments, book paper profits and shield information from scrutiny by tax authorities have made tax havens the place to shift income and defer corporate income taxes by multinational enterprises.[8]

Almost all empirical studies in the field of profit shifting found that tax rate differential creates important effect on the profitability of multinationals. Seminal papers by Hines and Rice (1994) or Huizinga and Laeven (2008) were considered as general approach in quantifying the sensitivity (semi-elasticity) of corporate tax rate to profit. In general, with consideration of various empirical results, 1% increase of tax rate difference will have an impact of 0.8% decrease in pre-tax profitability.[9] Furthermore, the empirical work by Maffini for multinational enterprises in 15 OECD countries has also proved the relationship between tax haven network and reported profit.[10] However, the use of tax haven network itself cannot be separated with corporate tax rate situation.

There are two major profit shifting strategies, namely: transfer price manipulation and debt shifting. Transfer price manipulation is effort to over or under invoice a related party in order to exploit cross-border differences in corporate tax rates.[11] Transfer price manipulation could take place via various channels: sales, purchase, intercompany loan, intragroup service, payment of royalty, or even business restructuring. On the other hand, financing strategy through debt is more preferable regarding to tax

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4 Arnaud de Graaf, "International Tax Policy Needed to Counterbalance the 'Excessive' Behaviour of Multinationals", *EC Tax Review*, Vol. 22, Issue 2 (2013): 106.

5 Yariv Brauner, "BEPS: An Interim Evaluation", *World Tax Journal*, Vol. 6, No. 1 (2014): 23.

6 Thin capitalisation refers to the situation in which a company is financed through a relatively high level of debt compared to equity.

7 Arthur J. Cockfield, "Introduction: The Last Battleground of Globalization," in *Globalization and Its Tax Discontents: Tax Policy and International Investments,* ed. Arthur J. Cockfield. (Toronto: University of Toronto Press, 2010), 5..

8 Charles E. McLure, Jr., "Will the OECD Initiative on Harmful Tax Competition Help Developing and Transition Countries?" *Bulletin for International Taxation,* Vol. 59, No. 3 (2005): 92.

9 See Jost H. Heckemeyer and Michael Overesch, "Multinational's Profit Response to Tax Differentials: Effect Size and Shifting Channels," *ZEW Discussion Paper,* No. 13-045, (2013).

10 Giorgia Maffini, "Tax Haven Activities and the Tax Liabilities of Multinational Groups," *Oxford University Centre for Business Taxation Working Paper,* 09/25 (2009): 32.

11 Lorraine Eden, "Taxes, Transfer Pricing, and the Multinational Enterprise," in *The Oxford Handbook of International Business,* ed. Alan M. Rugman. (New York: Oxford University Press, 2009), 593.

base reduction, and as a consequence, lower cost of capital.[12] Moreover, incentives to fund their foreign related party by intercompany loan increases along with the gap of tax rate between the domestic and the country where their related party operates.[13] This argument is also supported by empirical study.[14] Comparing between those two, there is a general consensus that transfer price manipulation is the main technique to shifting profit.[15]

It should be emphasized that apart from the opportunity and incentive, decision to have profit shifting strategies can be reduced by creating anti avoidance rules. There is an increasing trend among countries to set specific anti avoidance rules (SAAR) and general anti avoidance rules (GAAR). SAAR meant to focus on specific (individual) tax avoidance practice, such as transfer pricing rules, interest limitation rules[16], and others. Lohse and Riedel estimate that transfer price manipulation channel could be reduced up to 50% with stricter transfer pricing legislation.[17] Studies on foreign affiliates of US multinationals in 54 countries during 1982 – 2004 also showed that thin capitalisation regimes restrict the ratio of an affiliate's total debt to assets up to 43% of the case.[18]

Today, there is an increasing concern of this issue in the context of developing countries. In 2014, Developing Working Group (DWG) of G-20 released a report that explores the importance of base erosion and profit shifting for developing countries.[19] This report was supported by a convincing explanation that the impact of profit shifting is not expected to be small. For instance, Crivelli et al. (2015) have estimated that the cost of profit shifting imposed by developing countries is higher than developed ones (OECD countries).[20] As a result, the government's revenue was disrupted, especially if we take into account that corporate income tax was one of the most important sources of revenue in developing world.

With respect to design better policy that is suitable with tax system and the low capability of tax administration, developing countries should have better understanding of the economic aspects of

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12 Aswath Damodaran, *Applied Corporate Finance* (John Wiley and Son, 2010), 493.

13 John R. Graham, "Taxes and Corporate Finance: A Review," *The Review of Financial Studies,* Vol. 16, No. 4 (2003): 1101.

14 Further, the relationship between tax rate and debt to equity ratio was positive and it is increasing over time. See, Ruud A. de Mooij, "The Tax Elasticity of Corporate Debt: A Synthesis of Size and Variations", *IMF Working Paper* WP/11/95 (1995): 21.

15 See Jost H. Heckemeyer and Michael Overesch, "Multinational's Profit Response to Tax Differentials: Effect Size and Shifting Channels," *ZEW Discussion Paper* No. 13-045, (2013).

16 In this thesis, the term "interest limitation rules" will be based the terminology used by Burnett, referring to rules which restrict interest deductions. This rule commonly associated to a debt-to-capital ratio, an interest to-profit ratio (earning stripping), or an application of arm's length principle. See Chloe Burnett, "Intra-Group Debt at the Crossroads: Stand-Alone versus Worldwide Approach," *World Tax Journal,* Vol. 6, No.1 (2014): 43.

17 Theresa Lohse and Nadine Riedel, "Do Transfer Pricing Laws Limit International Income Shifting? Evidence from European Multinationals," *CESifo Working Paper,* No. 4404 (2013).

18 Jennifer Blouin, et al., "Thin capitalization Rules and Multinational Firm Capital Structure, *CEPR Discussion Paper,* No. 9830 (2014): 29- 30.

19 OECD, *Part 1 of A Report to G-20 Development Working Group on the Impact of BEPS in Low Income Countries* (Paris: OECD Publishing, 2014).

20 See Ernesto Crivelli, Ruud De Mooij and Michael Keen, "Base Erosion, Profit Shifting and Developing Countries", *IMF Working Paper* WP/15/118 (2015): 19 – 20.

profit shifting.[21] However, although there are dozens of study to reckon the cost of profit shifting in developing countries, much of the estimations are questionable with regards to their unreliable methodology and quality of data.[22] Moreover, up until now there is no study on the effectiveness of anti-tax avoidance rules or dominant profit shifting strategy in developing countries.[23]

Therefore, in this thesis I tried to explore the causes, consequences, and responses to profit shifting with one general question as a starting point: **what are the impacts of corporate tax policy on profit shifting behaviour in developing countries?** Furthermore, the objectives of this thesis are to analyse the following aspects:

(i) The magnitude of profit shifting in developing countries.
(ii) The effectiveness of anti-avoidance rule in combating profit shifting.
(iii) The dominant profit shifting strategy.
(iv) Policy options with special consideration to OECD/G-20 BEPS project.

As far as I am concerned, an empirical study that attempts to assess above objectives as well as linking them with relevant policy options in a comprehensive way for developing countries are scarce. Therefore, this research will deliver positive contribution for current discussion on BEPS, especially with giving more weight for developing countries' perspective. However, the absence of the impact of profit shifting to tax revenue in developing countries will be the limitation of the paper. I will only focus on transfer price manipulation and debt shifting; as well as anti-avoidance rule to counter such profit shifting techniques. Other BEPS channels, for instance treaty shopping, hybrid mismatch, and others will be beyond the scope of this paper.

In this thesis, profit shifting is measured as changing reported profit of subsidiary company because of the changing corporate tax policy, particularly corporate tax rate and anti-avoidance rules. The criteria of companies I used in this research are subsidiary companies that are owned by foreign shareholders; whereas the criteria of developing countries are any non-high income country based on World Bank (WB) definition and non-tax haven countries.[24] Using ORBIS database, my sample is 8,602 subsidiary companies in 29 developing countries during 2005 – 2013 (9 years of observations). To test on how corporate tax policy will affect the multinational behaviour and indication of profit shifting, I applied multiple regressions (OLS) with unbalanced panel data, modifying the approach from Huizinga and Laeven (2008).

I found that the semi-elasticity of profit shifting as regards to corporate tax rate difference is -1.2, which is similar with the previous empirical studies. Furthermore, the effectiveness of transfer pricing

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21 OECD, "BEPS Action 11: Improving the Analysis of BEPS", *BEPS Public Discussion Draft* (16 April 2015): 71.

22 Assessment of the methodology was summarized by Clemens Fuest and Nadine Riedel, "Tax Evasion and Tax Avoidance in Developing Countries: The Role of International Profit Shifting," *Oxford University Centre for Business Taxation Working Paper*, 10/12 (2010): 6 -13.

23 OECD, *Part 1 of A Report to G-20 Development Working Group on the Impact of BEPS in Low Income Countries* (Paris: OECD Publishing, 2014), 13.

24 I will discuss this on Chapter 4.

rules and interest limitation rules was proven to have positive association with the reported profit and creates disincentive to profit shifting strategy. In order to discover which profit shifting strategy is more dominant –transfer price manipulation or debt shifting-, I ran regression models with EBIT and pre-tax profitability as dependent variable. The result is similar with Heckemeyer and Overesch (2013), that the non-financial technique, e.g. transfer price manipulation, is more favourable, especially in developing countries.

Nevertheless, the analysis will be extended to tax policy areas with special reference to OECD/G-20 BEPS project and other official documents from multilateral organisations, such as UN and IMF. First of all, I tried to link how the empirical study in this thesis can give positive contribution for OECD Action 11 on improving data and analysis of BEPS. Moreover, since profit shifting strategy is sensitive to corporate tax rate difference, I discuss the proposal on minimum tax as proposed by IMF. The discussion also comprises the debates on transfer pricing system and interest limitation rule that is more suitable for developing countries. I argued that OECD BEPS Action 4, 8, 9, 10, and 13 are worth to be considered. In trying to draw lessons from this, developing countries should therefore make sure that their tax policy are compatible with the global system, as well as equipped with the improvement of tax administration.

This thesis is divided into 6 chapters with introduction as the first chapter. Chapter 2 consists of interactions between national tax systems and how this is connected with opportunity, incentive and disincentive of profit shifting. I will deliver strong argument that tax was one of the main considerations on business decision-making process. On Chapter 3, I will elaborate how globalisation was a tragic choice for developing countries, concerning to their highly dependence for revenue from multinational enterprise. The causes, consequences, and responses to profit shifting in developing countries will be major theme of this chapter. In order to scale the impact of corporate tax rate and anti-avoidance rules, estimation strategy will be explained on Chapter 4. This part contains stages of analysis, data specification, econometric approach, and also statistical descriptive of sample in this research. Core of this paper, which is empirical result and consideration for corporate tax policy in developing countries, will be discussed on Chapter 5. This chapter will provide comprehensive analysis from the perspective of business economics and law. The final chapter will be a conclusion.

Chapter 2
Theory on International Tax System and Profit Shifting

2.1. Introduction

Among others, there are three major elements in international corporate taxation that could be considered as starting point for profit shifting strategies. These elements are: jurisdiction to tax, separate accounting approach, and treatment of interest expense. Moreover, these so called 'opportunities' of profit shifting strategies by multinationals are also incentivized by variation of corporate tax rate (or even worse, the existence of tax havens). In order to combat such practices, many countries start to launch anti-avoidance provision in their tax law.

Please note that the terminology of profit shifting in this chapter and also within this thesis could be used interchangeably with the 'base erosion' or 'base erosion and profit shifting (BEPS)'. OECD as the campaigner of BEPS does not reference any explanation on the terminology, but rather to highlight that the significant source of country's base erosion comes from profit shifting.[25] Moreover, profit shifting might refer to any activities that shifts profit from countries with normal or high tax rates to countries with lower or even zero taxes or have special regime.[26] Among others, I will focus on two specific techniques of profit shifting, namely transfer price manipulation and debt shifting.

In this chapter, I will discuss theoretical framework and empirical result on international tax system and profit shifting. It starts with three basic questions: (i) what are the drivers the profit shifting strategies; (ii) how do multinational enterprises see the interactions between national tax systems as one of the considerations for their decision making process; and (iii) how do governments react to profit shifting activities?

2.2. International Tax System and Opportunity to Profit Shifting

Interdependency of the world economy marked by global value chain and free movement of products and production input has brought more concern on international aspect of public finance. Tax policy is extended from local to global, from national to international.[27] Nevertheless, this does not immediately translate to the existence of a single tax system. It is merely concern that any country's corporate income tax policy could not be seen as isolated expanse as it also affected other countries, and *vice versa*. Among many international tax issues, in this section I will only describe three

[25] OECD, *Addressing Base Erosion and Profit Shifting*, (Paris: OECD Publishing, 2013), 5.

[26] Francis Wayzig, *Evaluation Issues in Financing for Development: Analysing Effects of Dutch corporate Tax Policy on Developing Countries* (The Hague: IOB, Ministry of Foreign Affairs of the Netherlands, 2013), 45-46.

[27] Richard A. Musgrave and Peggy B. Musgrave, *Public Finance in Theory and Practice*: 4th edition (New York: McGraw-Hill, 1984), 759-760.

fundamental elements that have strong relationship with profit shifting strategies. These three elements are: jurisdiction to tax (and global neutrality), separate accounting approach, and tax treatment on interest deduction.

2.1.1. Jurisdiction to Tax

All countries in the world have their right to tax, originated from the concept of tax sovereignty.[28] Freedom to design corporate tax system also pushes governments to act rationally in the name of national interest. Rationalization to set definition of income, taxable person, income classification, or tax base criteria on arbitrary meaning are problems that occurred under jurisdiction to tax. At the basic point, although there is general acceptance of the Schanz-Haig-Simons (SHS) definition of income, there is no agreement on income for tax purposes among countries concerned by its practical matters.[29] Corporate tax rate is based on domestic preferences on public goods and redistributive policy, which are non-identical.

In global economy, when capital and labour are mobile, countries are dealing with questions on how to set taxation for non-residents income and taxation for residents who generate income abroad. Since tax sovereignty is limited to domestic economic activities, tax on cross-border activity should also allocate between countries.[30] With regards to tax sovereignty and national interest, each country will choose the best system to tax them. The interaction between national tax systems creates tax distortionary effect, since there are possibilities to over taxation (double taxation) and under taxation (double non-taxation).

To overcome tax distortionary effect, any national tax policy should treat flows of goods and capital with consideration to global neutrality principle, where any business decision shall be determined by non-tax consideration factors.[31] The concept of global neutrality is much related to allocation of taxing rights, which determine the division of tax base between states (residence and source). Focus of attention is mostly on neutrality towards the location of the economic activity, the residence and nationality of the shareholder of a company, the location of the management and control of the business and the choice of place of incorporation.[32] The concept of global neutrality within the scope of international tax coordination could be traced into three different layers of action, namely: unilateral (via country's international tax policy), bilateral (mostly via bilateral tax treaty), and multilateral action.

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28 OECD, *Addressing Base Erosion and Profit Shifting*, (Paris: OECD Publishing, 2013), 28.

29 Yariv Brauner, "An International Tax Regime in Crystallization", *Tax Law Review*, Vol. 56 (2003): 267-268.

30 Maarten F. de Wilde, "Some Thoughts on a Fair Allocation of Corporate Tax in a Globalizing Economy," *Intertax* Vol. 38, Issue 5 (2010): 281-282.

31 Peggy B. Musgrave, *United States Taxation of Foreign Income, Issues and Arguments* (Massachusetts: Law School Of Harvard University,1969), 108 as quoted in Wolfgang Schon, "International Tax Coordination for a Second-Best World (Part I), *World Tax Journal*, Vol. 1, No. 1 (2009): 78.

32 Cees Peters, "International Tax Neutrality and Non-Discrimination: Plea for a More Explicit Dialogue between the State and the Market", in *Tax Treaties: Building Bridges between Law and Economics*, eds. Michael Lang, et al. (Amsterdam: IBFD, 2010), 612-613.

At unilateral action, most countries can choose to have territorial tax system (source principle) or worldwide tax system (residence principle) or usually a mixture of these. The first will tax all income originating in home (domestic) country uniformly, regardless their residency. This system applies capital export neutrality, aims to prevent tax consideration from investors' decisions regarding where to invest. On the other hand, worldwide tax system will tax all residents of the country uniformly, regardless of their source of income (domestic or foreign). This system applies capital import neutrality, which aims to ensure that the total tax imposed on investment returns in a given country is the same, irrespective of the residence of the investor. These approaches will ensure to put the equal treatment between foreign and domestic investments[33] and represent by various mechanisms, namely: exemption, credit, and deduction methods.[34]

In real world situation, each of those mechanisms offers different incentive for outbound investment or repatriation.[35] Under territorial system, multinational enterprises have opportunity to optimize their group profit by shifting partial profit to low-tax jurisdiction. On the other hand, worldwide system only offers smaller opportunity –compare to territorial system- since profits are taxed at the same rate as domestic firms when they repatriated.[36] However, debates among domestic stakeholders about outbound investment involves political and social dimension. As a result, a country could set the wrong mechanism, which may contravene the global neutrality.[37] Further, in current world economy, inefficiencies could also occur as a result of interaction of asymmetric tax system (unfeasible tax system).[38]

To achieve global neutrality (and equality), a country can also take bilateral action mostly via bilateral tax treaty. Today, there are more than 3,000 bilateral tax treaties around the world and an increasing trend is still shown. The majority of tax treaties existing today are based on the OECD Model (the UN Model is also for large extent based on the OECD Model), which is grounded on the assumption of an equal level of investments that take place between two countries.[39] Although bilateral tax treaty seems promising, it is not a panacea. A bilateral tax treaty aims to solve the problems of balancing interest

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33 Eric C.C.M. Kemmeren, "Legal and Economic Principles Support an Origin and Import Neutrality-Based over a Residence and Export Neutrality-Based Tax Treaty Policy", in *Tax Treaties: Building Bridges between Law and Economics*, eds. Michael Lang, e al. (Amsterdam: IBFD, 2010), 291-293.

34 Exemption method is to achieve capital export neutrality, whereas credit method to capital import neutrality.

35 For instance, in the case where the host country tax rate is lower than home country, exemption provides highest incentive, a credit provides a lower level of incentive, and a deduction provides the lowest level of incentive for outbound investment.

36 Today, the impact of worldwide tax system to capital repatriation is a major issue in U.S. See Lars P. Field, et al., "Effects of Territorial and Worldwide Corporation Tax Systems on Outbound M&As," *ZEW Discussion Paper,* No. 13-088 (2013); Jane G. Gravelle, "Reform of U.S. International Taxation: Alternatives," *Congressional Research Service Report,* No. 7-5700/RL34115 (2012); and Dhammika Dharmapala, "What Problems and Opportunities are Created by Tax Havens," *Oxford Review on Economic Policy*, Vol. 24, No. 4 (2008): 665-666.

37 Tsilly Dagan, "The Cost of International Tax Cooperation", *Working Paper* No. 1-03 (2003): 11. The paper can be access at: http://www.biu.ac.il/law/unger/wk_papers.html

38 Jacob A. Frenkel, Assaf Razin and Efraim Sadka, *International Taxation in an Integrated World*, (Massachusetts: MIT Press, 1991), 25-28.

39 Yusuf Wangko Ngantung, "Tax Treaties and Developing Countries", in *Tax Policy Challenges in the 21st Century*, eds. Raffaele Petruzzi and Karoline Spies. (Vienna: Linde, 2014), 534.

between individual countries, and therefore still contains fiscal prerogatives of the state. This could be seen by the fact that bilateral tax treaty -especially for source country- is only destined as signalling device for investors that a particular country is following the convention of international investment rules and is a part of global economy.[40] In odd moments, tax treaty network can also be utilized for tax planning scheme by multinational enterprises.

Finally, multilateral tax cooperation is believed to be able to generate neutrality since all countries will tax both residents and foreigner (investors) at the same level of treatment. But again, heterogeneous fiscal preferences will likely make such coordination difficult to achieve. This is because multilateral coordination will reduce bigger tax sovereignty for all countries on average.

As a conclusion, although there is a reduction of tax sovereignty into certain level,[41] current level of playing field in corporate income tax still provides room for uncooperative behaviour. Further, allocation system between source and residence country -which formed in the early of 20th century and had received minor change since then-, has focused too much on relief from double taxation, but neglected the flip side of taxation in globalized world, namely double non-taxation.[42]

2.2.2. Separate Accounting Approach

Profit shifting issue cannot be separated with multinational enterprise. According to Caves, definition of multinational enterprise is centralised in the ability to control and manage production plants that are located in at least two countries.[43] Eden has supported this definition by adding characteristics of an integrated business group consisting of several related affiliates located in different countries, under common control, with common goals, and sharing a common pool of resources.[44] Moreover, multinational enterprise forms and expands if they can organize inter-dependencies between agents (through hierarchy) that are located in different countries more efficiently than external (open) markets.[45] This was based on internalization theory.[46]

From above explanations, it can be ascertained that multinational enterprise is one single economic entity, but consist of many (more than one) legal entities operating in different countries. However, although multinational enterprise is a single economic entity, the international tax community stands on the opposite side. Any firms under the same multinational enterprise obliged to follow the fiscal

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40 Fabian Barthel, et al., "The Relationship between Double Taxation Treaties and Foreign Direct Investment", in *Tax Treaties: Building Bridges between Law and Economics*, eds. Michael Lang, et al. (Amsterdam: IBFD, 2010), 5.

41 Charles McLure, "Globalization, Tax Rules, and Sovereignty," *Bulletin for International Taxation*, Vol. 55, No. 8 (2001): 328.

42 See OECD, *Addressing Base Erosion and Profit Shifting* (Paris: OECD Publishing, 2013).

43 Richard E. Caves, *Multinational Enterprise and Economic Analysis*: 3rd edition. (New York: Cambridge University Press, 2007), 1.

44 Lorraine Eden, "Taxes, Transfer Pricing, and the Multinational Enterprise", in *The Oxford Handbook of International Business*, ed. Alan M. Rugman (New York: Oxford University Press, 2009), 595.

45 Jean-Francois Hennart, "Theories of the Multinational Enterprise", in *The Oxford Handbook of International Business*, ed. Alan M. Rugman (New York: Oxford University Press, 2009), 133.

46 Internalization theory was an extension of transaction cost theory (Coase theorem). See Alan M. Rugman, *Inside the Multinationals the Economics of Internal Market*: 25th anniversary edition (New York: Palgrave Macmillan, 2006).

system in country where they operates.[47] Simply, for any tax purposes, a multinational enterprise is bordered with national and legal boundaries (water's edge). The system, namely separate accounting approach, was originally found at the early of 20th century[48] and aimed to ensure that each part of multinational enterprises will be treated the same way as domestic (purely local) business. Therefore, separate accounting approach will ensure capital export neutrality in order to match between domestic regulations and global efficiency.[49]

Furthermore, water's edge concept warrants variation of calculation of taxable profit, as to determine the amount of tax to be collected by tax authority. While some countries refer their tax accounting to financial accounting system –which is to follow commercial practices, such as IFRS-, majority of countries have deviation between those two.[50] This, of course, creates an additional cost for multinational enterprises in order to comply with different tax rules. It is not surprising that this problem have lead into discussion to have single corporate tax base, especially in EU area.[51]

With separate accounting system, internal transactions within a multinational enterprise will much depend on tax consideration. Multinational enterprises could also take advantage from this system, since no countries apply unitary framework to comprehend the business as a whole and see how multinational enterprise allocates their profit.[52] As a result, separate accounting limits other tax authorities to access 'private' information and encourages illicit financial flow, such as fraud, corruption, and tax evasion.[53] Clearly, separate accounting systems increase vulnerability and can be exploited by multinational enterprises to create tax avoidance schemes.[54]

2.2.3. Interest Deductibility Treatment and Leverage

In general, source of financing for a firm comes from two instruments, debt and equity. The first implies interest payment, while the latter leads to dividend payment. From firm's standpoint, these payment (compensation) levels can be considered as cost to get capital (cost of capital). Value of cost of capital is merely one of many factors that are taken into account when firms want to decide their

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47 If the multinational enterprise thinks and decides their business strategy from single global perspective, but the tax authorities do not. See Jill C. Pagan and J. Scott Wilkie, *Transfer Pricing Strategy in a Global Economy* (Amsterdam: IBFD Publication, 1993), 27.

48 Separate accounting approach could be traced back from Carroll Report (1933).

49 Lorraine Eden, *Taxing Multinationals: Transfer Pricing and Corporate Income Taxation in North America* (Toronto: University of Toronto Press Incorporated, 1998), 565.

50 Peter Essers and Ronald Russo, "The Precious Relationship between IAS/IFRS, National Tax Accounting System and the CCCTB", in *The Influence of IAS/IFRS on the CCCTB, Tax Accounting, Disclosure, and Corporate Law Accounting Concepts – A Clash of Cultures,* eds. Peter Essers, et al. (Alphen ad Rijn: Kluwer Law International, 2009), 29-86.

51 European Commission have released proposal for Common Consolidated Corporate Tax Base (CCCTB). See detail analysis of the proposal in Christoph Spengel, et al. "A Common Corporate Tax Base for Europe: An Impact Assessment of the Draft Council Directive on a CC(C)TB," *World Tax Journal,* Vol. 4, No. 3 (2012): 185-221.

52 Arnaud de Graaf, "International Tax Policy Needed to Counterbalance the 'Excessive' Behaviour of Multinationals," *EC Tax Review,* Vol. 22, Issue 2 (2013): 106.

53 Sol Picciotto, "Is the International Tax System Fit for Purpose, Especially for Developing Countries?" *ICTD Working Paper* 13 (2013): 24.

54 Commission of the European Communities, "A Common Consolidated EU Corporate Tax Base," Non-paper presented to informal Ecofin Council, 10 and 11 September 2004.

investment activities. From rational economic point of view, no one would take any risky and uncertain decision. Therefore, decision will take place only if return on investment at least equal with the cost of capital. In general, it can be concluded that each firm will try to do the best in formulating their optimal capital structure, with regards to the lowest cost of capital.

The picture is not as conclusive as it would however seem. Interest payment, as a compensation for creditor, is universally deducted when calculating corporate tax income. On the other hand, dividends, as a payment for shareholder, are generally not.[55] Although some returns of equity are deductible, they are typically subject to some form of tax relief (an exemption, exclusion, credit, etc.) in the hands of the payee. This different treatment is known as debt bias.[56]

Debates on the distorting effects of different tax treatment of interest and dividend are not new. From economic perspective, both interest and dividends payments fundamentally create a return on capital.[57] This view is also supported by Devereux and Gerritsen (2010), who presented that there are no objective legal reasons to distinguish between both sources of financing.[58] But why is interest payment still deductible in many countries? This is because interest payments are simply regarded as a cost of doing business. Therefore, together with other business expenses, they should be exempt from the corporate income tax.

From the above three elements, it could be argued that current international tax system (with lack of coordination) encourages multinational enterprise to shift their tax burden and make opportunities for various schemes on aggressive tax planning.[59] These elements also wound neutrality principle at international level.

2.3. Incentives and Schemes of Profit Shifting

The current international tax system makes profit shifting strategies possible; however it is not the only factor. There are at least two other elements that could be considered as encouragement. Corporate tax rate was elementary, and second, which also related to prior element, is tax haven

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55 Johanna Hey, "Base Erosion and Profit Shifting and Interest Expenditure," *Bulletin for International Taxation,* Vol. 68, No. 6/7 (2014): 333.

56 Issue on debt bias are comprehensively discuss, for example, by Serena Fatica, Thomas Hemmelgarn, Gaetan Nicodeme, "The Debt-Equity Tax Bias: Consequences and Solutions," *EC Taxation Papers* No. 33 (2012); and Ruud A. de Mooij, "Tax Biases to Debt Finance: Assessing the Problem, Finding Solutions," *IMF Staff Discussion Note* SDN/11/11 (2011).

57 Ruud A. de Mooij, "Tax Biases to Debt Finance: Assessing the Problem, Finding Solutions", *IMF Staff Discussion Note* SDN/11/11 (2011): 10.

58 Michael P. Devereux and Aart Gerritsen, "The Tax Treatment of Debt and Equity", in *Naar een Europese Winstbelasting,* eds. D.A. Albregtse and P. Kavelaars (Deventer: Kluwer, 2010), 67-74, as quoted by Serena Fatica, Thomas Hemmelgarn, Gaetan Nicodeme, "The Debt-Equity Tax Bias: Consequences and Solutions," *EC Taxation Papers* No. 33 (2012): 7.

59 Arthur J. Cockfield, "International Tax Competition: The Last Battle of Globalization", *Tax Notes International,* Vol. 63, No. 12 (2011): 868.

network. Nevertheless, these elements could not be separated from international tax competition to attract capital investment.[60]

2.3.1. Incentives to Profit Shifting

Globalisation is associated with increasing mobility of factors of production, especially capital. This implies to reactions from government and business. From a business perspective, globalisation has enabled them to search for the lowest cost of capital (highest return on capital). The bargaining position of multinational enterprise is getting high in front of government in many countries who tries to bid for firms (attract investment).[61] From government's viewpoint, tax policies in global world are set based on national competitiveness and to attract three things: capital (which is mobile), paper profits (passive income), and real business activity (for example: location decisions of multinational enterprise).[62] The competition receives its justification mainly from Tiebout's idea of "voting with your feet".[63] Yet, international tax competition shows an uncooperative game where each country self-determinates of what their tax policy should be like.

A. Corporate tax rates

First of all, imagine the world without multinational enterprise. Any domestic economic agent tries to optimize their profit as their rational behaviour. The existence of tax, as additional cost, not only influences business decision making, but also creates distortionary effect to labour supply, consumption, or to increase underground economy. If, for instance, there are only two countries in the world and both of them have different tax rate, all else being equal, there is a tendency that economic activities are higher in low tax rate country rather than in high tax country.

Now, we turn to the setting where the world consists of many multinational enterprises. Activities and network in more than one jurisdiction (country) under the same objective have enabled multinational enterprise to substitute any activities -in terms of paper (legal) or economic substance- from high tax to low tax environment. [64] Again, tax savings is a method to reduce business cost. In neutral standpoint, such activity receives justification when there is necessity to provide the highest return to shareholder, allocation of fund for research and development, and price competition strategy. As a result, reduction of tax rate will move towards efficient and increased welfare, as well as enforcing

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60 However, debates on whether international tax competition is good or bad from welfare perspective are not new. See Michael Keen and Kai A. Konrad, "The Theory of International Tax Competition and Coordination", *Max Plank Institute for Tax Law and Public Finance Working Paper* 2012-06 (2012): 56.

61 This phenomenon also received interest for scholars in the field of public finance. See Ben Ferrett and I. Wooton, "Tax Competition and the International Distribution of Firm Ownership: An Invariance Result," *International Tax and Public Finance*, Vol. 17, No. 5 (2010): 518-531; Dan A. Black and William H. Hoyt, "Bidding for Firms," *The American Economic Review*, Vol.79, No. 5 (1989): 1249-1256; or P. Haaparanta, "Competition for Foreign Direct Investment," *Journal of Public Economics*, Vol. 63, No.1 (1996): 141-153.

62 Peter Dietsch and Thomas Rixen, "Tax Competition and Global Background Justice," *The Journal of Political Philosophy*, Vol. 22, No. 2 (2014): 154-155.

63 See Charles M. Tiebout, "A Pure Theory of Local Expenditure," *Journal of Political Economy*, Vol. 64, No. 5 (1956): 416-424.

64 James R. Hines, Jr., "How Serious a Problem is Base Erosion and Profit Shifting," *Canadian Tax Journal*, Vol. 62, No.2 (2014): 446.

government to perform in more effective way.[65] With regards to this arguments, for the last three decades there is decreasing trend of statutory corporate income tax rate, for instance average OECD corporate tax rate fell more than 20%.[66]

However, the outcome of world tax competition does not end as many scholars have predicted. In real world situation, there is no such thing as 'being equal' across countries. Factors such as political situation, market opportunities, demography, availability of raw materials, and even sea access are varying across countries, either in quality or quantities. Thus, tax is not the only thing to be considered by multinational enterprise. Another important consideration is that tax rate policy is product of representative democracy where society -through parliament- expresses their aspiration concerning their fiscal burden. In this setting, countries try to combine their natural advantages with their regulation, including level of their corporate tax rates.[67]

Rather than having convergence corporate tax rate (adjusted into 'satisfactory' level), we are still living in the world with various corporate tax rates, ranging from 0% in Bermuda to 40% in U.S. (in 2014).[68] Contemporary international tax system has yet permit countries to maintain different corporate tax rates, which distort business decision making, either by shift the location of their investments, reorganization, as well as their operations to countries that impose relatively lower tax burdens.[69] Tax rate differential, therefore, will result in in inefficient allocation of profit or savings, even though in the case of interaction between similar tax systems (both pure worldwide or territorial tax system).[70]

Almost all empirical studies in the field of profit shifting found that tax rate differential plays important effect on the profitability of multinationals. For instance, Huizinga and Laeven (2008) found that 1% increase in corporate statutory tax rate would decrease reported profit by 1.3%. The study was done in EU-27's multinational enterprises in the year 1999, where the size of outward profit shifting was highest in Germany (13.6% to their tax base).[71] In general, with consideration of various empirical results, 1% increase of tax rate difference will have impact of 0.8% decrease in pre-tax profitability.[72] While substantial, this magnitude is somewhat smaller overtime.[73]

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65 See John Douglas Wilson and David E. Wildasin, "Capital Tax Competition: Bane or Boon?" *Journal of Public Economics*, Vol. 88, No. 6 (2004): 1065-1091.

66 OECD, "Choosing Broad Base – Low Rate Approach to Taxation," *OECD Tax Policy Studies*, No. 19 (2010): 66.

67 The dynamics of how each country 'sells' their competitiveness in the global world refers to 'tax law market'. See Cees Peters, *On the Legitimacy of International Tax Law* (Amsterdam: IBFD, 2014) on Chapter 2.

68 In US, the federal corporate income tax on the highest income bracket is 35%. Further, state and local government may also impose income taxes. Data is taken from KPMG, Corporate Tax Rates Table. Available online at: http://www.kpmg.com/global/en/services/tax/tax-tools-and-resources/pages/corporate-tax-rates-table.aspx.

69 Arthur J. Cockfield, "Introduction: The Last Battleground of Globalization," in *Globalization and Its Tax Discontents: Tax Policy and International Investments*, ed. Arthur J. Cockfield (Toronto: University of Toronto Press, 2010), 5.

70 Jacob A. Frenkel, Assaf Razin and Efraim Sadka, *International Taxation in an Integrated World* (Massachusetts: MIT Press, 1991), 25-31.

71 See Harry P. Huizinga and Luc Laeven, "International Profit Shifting within Multinationals: A Multi-country Perspective," *Journal of Public Economics*, Vol. 92, Issues 5-6 (2008): 1164 – 1182.

72 See Jost H. Heckemeyer and Michael Overesch, "Multinational's Profit Response to Tax Differentials: Effect Size and Shifting Channels," *ZEW Discussion Paper*, No. 13-045, (2013).

With their advantages to allocate profit across member of the group, foreign controlled corporation usually pays lower tax than domestic firm.[74] Nevertheless, tax rate difference gives heterogeneous effect to profit shifting (as measured by profit sensitivity to change in tax rate differential). If parent firms located in higher tax rate countries than countries where subsidiaries are located, volume of profit shifting will be less significant than if the other case was happened (parent in lower tax country). There is a tendency that multinational enterprises are reluctant to relocate profits away from parent or headquarter, even the rational of tax rate difference acknowledge by them.[75]

B. Tax Havens (Preferential Tax Regime)

Aside from the induced race to the bottom for corporate tax rate, globalisation in tax world also tends to have its side effect: the rise of tax haven. [76] In order to sustain their business, many multinational enterprises based on high tax countries demand the service from jurisdiction, which can increase cost efficiency and provides security.[77] It also argued that in equilibrium of tax competition, small countries (which previously are not tax haven) choose to become tax havens. As a result, tax competition is harmed and many non-haven countries will reduce their corporate tax rates (intense tax competition).[78]

Although there is no precise definition, tax havens are commonly small countries with good governance quality.[79] Moreover, tax haven is defined as a country with the four key characteristics: (i) have no or nominal corporate income taxation; (ii) lack of effective exchange of information with secrecy rules; (iii) lack of transparency in the operation of the legislative, legal or administrative provisions; and (iv) "ring fencing" regimes. OECD also put additional factors: (i) regime with an artificial definition of tax base; (ii) failure to adhere to international transfer pricing principles; (iii) foreign source income exempt from residence country taxation; (iv) negotiable tax rate or tax base; (v) existence of secrecy provisions; (vi) access to wide network of tax treaties; (vii) the regime is promoted as a tax minimization vehicle; and (viii) the regime encourages purely tax-driven operations or arrangements.[80] However, although OECD routinely publishes formal list of tax haven countries,[81]

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73 See Dhammika Dharmapala and Nadine Riedel, "Earnings Shocks and Tax-motivated Income-shifting: Evidence from European Multinationals," *Journal of Public Economics,* Vol. 97, No. 1 (2013): 95-107.

74 See Michael Kinney and Janice Lawrence, "An Analysis of the Relative U.S. Tax Burden of U.S. Corporations Having Substantial Foreign Ownership," *National Tax Journal,* Vol. 53, No. 1 (2000): 9-22.

75 Matthias Dischinger, Bodo Knoll and Nadine Riedel, "The Role of Headquarters in Multinational Profit Shifting Strategies," *International Tax and Public Finance,* Vol. 21, Issue 2 (2014): 268.

76 The term tax havens sometimes also named as: fiscal paradise, conduit country, or preferential tax regime. Although some literatures have made some distinction between them, in this thesis, I will assume that they all basically the same and will be simply referred to as tax haven.

77 Moreover, tax haven also classified as renegade state which is an outlier of the specified practices of international tax regime. See Lorraine Eden and Robert T. Kurdle, "Tax Havens: Renegade States in the International Tax Regime?" *Law and Public Policy,* Vol. 27, No. 1 (2005): 100-127.

78 Joel Slemrod and John D. Wilson, "Tax Competition with Parasitic Tax Havens," *NBER Working Paper,* No. 12225 (2006).

79 Dhammika Dharmapala and James R. Hines, Jr., "Which Countries Become Tax Havens?" *NBER Working Paper,* No. 12802 (2006): 11-15.

80 OECD, *Harmful Tax Competition: An Emerging Global Issue,* (Paris: OECD Publishing, 1998), 26-34.

harmful tax competition is still there. Probably this is caused by the switching feature of preferential tax regime where ring fencing is less popular and replaced by more reductions on specific types of income.[82] Concerning harmful tax practice, OECD will have further work on substantial activity, improving transparency, and review of preferential regimes of associate countries.[83]

Who are the tax havens? Among many papers, contributions from Hines and Rice (1994) and Dharmapala and Hines (2009) have provided us with complete suggestion of the so-called tax havens.[84] While those findings only mentioned 48 tax havens across the world, Tax Justice Network released extravagant list containing 81 countries.[85] However, recent list that could be deliberated as reliable was based on Gravelle.[86] Nowadays, the world has 49 tax havens (see Table 2.1), but this list ignored in-depth evaluation on subnational preferential tax regime (such as Labuan-Malaysia, Basque-Spain).

Ability to hold passive investments, booking paper profits, and shielding from scrutiny tax authorities have made tax havens place to shifting income and deferring corporate income taxes by multinational enterprises.[87] Many of tax planning by multinational enterprises also involved the use of intermediary entities located in tax havens, as one of the key components on their global value chain.[88] Multinational enterprises are very responsive with existence of tax haven, as shown by Devereux (2007).[89] Moreover, in the context of US multinational enterprises, low corporate tax rates in tax havens were also elastic to FDI and affiliates profits.[90]

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81 However, overtime, the numbers of tax havens under OECD formal list is unstable. See James R. Hines, Jr., "Do Tax Havens Flourish?" in *Tax Policy and the Economy*, Volume 19, ed. James Poterba (Massachusetts: MIT Press, 2004), 75.

82 OECD, *Action Plan on Base Erosion and Profit Shifting* (Paris: OECD Publishing, 2013), 17.

83 OECD, *Countering Harmful Tax Practices More Effectively, Taking into Account Transparency and Substance*, OECD/G-20 Base Erosion and Profit Shifting Project. (Paris: OECD Publishing, 2014), 63-64.

84 James R. Hines, Jr. and Eric M. Rice, "Fiscal Paradise: Foreign Tax Havens and American Business," *The Quarterly Journal of Economics,* Vol. 109, No. 1 (1994): 149-182; and Dhammika Dharmapala and James R. Hines, Jr., "Which Countries Become Tax Havens?", *NBER Working Paper,* No. 12802 (2006).

85 Tax Justice Network, "Identifying Tax Havens and Offshore Finance Centers" (2007). Available online at: http://www.taxjustice.net/cms/upload/pdf/Identifying_Tax_Havens_Jul_07.pdf

86 Jane G. Gravelle, "Tax Havens: International Tax Avoidance and Evasion," *Congressional Research Service Report* 7-5700/R40623 (2015).

87 Charles E. McLure, Jr., "Will the OECD Initiative on Harmful Tax Competition Help Developing and Transition Countries?" *Bulletin for International Taxation,* Vol. 55, No. 8 (March, 2005): 92.

88 Hugh J. Ault, Wolfgang Schon, and Stephen E. Shay, "Base Erosion and Profit Shifting: A Roadmap to Reform," *Bulletin for International Taxation,* Vol. 68, No. 6/7 (2014): 276.

89 Based on survey by Devereux on papers from Mihir Desai, C.F. Foley and James R. Hines, Jr., "The Demand for Tax Haven Operations," *Journal of Public Economics* 90 (2006): 513-531; and Harry Grubert and Joel Slemrod, "The Effect of Taxes on Investment and Income Shifting to Puerto Rico," *The Review of Economics and Statistics* 80 (1998): 365-373. See Michael P. Devereux, "The Impact of Taxation on the Location of Capital, Firms and Profit: A Survey of Empirical Evidence," *Oxford University Centre for Business Taxation Working Paper* 07/02 (2007): 37-38.

90 See James R. Hines, Jr. and Eric M. Rice, "Fiscal Paradise: Foreign Tax Havens and American Business," *The Quarterly Journal of Economics,* Vol. 109, No. 1 (1994): 149-182.

Table 2.1 – List of Tax Haven Countries

1	Andorra	26	Luxembourg
2	Anguilla	27	Macau
3	Antigua and Barbuda	28	Maldives
4	Aruba	29	Malta
5	Bahamas	30	Marshall Islands
6	Bahrain	31	Mauritius
7	Barbados	32	Monaco
8	Belize	33	Montserrat
9	Bermuda	34	Nauru
10	British Virgin Islands	35	Netherlands Antilles
11	Cayman Islands	36	Niue
12	Channel Islands (Guernsey and Jersey)	37	Panama
13	Cook Islands	38	Samoa
14	Costa Rica	39	San Marino
15	Cyprus	40	Seychelles
16	Dominica	41	Singapore
17	Gibraltar	42	St. Kitts and Nevis
18	Grenada	43	St. Lucia
19	Hong Kong	44	St. Vincent and Grenadines
20	Ireland	45	Switzerland
21	Isle of Man	46	Tonga
22	Jordan	47	Turks and Caicos
23	Lebanon	48	US Virgin Islands
24	Liberia	49	Vanuatu
25	Liechtenstein		

Source: all countries based on Jane G. Gravelle, "Tax Havens: International Tax Avoidance and Evasion, *Congressional Research Service Report*, No. 7-5700/R40623 (2015), Table 1.

Another study held by Maffini for multinational enterprises in 15 OECD countries has also proved relationship between tax haven network and reported profit. By using consolidated data, he found that multinational enterprise with additional tax haven subsidiary reduces tax liabilities over total assets by about 7% in the short run and 7.4% in the long run.[91] Nevertheless, the use of tax haven network itself cannot be separated with corporate tax rate situation. Study by Gumpert, Hines, and Schnitzer (2011) of German manufacturing firms exposed that multinational enterprise that deals with higher foreign tax rate are associated with the likelihood to have tax haven affiliates.[92] Therefore, it is important to bear in mind that tax rate is the main incentive factor.

[91] Giorgia Maffini, "Tax Haven Activities and the Tax Liabilities of Multinational Groups," *Oxford University Centre for Business Taxation Working Paper* 09/25 (2009): 32.

[92] Sample period from 2002 – 2008. See Anna Gumpert, James R. Hines, Jr., and Monika Schnitzer, "The Use of Tax Havens in Exemption Regimes," *NBER Working Paper,* No. 17644 (2011).

It can be concluded that corporate tax rate differences and tax haven networks will drive the amount of tax savings associated with the amount of shifted income to affiliates, and play important role as an incentive.

2.3.2. Profit Shifting Schemes

Multinational enterprises own various channels to shifting profit.[93] Two popular profit shifting strategies are: debt shifting and transfer price manipulation, since opportunities and incentives are greater for both schemes. Supremacy of both schemes can be traced from number of disputes, limelight, or any empirical studies.[94]

Concerning the importance of problems (and realized many technical application difficulties), OECD has comprised these on BEPS Action Plan.[95] Effort to limit base erosion via interest deduction and other financial payments, as heavily regards to debt shifting, is the target of Action Plan 4. Meanwhile, transfer price manipulation received much attention either from substantial and administrative perspective. The substantial matter has centred in discussion of inclusion value creation element in the context of intangibles, hard-to-value intangibles, risks and capital, and other high risk transaction (Action Plan 8, 9, and 10). Additionally, administrative matter is concerned with idea to re-examine transfer pricing documentation and prospect of country by country reporting (Action Plan 13).

A. Tax efficient financial structure: debt shifting

Different tax treatment among debt and equity creates distortionary effect on financing decision.[96] Financing strategy through debt is more preferable regarding to tax base reduction, and as a consequence, lower cost of capital.[97] This is also supported by the idea of optimal value cost of capital which can be measured through weighted average of cost of debt and cost of equity (weighted cost of capital), where cost of debt considers after tax cost of debt. [98] As a result, taxable firms will react by prefers more debt in their capital structure, particularly in the context of cross-border financing.

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93 Kimberly A. Clausing, "Multinational Firm Tax Avoidance and Tax Policy," *National Tax Journal* Vol. LXIl, No. 4, (2009): 703-725. At the scene, Google, Amazon, Starbucks, and Apple were among the most popular example on how the business takes opportunity from mismatch of tax policies across countries. See detail profit scheme by Google in Clemens Fuest, et al., "Profit Shifting and 'Aggressive' Tax Planning by Multinational Firms: Issues and Options for Reform," *ZEW Discussion Paper*, No.13-044 (2013).

94 For instance, see trend in transfer pricing disputes as discuss in detail in Eduardo Baistrocchi and Ian Roxan (eds), *Resolving Transfer Pricing Disputes: A Global Analysis* (Cambridge: Cambridge University Press, 2012).

95 OECD, *Action Plan on Base Erosion and Profit Shifting* (Paris: OECD Publishing, 2013), 17 – 23.

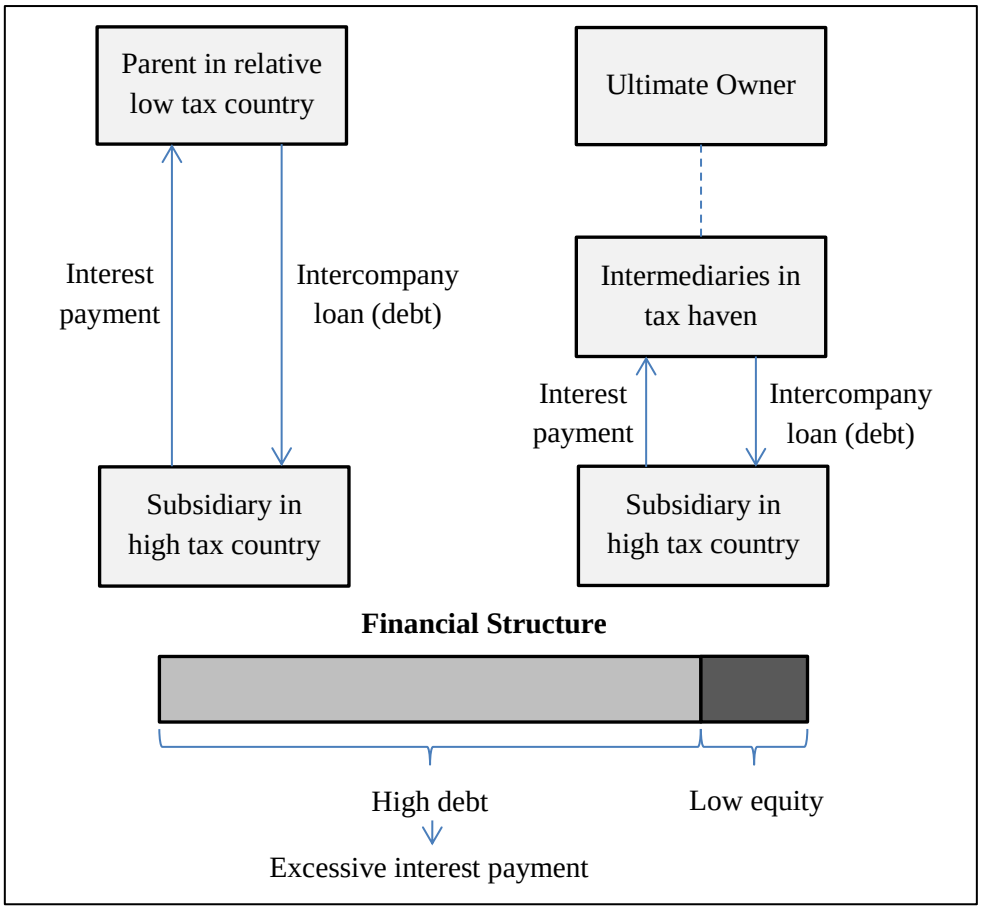
96 However, there are several non-tax factor motivations which could bring distortion in financing, such as: arguments on bankruptcy cost, agency cost, signalling effects, and others. See Serena Fatica, Thomas Hemmelgarn, Gaetan Nicodeme, "The Debt-Equity Tax Bias: Consequences and Solutions," *EC Taxation Papers* No. 33 (2012): 3-4.

97 Aswath Damodaran, *Applied Corporate Finance*, (John Wiley and Son, 2010), 493.

98 Peter H. Blessing, "The Debt-Equity Conundrum – A Prequel," *Bulletin for International Taxation*, Vol. 66, No. 4/5 (2012): 200.

The idea of cross border excessive debt will be much important if they take place within the multinational enterprise (intra-group).[99] With their common strategy and ability to coordinate under the same effective control, multinational enterprises would have the flexibility to build any debt scheme and to place debt in high tax country.[100] The most common scheme in tax efficient financial structure is thin capitalisation, a situation where financial structure of a multinational enterprise is imbalanced and most came from debt (see Figure 2.1). However, thin capitalisation is not the only financial technique to shifting profit. Parent firm could also provide guarantee to third party or bank that will perform as lender for subsidiary; or third party loans with rights to take recourse on the shareholder.[101] In the end, growing complexity of financial instruments often recycled as alternative scheme of profit shifting through interest payment.[102]

Figure 2.1 – Illustration of Debt Shifting Incentivized by Tax Rate Difference and Tax Haven



99 If the loan agreements take place between unrelated parties, the creditors (lenders) neither have ability nor authority to refinancing via equity.

100 Yoshihiro Masui, "Interest Deduction, Corporate Groups and Tax Jurisdictions – A Hitchhiker's Guide to an Aspect of the BEPS Project," *Asia Pacific Tax Bulletin*, Vol. 20, No. 2 (2014): 103-105.

101 Detlev J. Piltz, "General Report, Subject II: 'International Aspects of Thin Capitalization,'" *Cashier de droit fiscal international*, Vol. LXXXIb (The Hague: Kluwer Law International, 1996), 107-108.

102 Edoardo Traversa, "Interest Deductibility and the BEPS Action Plan: *Nihil Novi Sub Sole*?" *British Tax Review* No. 5 (2013), 609.

All else being equal (ceteris paribus), tax incentives to funding their foreign related party by intercompany loan increases with the gap of tax rate between domestic and country where their related party operates.[103] Therefore, higher tax rate difference will influence multinational enterprise to have more debt from their affiliation. This argument is also supported by various empirical studies. For instance, de Mooij (1995) found that the relationship between the tax rate and debt to equity ratio was shown by positive sign and it is increasing over time.[104] Study by Miniaci, Parisi, and Panteghini (2014) for multinational enterprises in 38 European countries during 1998 – 2007 also found that subsidiary leverage level increases with corporate tax rates in countries where they operates.[105]

B. Non-financial technique: transfer price manipulation

Today, transfer pricing is top international tax risk issue faced by multinational enterprises.[106] Transfer pricing basically is a pricing strategy for goods or service traded within group. It is a consequence of the integrated economic functions between divisions (firms). However, the term often sited into pejorative sense,[107] where 'transfer pricing' paralleled with 'transfer price manipulation'. Eden defined transfer price manipulation as: "…the over or under invoicing of related party transactions in order to avoid government regulations (e.g. under invoicing to avoid paying ad-valorem tariffs) or to exploit cross-border differences in these rates…".[108] Therefore, transfer price manipulation is harmful from government's point of view.

In front of multinational enterprises, interaction of various tax systems is grasped as exogenous market imperfections that can be arbitraged through transfer price manipulation. The idea is simple: to transfer income into low-tax rate affiliation (e.g. selling products with low price) and to transfer cost into high tax rate affiliation (e.g. high royalty rate payment). Economic integration of multinational enterprise enabled them to create 'internal market' and distort price decision on behalf of maximizing group's profit. Therefore, the more independent of firm from their parent, there is less probability that the pricing of transactions between them could be distorted by any control. Firm with more autonomous subsidiaries are less likely to use transfer pricing scheme as their profit shifting strategy.[109]

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103 John R. Graham, "Taxes and Corporate Finance: A Review," *The Review of Financial Studies*, Vol. 16, No. 4 (2003): 1101.

104 Ruud A. de Mooij, "The Tax Elasticity of Corporate Debt: A Synthesis of Size and Variations," *IMF Working Paper* WP/11/95 (1995): 21.

105 Raffaele Miniaci, Maria Laura Parisi and P.M. Panteghini, "Debt Shifting in Europe", *International Tax and Public Finance*, Vol. 21, No. 3 (2014): 426- 427.

106 EY, *Bridging the Divide: Highlights from the 2014 Tax Risk and Controversy Survey* (EY, 2014), 12 – 13.

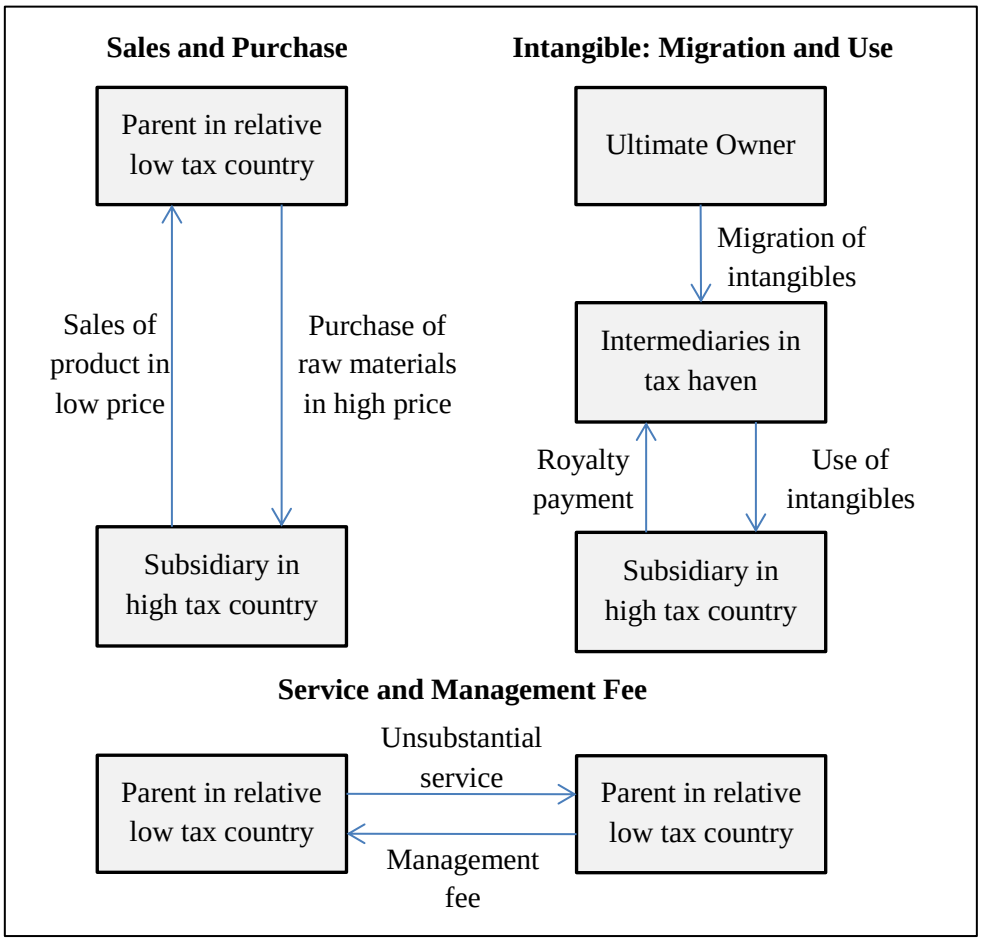
107 For instance, transfer pricing also defined as a tax minimization technique involving the manipulation of the price of goods or services such that profits, and hence assessable income, is transferred between entities. See Butterworths, *Business and Law Dictionary* (Sydney: Butterworths, 1997), 447.

108 Lorraine Eden, "Taxes, Transfer Pricing, and the Multinational Enterprise", in *The Oxford Handbook of International Business*, ed. Alan M. Rugman (New York: Oxford University Press, 2009), 593.

109 See Penelope J. Yunker, *Transfer Pricing and Performance Evaluation in Multinational Corporations: A Survey Study* (New York: Praeger Publishers, 1982).

Transfer price manipulation is not only about the pricing of product or service; currently, migration of intangible property, business restructuring, and payment of management fee without substance are getting popular (see Figure 2.2). Intangible property -which is the most disputable area in transfer pricing nowadays- involves debates on legal and economic ownership, as well as valuation technique.[110] Moreover, in accordance with the dynamic of commercial, business restructuring cannot be avoidable and often serves as a scheme to transfer price manipulation. Changing business scheme (legal form) without reallocation of functions, assets, and risks (economic substance) potentially will change allocation of remuneration within the multinational enterprises in unfair arrangement.[111]

Figure 2.2 – Illustration of Transfer Price Manipulation Incentivized by Tax Rate Difference and Tax Haven



Comparing both channels at first sight, it is ambiguous whether debt-shifting or transfer price manipulation as the most preferable profit shifting strategies. In the context of US multinationals

[110] Loek Helderman, Eduard Sporken dan Rezan Okten, "The Revised OECD Discussion Draft on Transfer Pricing Aspects of Intangibles," *International Transfer Pricing Journal*, Vol. 21, No.1 (2014): 5.

[111] Anuschka J. Bakker and Giammarco Cottani, "Transfer Pricing and Business Restructuring: The Choice of Hercules before the Tax Authorities," *International Transfer Pricing Journal*, Vol. 15, No. 6 (2008): 276; and Joel Cooper and Shee Boon Law, "Business Restructuring and Permanent Establishments," *International Transfer Pricing Journal*, Vol. 17, No. 4 (2010): 249.

firms, Grubert confirmed that both are equal and no one is dominating among others.[112] Meanwhile, Dharmapala and Riedel found that debt shifting was the favourable strategy.[113] However, based on meta-analysis from 237 primary estimates sampled from 25 empirical studies; it has been proved that transfer price manipulation is the prevailing scheme to shifting the profit throughout the firm.[114]

2.4. Disincentives for Profit Shifting

Everything constant, any profit shifting strategies should be limited only by the capability of tax authority to detect such schemes.[115] Although OECD project on BEPS seems to underrate the individual government in combating profit shifting and simply gives the solution to multilateral cooperation, countries basically have self-initiatives to maximize their national welfare by creating disincentives for profit shifting based on their rational behaviour.[116]

In combating profit shifting, there is an increasing trend among countries to set anti-tax avoidance rules. These rules could be divided into two types: specific anti avoidance rules (SAAR) and general anti avoidance rules (GAAR). SAAR meant to focus on specific (individual) tax avoidance practice, such as transfer pricing rules, interest limitation rules[117], and others. Nowadays, SAAR becomes one key element in 21st tax policy design. On the other hand, GAAR –which has broad perspective to the so called tax avoidance- rely more on the substance of transaction.[118] Since I only focus with debt shifting and transfer price manipulation; this section will purely elaborate rules that creates disincentive to such schemes: interest limitation rules and transfer pricing rules.

Basically, decision to have profit shifting strategies can be reduced by creating anti avoidance rules as 'disincentive'. Some academicians refer these rules as 'cost' for doing profit shifting, but this seems ambiguous, since the term 'cost' is closely related with cost of book keeping and other accounting practices (internal management). Moreover, cost of profit shifting could be more complex in nature,

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112 See Harry Grubert, "Intangible Income, Intercompany Transactions, Income Shifting, and the Choice of Location," *National Tax Journal* Vol. 56, No. 1 (2003): 221–242.

113 See Dhammika Dharmapala, "What Problems and Opportunities are Created by Tax Havens?", *Oxford Review of Economic Policy*, Vol. 24, No. 4 (2008): 661–679.

114 See Jost H. Heckemeyer and Michael Overesch, "Multinational's Profit Response to Tax Differentials: Effect Size and Shifting Channels," *ZEW Discussion Paper* No. 13-045, (2013).

115 Richard E. Caves, *Multinational Enterprise and Economic Analysis*, 3rd edition (New York: Cambridge University Press, 2007), 246.

116 As discussed by Dhammika Dharmapala, "Base Erosion and Profit Shifting: A Simple Conceptual Framework," *Coase-Sandor Institute for Law & Economics Working Paper* No. 703, (2014).

117 See Chloe Burnett, "Intra-Group Debt at the Crossroads: Stand-Alone versus Worldwide Approach", *World Tax Journal*, Vol. 6, No.1 (2014): 43.

118 GAAR allows tax authority to disregard any schemes that potentially reduce tax liability. Although GAAR receives criticisms from many scholars regarding to its uncertainty effect, several countries have started to apply it on their domestic rule. See Judith Freedman, "Analysis GAAR: Challenging Assumptions" www.taxjournal.com, 27 September 2010; or Rebecca Prebble and John Prebble, "Does the Use of General Anti-Avoidance Rules to Combat Tax Avoidance Breach Principles of the Rule of Law? A Comparative Study," *Saint Louis University Law Journal*, Vol. 55, No. 21 (2010): 21-46.

since it involves reputation risk as impact from public concern and fixed cost to reallocation of technology or establish an intermediary.[119]

In this thesis, I will use terminology 'disincentive' to refer any anti-avoidance rules, which could influence decision to not to have profit shifting. Following many empirical studies on cost of tax avoidance or evasion, this disincentive assumed to be proportional to amount of profit shifting.[120] Although non anti-avoidance rules might be relevant as disincentive -such as information exchange agreement, withholding tax, and others- they will be excluded from discussion.

2.4.1. Interest Limitation Rules

Many countries today apply domestic rules to prevent intra-group excessive debt, which refers to interest limitation measures. They believe that excessive debt capital might be encouraging erosion of country's tax revenue.[121] Therefore, it is very common to have provision on debt reclassification or to cancel deductibility for any amount of debt that is considered as excessive. [122]

The most common approach to test whether the firms have reasonable financial structure and interest payment is rely on a fixed ratio of debt to equity (DER).[123] Limit of the appropriate debt to equity ratio is quite intriguing. The mark between the 'appropriate' and 'excessive' debt is hard to measure. From government's perspective, efforts to take into account all business model and economic sectors will result in numerous ratio, which indeed will create more administrative inconveniences, especially when assessing complex business model. Therefore, many countries only set up one single debt to equity ratio, mostly around 3:1.[124] Most countries also permit firms in the financial sector to have higher DER. This is because the assets of financial institutions are generally viewed as more readily marketable (or more liquid) and they perform as intermediary in financial market, which their main business to provides borrowing.[125]

Although this approach offers ease of administration, several questions still remain: the definition of debt and equity, equity measurement (historical vs. fair value), less consideration on interest payment, and challenge for determining the appropriate debt to equity ratio.[126] Further, some claim that the thin capitalization rules with regards to debt to equity ratio are arbitrary, very subjective, and may not

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119 Discussion on these costs could be found at James R. Hines, Jr., "How Serious a Problem is Base Erosion and Profit Shifting," *Canadian Tax Journal,* Vol. 62, No.2 (2014): 450.

120 I will discuss this on Chapter 4.

121 Peter H. Blessing, "The Debt-Equity Conundrum – A Prequel," *Bulletin for International Taxation,* Vol. 66, No. 4/5 (2012): 198.

122 Jennifer Blouin, et al., "Thin capitalization Rules and Multinational Firm Capital Structure," *CEPR Discussion Paper* No. 9830 (2014): 1-2.

123 Please note that interest limitation rules have many variations, such as: fixed interest to EBITDA ratio, targeted rules, worldwide debt, interest to assets ratio, and others.

124 It is ranging between 0.75:1 and 6:1 for normal firms. See Jennifer Blouin, et al., "Thin Capitalization Rules and Multinational Firm Capital Structure," *IMF Working Paper* WP/14/12 (2014): 23-24.

125 Peter A. Barnes, "Limiting Interest Deduction and Other Financial Payments," *Papers on Selected Topics in Protecting the Tax Base of Developing Countries,* UN DESA (2014): 12.

126 Peter A. Barnes, "Limiting Interest Deduction and Other Financial Payments," *Papers on Selected Topics in Protecting the Tax Base of Developing Countries,* UN DESA (2014): 14.

necessarily represent market reality. This was supported by the fact that in principle, fixed debt to equity ratio does not contemplate any circumstances of firm, such as: industry sector, development phase of firm, and others. On the other hand, other approach such as arm's length principle, offers more comprehensive approach on how to assess excessive debt especially on dealing with intercompany loan. Under interest limitation rule, arm's length principle will be applied by comparing debt to equity ratio of taxpayer with debt to equity ratio from other independent comparable firms.[127]

Nevertheless, the impacts of this policy to firms' capital structure are relatively promising. At least, it can ensure towards more balance between debt and equity. For instance, the effect to subsidiaries of all German multinationals in 36 countries showed that thin capitalization rules encourage the use of external debt, limited substitution of external for internal debt, and total debt to equity ratio declines.[128] Studies on foreign affiliates of US multinationals in 54 countries during 1982 – 2004 showed that thin capitalisation regimes restrict the ratio of an affiliate's total debt to assets up to 43% of the case.[129]

2.4.2. Transfer Pricing Rules

Concerned with the possibility for manipulation of internal group transactions, there is a tremendous growth of transfer pricing rule across countries. The fundamental basis for transfer pricing rule is the arm's length principle (ALP), which mainly refers to the Article 9 of either OECD or UN Model Tax Convention about associated enterprise.[130] Basically, any controlled transactions (transaction between affiliated entities) should compare with any independent transaction (not distorted directly or indirectly by participation in management, control or capital).

The application of arm's length principle is explained in integrated detail through OECD Transfer Pricing Guidelines.[131] Arm's length principle has been chosen as the fundamental of transfer pricing rule since it "provides broad parity of tax treatment for multinational and independent enterprises" and thus could eliminate any tax advantages or disadvantages that might accrue solely from the

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127 Luis Coronado, Patrick Cheung, and Justin Kyte, "An Overview of Arm's Length Approaches to Thin Capitalization," *International Transfer Pricing Journal*, Vol.17, No. 4 (2010): 271.

128 Thiess Buettner, et al., "The Impact of Thin-Capitalization Rules on the Capital Structure of Multinational Firms", *Journal of Public Economics*, Vol. 96, Issue 11-12 (2012): 937.

129 Jennifer Blouin, et al., "Thin capitalization Rules and Multinational Firm Capital Structure, *CEPR Discussion Paper* No. 9830 (2014): 29-30.

130 Article 9 (1) of OECD Model Tax Convention consist the concepts of associated enterprise and arm's length principle, while Article 9 (2) concern on corresponding adjustment to avoid economic double taxation.

131 From law perspective, both OECD Model Tax Convention and OECD Transfer Pricing Guidelines are commonly classified as a soft law –which is not legally binding but influence design of rules in transfer pricing-. The influenced of those documents also reflected in many transfer pricing rules, even in emerging economic countries such as China and India. See Jinyan Li, "Soft Law, Hard Realities and Pragmatic Suggestions: Critiquing the OECD Transfer Pricing Guidelines," in *Fundamentals of International Transfer Pricing in Law and Economics*, eds. Wolfgang Schon and Kai A. Konrad (Munich: Springer, 2012), 78; or Ramon Dwarkasing, *Associated Enterprises: A Concept Essential for the Application of the Arm's Length Principle and Transfer Pricing* (Nijmegen: Wolf Legal Publisher, 2011), 3.

organizational form of the enterprise.[132] Moreover, arm's length principle also proved successfully to be applied in many cases and widely regarded closely related with the working of open market.[133]

To check whether controlled transaction already at arm's length or not, there are five transfer pricing methods that suggested by OECD and also available in many transfer pricing rule, as following: comparable uncontrolled price (CUP) method, resale price method (RPM), cost plus (C+) method, transactional net margin method (TNMM)[134], and profit split method (PSM). Selection of transfer pricing method is based on 'the most appropriate method' procedure, which put considerations on nature of the transactions, availability of data, advantages and disadvantages of every method, and degree of comparability.[135] Further, comparability analysis, which is the heart of arm's length principle,[136] requires comparable transactions/firms. There are five comparability factors which should be considered: characteristic of goods, functional analysis, contractual terms, economic circumstances and business strategy.[137]

Today, more than 70 countries in the world have mentioned arm's length principle on their tax law. There are tendencies that transfer pricing regulations in various countries are getting stricter, exposed by the obligation for multinational enterprise to submit transfer pricing documentation. Before 2001, only 14 countries that have transfer pricing documentation requirement for affiliated transactions. In 10 years (2011), the figures quadruple to 58 countries.[138] Several countries had also armoured themselves with penalty and other re-characterizing clause.[139]

Obligation to provide transfer pricing documentation (either when submitting tax return or during audit process) as well as plausibility of transfer pricing penalties are very relevant in reducing profit shifting strategies. Lohse and Riedel estimate that transfer price manipulation channel could be reduced up to 50% with stricter legislation.[140] Optimal incentive and tax transfer prices decreases as the penalty for non-arm's length pricing increases, as well as if the probability of being penalized

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132 OECD, *OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations*, (Paris: OECD Publishing, 2010), Paragraph 1.8.

133 OECD, *OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations*, (Paris: OECD Publishing, 2010), Paragraph 1.9 and 1.14.

134 TNMM was originated from comparable profit method (CPM), method to comparing profitability indicators in U.S. See Jamil Ahmadov, "The 'Most Appropriate Method' as the New OECD Transfer Pricing Standard: Has the Hierarchy of Methods Been Completely Eliminated?" *International Transfer Pricing Journal*, Vol. 18, No. 3 (2011): 189.

135 OECD, *OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations*, (Paris: OECD Publishing, 2010), Paragraph 2.2.

136 OECD, *OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations*, (Paris: OECD Publishing, 2010), Paragraph 1.6.

137 OECD, *OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations*, (Paris: OECD Publishing, 2010), Paragraph 1.36.

138 UN, *United Nations Practical Manual on Transfer Pricing for Developing Countries (*New York: UN, 2013), 264.

139 See Theresa Lohse, Nadine Riedel, and Christoph Spengel, "The Increasing Importance of Transfer Pricing Regulations – A Worldwide Overview," *Oxford Centre for Business Taxation Working Paper* WP 12/27 (2012).

140 See Theresa Lohse and Nadine Riedel, "Do Transfer Pricing Laws Limit International Income Shifting? Evidence from European Multinationals", *CESifo Working Paper* No. 4404 (2013).

increases.[141] Stricter transfer pricing and interest limitation rule also associated to less aggressive tax planning with tax haven network.[142]

2.5. Conclusion

This chapter finally conclude that the current international tax system have created fundamental opportunity or encouragement for multinational enterprises to shift profits among their affiliations. The opportunities are justified namely by uncoordinated tax system across countries (jurisdiction to tax), separate accounting approach and common practice on deductibility of interest payment.

Moreover, this opportunity is also supported by state's sovereignty to set up domestic tax rates. In the midst of globalisation and when capital are (relatively) mobile, almost all countries have tried to reduce their statutory tax rate, while some of them also behave as fiscal paradise (tax havens). Unfortunately, the 'race to the bottom' process did not result in convergence tax rates concerning political economy of tax system in each country and needs of revenue to financing their development. Today, multinational firms still live with various tax rates and view this condition as an incentive to build their tax planning, including profit shifting strategies. As discussed on section 2.3.2, transfer price manipulation and debt shifting are two the most favourable channels to shift profit to foreign affiliation, especially when gap of tax rates were exist.

As a result, countries are struggling to produce anti-avoidance rule in order to limits profit shifting strategies by multinational enterprises. Interest limitation rule, which is established to limit excessive interest payments, is mainly designed via fixed debt to equity ratio (or other denominator) or reliance on arm's length financial structure. On the other hand, transfer pricing rule is strictly following arm's length principle which requires comparable transaction/company. As to comply with arm's length principle, multinational enterprises in many countries are also obliged to prepare transfer pricing documentation.

In short, opportunities, incentives, and disincentives for profit shifting strategies influences business decision making. Therefore, those components will affect level of profitability of each firm in the multinational group.

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141 Charles E. Hyde and Chongwoo Choe, "Keeping Two Sets of Books; The Relationship between Tax and Incentive Transfer Prices", *Journal of Economics & Management Strategy,* Vol 14, No. 1 (2005): 175.

142 Empirical studies for German multinational enterprises in 189 countries during 1996 to 2010. See Thiess Buettner, et al., "Anti-Tax Avoidance Rules and Multinationals' Tax-Haven Demand", *Paper for Annual Public Finance Seminar 2012 at the LMU Munich and 10th MiDi-Workshop of Deutsche Bundesbank in Frankfurt in November 2012* (Unpublished, 2012).

Chapter 3

Taxation, Globalisation, and Profit Shifting in Developing Countries

3.1. Introduction

Taxation (policy and administration) in developing countries has been a concern for many researchers and received much attention because of its various dimensions.[143] **First** dimension is potential benefits of taxation to the state building. The idea of strengthening state power, as mentioned by Fukuyama, requires pro-active government in public expenditure policy (size of the budget), which might be satisfactory if there is an adequate source of revenue.[144] Taxation plays the key important role in state building via two channels. On one hand, taxation can build fiscal contract that may bring representative democracy, and as main source of revenue to strengthening state capacity on the other.[145] This has been an important lesson of the history of development stages of taxation all over the world.

Secondly, apart from the potential benefit to state building, today, foreign aid is no longer sufficient as source to financing development.[146] Development assistance from donor countries and foremost multilateral organization -which has been source of revenue for decades mostly in low-income countries- were in the stagnation period. Many of those institutions rethink their aid policies, concerning the unproductive fund and failure of developing countries to recover their economic and social status.[147] There has been alteration in the agenda, where more efforts were given in the area of taxation and how they can assist developing countries to build capacity of revenue authorities.

Third dimension is trade liberalisation. Globalisation in tandem with international trade liberalisation has opened up tremendous opportunities for economic progress, but it has posed and continues to pose real and severe risks to vulnerable developing economies, especially in the field of taxation. With regards to the goal of trade liberalization promoted by World Trade Organization (WTO), many

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143 Giulia Mascagni, Mick Moore, and Rhiannon McCluskey, *Tax Revenue Mobilisation in Developing Countries: Issues and Challenges*, European Parliament – Directorate General for External Policies of the Union (2014), 8-10.

144 See Francis Fukuyama, *State Building* (New York: Cornell University Press, 2004).

145 Deborah Brautigam, "Introduction: Taxation and State-Building in Developing Countries" in *Taxation and State Building in Developing Countries*, eds. Deborah Brautigam, Odd-Helge Fjeldstat, and Mick Moore (New York: Cambridge University Press, 2008), 1-2.

146 UN, *The Global Partnership for Development: Making Rhetoric a Reality*, MDG Gap Task Force Report 2012 (New York: United Nations Publication, 2012), 8.

147 Moreover, there is negative relationship between official development assistance and domestic tax revenue. See Dora Benedek et al., "Foreign Aid and Revenue: Still a Crowding Out Effect?" *IMF Working Paper* WP/12/186 (2012); or Sanjeev Gupta et al., "Foreign Aid and Revenue Response: Does the Composition of Aid Matter?", *IMF Working Paper* WP/03/176 (2003).

developing countries are enforced to comply with elimination of trade barriers, including tax.[148] As a result, revenue from international trade taxes (import duty or other tax related with cross-border goods) fell down, whereas this type of taxation previously was a backbone because of its simple administration procedure. This situation has changed tax structure in many of developing countries.

Fourthly, fiscal policy getting concerned by many stakeholders in developed countries, especially after the 2008 crisis. Global economic crisis have fundamentally changed state fiscal stability, especially in the US and EU.[149] With the need to have extra budget to stimulate the economy while at the same time revenue declined as result to downturn in economic activity, fiscal deficit had has become a major risk. In order to deal with such crisis, many governments reformed their tax system and policies, for instance by setting up new tariff, broadening tax base, or increasing more attention to tax avoidance practices.[150] Concerned by this situation, many non-governmental organisations (NGOs) are also switching their focus from expenditure side of the government (allocation of budget, distribution, subsidy, corruption in public expenditure, and others) into revenue side.[151] Global policy focus, therefore, moves towards taxation and influenced many stakeholders in developing countries.

Lastly, dimension of effort to financing development in order to fulfil any multilateral agreement. Developing countries are under pressure with suggestion to increase their tax revenue in order to achieve target, such as ones set in Millennium Development Goals (MDGs).[152] Further, Doha Conference in 2008 has had warrant that developing countries shall continue to undertake tax reform as key to mobilizing domestic public resource.[153]

With regards to previous explanations, those five dimensions have nothing to do with profit shifting, at least by direct connotation. However, since profit shifting strategies is also one of the main taxation problems nowadays, it was not surprising if OECD, along with International Monetary Fund (IMF), World Bank (WB), and United Nations (UN) work together to serve under the project "BEPS and developing countries" for G-20. In their preliminary work for the Development Working Group

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148 Roy Bahl and Richard M. Bird, "Tax Policy in Developing Countries: Looking Back – and Forward," *National Tax Journal* Vol. LXI, No.2, (2008): 289.

149 See IMF, "Fiscal Implications of the Global Economic and Financial Crisis", *IMF Staff Position Note* SPN/09/13, (2009).

150 See Eurostat, *Taxation Trends in the European Union: Data for the EU Member States, Iceland, and Norway* (Luxembourg: Publication Office of the EU, 2014); and Pierre LeBlanc, Stephen Matthews, and Kirsti Mellybe, "The Tax Policy Landscape Five Years after the Crisis," *OECD Taxation Working Papers*, No. 17 (2013).

151 There are several NGOs those very actives in the field of taxation, namely: Publish What You Pay, ActionAid UK, Global Financial Integrity, Tax Justice Network, and others. One of the most trembling publication by NGO is a toolkit published under cooperation between Christian Aid and SOMO, see Sally Golding et al.., *Tax Justice Advocacy: A Toolkit for Civil Society*, (Christian Aid and SOMO, 2011).

152 Low income countries have to increase their tax ratio (tax revenue to GDP) by 4 percent. See UN, *Investing in Development* (New York: United Nations, 2005).

153 UN, *Doha Declaration on Financing for Development.* Outcome Document of the Follow-up International Conference on Financing for Development to Review the Implementation of the Monterrey Consensus, (Doha – Qatar 2009), Point 16.

(DWG) of G-20, OECD stressed out that developing countries were also the victims of current international tax system.[154]

Even it is clear that the aim is to mainstream the issue of BEPS and to ensure chance of success of multilateral solutions,[155] several questions still remain: do developing countries have the same level of interest (scope of problems) as the OECD members did? Why and how do they suffer from profit shifting? Should developing countries receive distinct approach to solve profit shifting?

In order to analyse profit shifting in developing countries, it is very important to have an overview of tax situation in these countries. Moreover, globalisation as characterized by opportunity for multinational enterprise to choose the most efficient tax structure interacted with taxation in developing countries, particularly with their corporate tax policies. The consequences were, more or less, occurred at the same pattern with what happened in developed economies. However, the scale of opportunities, incentives, and constraints to have profit shifting strategies might be different into some degrees. This chapter aims to find answers to those questions, building on critical analyses of impact of behaviour of multinational enterprise in supportive environment to have profit shifting strategies.

3.2. Taxation in Developing Countries

3.2.1. Tax Revenue Performance

Despite of having sufficient fund for financing their lags of development, developing countries are having low tax revenue. But, how low is tax revenue in developing countries? Using tax revenue to GDP ratio (tax ratio), it is clear that developing countries are lacking behind than advanced economies. From time to time, as shown in Table 3.1, tax ratio in low and middle income countries are roughly half to two third tax ratio in advanced economies. Many have argued that most governments in developing countries should learn how to tax[156] and how the political setting in developing countries is less amenable for rational tax policy.[157]

However, tax ratio comparison between groups of economic level is not absent for criticism.[158] Since developing countries seem to have more limitation to broadening their taxable capacity, it is impossible to have the same tax ratio as in the level of high income countries; unless countries also

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154 OECD, *Part 1 of A Report to G-20 Development Working Group on the Impact of BESP in Low Income Countries* (Paris: OECD Publishing, 2014), 11.

155 The framework of BEPS is addressed to all countries as stated on their document "The OECD is committed to delivering a global and comprehensive action plan based on in-depth analysis of the identified pressure areas with a view to provide concrete solutions to realign international standards with the current global business environment." See OECD, *Addressing Base Erosion and Profit Shifting* (Paris: OECD Publishing, 2013), 51. Moreover, regarding to this intention they tries not to come up with fundamental changes in the proposal.

156 See seminal paper by Nicholas Kaldor, "Will Underdeveloped Countries Learn to Tax?" *Foreign Affairs*, Vol. 41, Issue 2 (1963): 410-419.

157 Vito Tanzi and Howell H. Zee, "Tax Policy for Emerging Markets: Developing Countries," *National Tax Journal*, Vol. LIII, No.2, (2000): 299.

158 See Roy W. Bahl, "A Regression Approach to Tax Effort and Tax Ratio Analysis," *IMF Staff Papers*, 18 (1971): 570-612.

improve their economic level. Alternative criteria to evaluate tax performance such as: tax buoyancy and tax effort (tax coverage ratio) are worth to be considered.[159] Today, tax effort is considerably the best indicator to assess in how much tax system could collect actual revenue from their potential revenue.[160] Empirical studies using tax effort approach have resulted in similar stories. Many countries under low and middle income groups also have low tax effort.[161] So, actual tax revenue in these groups is not in optimal number and they still have more room to boost their effort in order to achieve full taxable capacity.[162]

Table 3.1 – Tax Revenue to GDP Ratio, 1994 – 2009

Income Groups	1994	1998	2003	2009
High Income	21.2	28.4	28.4	29.3
Middle Income	18.8	17.1	19.0	19.3
Low Income	11.3	10.0	10.5	13.6

Note: The samples for low income, middle income, and high income countries are: 21, 74, 41 countries.
Source: Tuan Minh Le, Blanca Moreno-Dodson and Nihal Bayraktar, "Tax Capacity and Tax Effort: Extended Cross-Country Analysis from 1994 to 2009", *World Bank Policy Research Working Paper* No. 6252, (2012): 5.

In the end, evaluation either using tax ratio or tax effort centralized in a fact that taxation in developing countries are underperformed. This could not be separated from situation in developing countries, namely: informality, poor governance, weak revenue administration, and low tax morale. Informality, or shadow economy, is a serious problem in developing countries, accounting for approximately 35 – 40 percent of GDP.[163] The dominance of traditional sector (such as agriculture sector)[164] and high numbers of micro and small enterprises in economic composition, as well as cash transaction habitude by business sector[165] are origin of shadow economy. Many of economic activities are unrecorded and therefore create difficulties in tax collection (especially for individual income tax).

Another problem is poor governance and high corruption. Good governance and institution is one of the important factors in persuade taxpayer compliance.[166] On the other hand, corruption –as one component of governance- is very often considered as 'informal taxation', mainly through bribery for

[159] Tax buoyancy is indicator to measure the responsiveness of tax revenue growth in response economic growth. See Vincent Belinga, et al., "Tax Buoyancy in OECD Countries," *IMF Working Paper*, WP/14/10 (2014).

[160] If let say, tax effort < 1, then the actual tax revenue still not optimal and under their potential revenue. See Janet G. Stotsky and Asegedech WoldeMariam,"Tax Effort in Sub-Saharan Africa," *IMF Working Paper* WP/97/107 (1997).

[161] Tuan Minh Le, Blanca Moreno-Dodson, and Jeep Rojchaichaninthorn, "Expanding Taxable Capcity and Reaching Revenue Potential: Cross-Country Analysis," *World Bank Policy Research Working Paper* 4559 (2008): 15; or Ricardo Fenochietto and Carola Pessino, "Understanding Countries' Tax Effort," *IMF Working Paper* WP/13/244 (2013): 16.

[162] Tuan Minh Le, Blanca Moreno-Dodson and Nihal Bayraktar, "Tax Capacity and Tax Effort: Extended Cross-Country Analysis from 1994 to 2009," *World Bank Policy Research Working Paper* No. 6252, (2012): 27.

[163] Estimated with multiple indicators-multiple causes (MIMIC) method. See Friedrich Schneider, Andreas Buehn, and Claudio E. Montenegro, "New Estimates for the Shadow Economies all over the World," *International Economic Journal*, Vol. 24, No. 4 (2010): 443-461.

[164] Ricardo Fenochietto and Carola Pessino, "Understanding Countries' Tax Effort," *IMF Working Paper*, WP/13/244 (2013): 4.

[165] Roger Gordon and We Li, "Tax Structure in Developing Countries: Many Puzzles and a Possible Explanation," *Journal of Public Economics*, Vol. 93, Issue 7-8 (2009): 864.

[166] Richard M. Bird, Jorge Martinez-Vazquez, Benno Torgler, "Tax Effort in Developing Countries and High Income Countries: The Impact of Corruption, Voice and Accountability," *Economic Analysis & Policy*, Vol. 38, No 1, (2008): 68.

tax collectors. Corruption will reduce the level of formal taxation, as trust in tax system eroded and tax cheating becomes common practice. High intense corruption will also discourage tax collector to enrol in training to upgrade their quality.[167] Reduction in corruption, therefore, is expected can improve tax revenue in developing countries.[168]

Thirdly, administration of taxation in developing countries is commonly weak based on several factors, namely: complex rules, limited capability of tax authority, and minimum access of data.[169] Lack of qualified staff, which is related to the low-medium quality of education, was mainly caused by the design of tax authority's organization. Unattractive salary compare to private sector, bureaucratic mind-set, internal collusion, and non-performance based remuneration have made tax authority in developing countries could not retain qualified staff.[170] Further, ineffective and inefficient tax administration mainly caused by bad infrastructure, for instance: low intense of IT system that potentially upsurge average time of meeting with tax officer and compliance cost. That is why the success of tax reform in developing countries is highly depending on how to improve their tax administration.[171]

Last but not least, there is a major problem of willingness to comply with tax rules. From psychological perspective, compliance will much influenced by tax morale –intrinsic motivation to pay taxes or morality in view tax compliance.[172] Variation of tax morale, among driven by social culture and belief, will be higher if there is an egalitarian fiscal contract (exchange) between society (taxpayers) and state (governments).[173] With the poor availability of public goods, rampant corruption problem, and low services to the public, it is not surprising if tax morale in developing countries is normally low. As a result, tax evasions are very common.

3.2.2. Tax Revenue Structure

Since shadow economy is a huge problem for taxation in developing countries, it is obvious that they must concentrate on this issue. However, effort to formalize the shadow economy and increase tax compliance from hard to tax sector are time consuming and impossible to solve in short-term period. In this connection, it seems desirable for developing countries to set up more focus to realistic tax structure, so that source of revenue can sustain. But, what are the choices?

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167 Roy Bahl and Richard M. Bird, "Tax Policy in Developing Countries: Looking Back – and Forward," *National Tax Journal*, Vol. LXI, No.2, (2008): 291.

168 Abhijit Sen Gupta, "Determinants of Tax Revenue Efforts in Developing Countries," *IMF Working Paper*, WP/07/184 (2007): 31.

169 Vito Tanzi and Howell H. Zee, "Tax Policy for Emerging Markets: Developing Countries," *National Tax Journal*, Vol. LIII, No.2 (2000): 299.

170 Roy Bahl and Richard M. Bird, "Tax Policy in Developing Countries: Looking Back – and Forward," *National Tax Journal* Vol. LXI, No.2 (2008): 292.

171 See Javad Khalilzadeh-Shirazi and Anwar Shah, "Tax Reform in Developing Countries," *Finance and Development* (June, 1991): 44-46.

172 Benno Torgler dan Christoph A. Schaltegger, "Tax Morale and Fiscal Policy," *CREMA Working Paper Series*, No. 2005-30 (November, 2005): 2.

173 Lars P. Feld dan Bruno S. Frey, "Trust Breeds Trust: How Taxpayers are Treated," *Economics of Governance*, Vol. 3 (2002): 87-99.

According to Aizenman and Jinjarak, gradually, globalisation[174] and financial integration during 1980s and 1990s have changed tax structure in developing countries. It moves from "easily to collect taxes", such as international trade tax, toward "hard to collect taxes", such as income tax and goods and service tax.[175] Therefore, although proportion of international trade tax in developing countries is still higher than developed[176], it has been decreasing overtime.[177] Other type of tax, namely property income tax, cannot be expected anymore since it usually delegated to subnational level.[178] Even so, revenue from property tax in developing countries is still considerably not optimal. This mainly caused by weak private property rights, issue of land reform and redistribution of land as one of production factors.

Goods and service tax (GST) have become major potential source of revenue in not only developing countries, but also developed countries. Table 3.2 demonstrate that goods and service tax have contributed at least 30 percent of tax revenue in all economic groups. This type of tax is not very hard to administrate, because it transfer the burden of collection to taxpayers, i.e. producers, seller, and distributor. That is why, countries that put greater emphasize to VAT or sales tax, are also countries with poor tax performance.[179] But, as many countries have switched their system into VAT[180], it requires more sophisticated tax administration system.

In general, characteristics of taxation in developing countries have made reliance on any income tax is hard to apply.[181] If we compare composition of tax revenue from income tax between developed and developing countries, we will see inverse trend; while developed countries more dependent to personal income tax and developing countries to corporation.[182] For instance, in OECD, although corporate income tax revenue to GDP ratio has remained broadly stable since 1965, but their proportion to total revenue has declined at the same period.[183] Difference in wage level, quality of tax administration and income distribution between developed and developing countries are contributing

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174 This is the impact of globalisation in very basic way. I will extend the analysis on its impact, particularly to corporate income tax, on next section.

175 See Joshua Aizenman and Yothin Jinjarak, "Globalization and Developing Countries - A Shrinking Tax Base?" *NBER Working Paper*, No. 11933 (2006).

176 Please note that foreign trade sector has been traditionally easier to tax because of low cost of monitoring, assessing or collecting taxes. See Saeid Mahdavi, "The Level and Composition of Tax Revenue in Developing Countries: Evidence from Unbalanced Panel Data," *International Review of Economics and Finance*, Vol. 17, Issue 4 (2008): 610.

177 Carlo Cottarelli, "Revenue Mobilization in Developing Countries, *IMF Staff Paper* (8 March 2011): 28. Available online at: http://www.imf.org/external/pp/longres.aspx?id=4537.

178 Mainly based on the argument of benefit principle and land, in nature, is immobile. See Jorge Martinez-Vasquez and Mark Rider, "The Assignment of the Property Tax: Should Developing Countries Follow the Conventional Wisdom?" *Andrew Young School of Policy Studies International Studies Program Working Paper*, 08-21 (2008): 11-12.

179 Abhijit Sen Gupta, "Determinants of Tax Revenue Efforts in Developing Countries," *IMF Working Paper*, WP/07/184 (2007): 31.

180 Up to 2014, approximately only 50 countries which do not have VAT system.

181 Richard M. Bird, "The Administrative Dimension of Tax Reform in Developing Countries" in *Tax Reform in Developing Countries,* ed. Malcolm Gillis. (Durham: Duke University Press, 1989), 315-346.

182 Roger Gordon and We Li, "Tax Structure in Developing Countries: Many Puzzles and a Possible Explanation," *Journal of Public Economics*, Vol. 93, Issue 7-8 (2009): 857.

183 Michael P. Devereux, et al., "Corporate Income Tax Reforms and International Tax Competition," *Economic Policy*, Vol. 17, No. 35 (2002): 470-473.

factors to the difference composition between those groups.[184] Notably, with regards to many activities still unrecorded and excluded from the formal sector, personal income tax is really hard to collect in developing countries. In the end, rational choice that is left for developing countries are to improve their tax administration in order to chase potential revenue from individual income tax, but in the meantime, inevitably, they have to put focus on taxes for corporation.[185] The argument is simple: most of the firms are operates in formal business system.

Table 3.2 – Composition of Tax Revenue in Various Groups of Economies (%), 2009

Country Groups	Corporate Income Tax	Personal Income Tax	Goods & Service Tax	International Trade Tax	Others
Developed Countries	11	39	35	< 1	15
Developing Countries	21	12	49	6	12
Africa	30	20	33	10	7
Asia	20	14	46	6	14
Latin America and the Caribbean	21	4	63	4	7
Transition Economies	20	16	31	27	5
Global	12	34	37	2	14

Note: not include social contribution and other source of non-tax revenue
Source: UNCTAD, "FDI, Tax and Development – The Role of Multinational Enterprises: Towards Guidelines for Coherent International Tax and Investment Policies" *UNCTAD Investment and Enterprise Division Working Paper* (26 March 2015): 10, as calculated from ICTD Government Revenue Dataset.

Therefore, unsurprisingly, around 47 percent of government revenue in developing countries was contributed by firms.[186] Most of the contributions paid through taxation and other revenues, such as royalty in mining sector. However, taxing private sector has never been that easy. Globalisation is likely to make it more difficult.[187]

3.3. Globalisation, Multinational Enterprise and Corporate Tax Policies in Developing Countries

Has globalisation gone too far? Yes, for taxation in developing countries. Besides of its impact on tax structure, the liberalisation of financial market has also pushed developing countries to attract more capital in their jurisdiction (portfolio investment and foreign direct investment). In era of globalisation, competition for inducing foreign direct investment is increasingly intense because firms are becoming footloose, adopting global strategies and investing in whichever country they find favourable. Therefore, it is not easy at all for developing countries to induce foreign investment as

184 Vito Tanzi and Howell H. Zee, "Tax Policy for Emerging Markets: Developing Countries," *National Tax Journal*, Vol. LIII, No.2 (2000): 307.
185 Although goods and service tax is considerably important, but it is not the scope of this thesis.
186 UNCTAD, "FDI, Tax and Development – The Role of Multinational Enterprises: Towards Guidelines for Coherent International Tax and Investment Policies," *UNCTAD Investment and Enterprise Division Working Paper* (26 March 2015): 10.
187 Lorraine Eden, "Taxes, Transfer Pricing, and the Multinational Enterprise," in *The Oxford Handbook of International Business*, ed. Alan M. Rugman (New York: Oxford University Press, 2009), 615.

important source of technology and capital formation unless it is offered at least with comparable conditions as other competing countries offer. It should also be kept in mind that in the globalising world who owns the company may be no longer as important as it used to be. What is really important is in which country the company is located.

From perspectives of government in developing countries, policy to reduce corporate tax rates is not prevalent, since they have more dependencies on revenue from this sector. On the other hand, desires to have more job opportunities, transfer of technology, and also economic growth targeting have put them to bidding for inward foreign direct investment (FDI).[188] As a result, most of developing countries choose different pattern from developed ones, by offers tax incentives.[189] So, even that they cannot reduce corporate income tax rate in a very drastic numbers; they still have a chance to compete with other countries.

Tax incentives are commonly in the form of tax holiday, tax allowance, loss carry forward provisions, accelerated depreciation, and incentives to enter specific zones, sectors, or activities. It is often argued that tax incentives are not desirable because of its effectiveness to attract FDI. Tax, nonetheless, is only one of many considerations in business decision. Infrastructures, labour wages, political stability, corruption level, and business regulations are seem more important components for investors.[190] As a consequence, developing countries are routinely produces unnecessary tax expenditure.

Apart from debates on the effectiveness of tax incentives, developing countries enjoyed their position of capital importing countries, shown by higher portion of inward FDI to outward FDI. Why? For multinational enterprises, the decision to invest or operates in selected location will much rely on the (ownership, location, investment) OLI paradigm.[191] According to this paradigm, country with weak ownership advantage -such as in developing countries- will depends much on their location specific advantage.[192] If a country has both weak ownership and location advantages, then there is a tendency that country will only be importers (or firms in that country will only perform as importers from firms in country with ownership advantage). Further, since most of developing countries have location advantages, such as access to raw materials, low wage labour, or others, global business investors are willing to open their operational activities in these countries. [193] This is to confirm why inward FDI in

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188 FDI believed can boost economic growth and development trough capital accumulation and knowledge transfers. See Luiz R. de Mello, Jr., "Foreign Direct Investment in Developing Countries and Growth: A Selective Survey," *Journal of Development Studies*, Vol. 34, Issue 1 (1997): 1-34.

189 This is sometimes called as 'partial race to the bottom'. See S. M. Ali Abbas and Alexander Klemm, "A Partial Race to the Bottom: Corporate Tax Developments in Emerging and Developing Economies," *IMF Working Paper*, WP/12/28 (2012): 22.

190 Vito Tanzi and Howell H. Zee, "Tax Policy for Emerging Markets: Developing Countries," *National Tax Journal*, Vol. LIII, No.2 (2000): 315.

191 This paradigm is actually a collection of many theories on investment, multinationals, and business decision. See John Dunning, *Multinational Enterprises and the Global Economy* (Reading: Addison-Wesley, 1993)

192 The issue of location specific advantages is one of major issues for transfer pricing in developing countries. I will discuss this in part 3.4.

193 This is discussed in very detail by John Stopford and Susan Strange, *Rival States, Rival Firms: Competition for World Market Shares* (New York: Cambridge University Press, 1991).

developing countries has increased for the last three decades. Developing countries, such as China, India, or Indonesia are now seen as attractive place to doing business. Most of them are be part of connection to global business hub.

Nevertheless, multinational enterprises are likely to not to placing their parent or headquarter in developing countries, since them more vulnerable of any business risk. Developing countries are favourable location only for firms with foreign shareholders, popular as subsidiaries (foreign affiliates), where the ratio between foreign affiliates and parent corporations in this group is high. Number of foreign affiliates are 17 times higher than number of parent corporations, as shown by Table 3.3.

Table 3.3 – Developing Countries as Location for Multinational Enterprises' Subsidiaries, 2010

Country Groups	Parent Corporations Based in the Economy		Foreign Affiliates Located in the Economy		Ratio Foreign Affiliates to Parent Corporations
	Number	Percentage to World Parent Corporations	Number	Percentage to World Foreign Affiliates	
Advanced Economies	73,144	71%	373,612	42%	5.1
Developing Countries	30,209	29%	512,531	58%	17.0
Total	103,353	100%	886,143	100%	8.6

Note: data refers to the last available year (2007-2010)

Source: calculated from Annex Table 34, World Investment Report 2011. Available online at: http://unctad.org/Sections/dite_dir/docs/WIR11_web tab 34.xls

OLI paradigm, particularly location specific advantage, also can be linked into the types of multinational enterprises operates in developing countries. According to Caves, there are three categories of subsidiaries in developing countries.[194] First, exporters of natural resources and resource-based products that is to ensure the supply of raw materials for affiliation (or even third parties) in other countries.[195] Second, subsidiaries that are manufacturing goods or components for export. The idea is based on cost efficiency of products by choosing country with low labour cost and function as contract-manufacturing entity in the group. Finally, subsidiaries with domestic orientation. It happens in many emerging markets with highly populated countries. The subsidiaries could be perform as fully-fledge manufacturer firms or distributor.

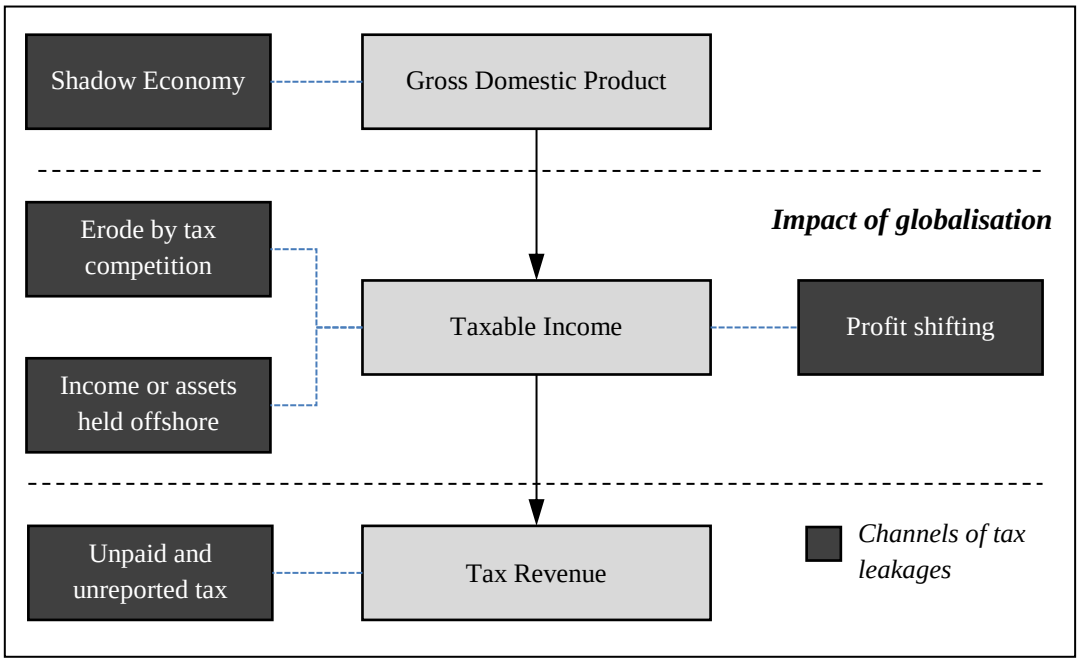
Existence of multinational enterprises means more revenue for the government in developing countries. As mentioned before, nearly 50 percent of government revenue arises from firms (private sector). Yet, if we divide the figure into both domestic and foreign firms (multinational enterprises operate in developing countries), 10 – 11% of government revenue in developing countries or

194 Richard E. Caves, *Multinational Enterprise and Economic Analysis*, 3rd Edition (New York: Cambridge University Press, 2007), 254.

195 Therefore, in many developing countries, corporate income tax from mineral sectors play important role. See Ehtisham Ahmad and Nicholas Stern, "Taxation for Developing Countries," in *Handbook of Development Economics*, Volume II, eds. H. Chenery and T.N. Srinivasan (1989), 1017.

approximately around US$ 725-730 billion, are contributed by multinational enterprises each year.[196] However, a substantial dependency on revenue from multinational enterprises is not immune from risk and challenges, since they have more sophisticated tax planning.[197]

Figure 3.1 – Impact of Globalisation and Framework of Tax Evasion and Avoidance in Developing Countries



Source: reconstructed from Alex Cobham, "Tax Evasion, Tax Avoidance, and Finance Development", *Queen Elizabeth House Working Paper* 129, (2005): 16

The idea that globalisation erodes tax revenue in developing countries is also supported by Cobham (2005). With regards to taxation in developing countries, globalisation generate potential tax gap via three leakage channels, namely: revenue lost to tax competition, income or assets held offshore, and profit shifting.[198] The first issue was already discussed before, meanwhile the second channel is likely occur in the context of high net-worth individual (HNWI).[199] How about the third? The proximate causes of low tax revenue in developing countries are by now well known. From literature review, they have little to do with profit shifting strategies and more to do with the size and structure of the economy, low tax morale, poor governance, globalisation, and complex tax ruling without an adequate capability of tax authority in place, all centralized in shadow economy and tax evasion. However, some facts might be relevant as indication of profit shifting.

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196 Estimation based on contribution method and FDI-income method. See UNCTAD, "FDI, Tax and Development – The Role of Multinational Enterprises: Towards Guidelines for Coherent International Tax and Investment Policies," *UNCTAD Investment and Enterprise Division Working Paper* (26 March 2015): 13-15.

197 Carlo Cottarelli, "Revenue Mobilization in Developing Countries, *IMF Staff Paper* 8 March 2011: 9. Available online at: http://www.imf.org/external/pp/longres.aspx?id=4537.

198 In closed economy, developing countries also facing two potential tax leakages which are: shadow economy and unpaid tax (evasion), as discussed by Alex Cobham, "Tax Evasion, Tax Avoidance, and Finance Development," *Queen Elizabeth House Working Paper* 129, (2005): 8 -11.

199 During 1970 up to 2010, accumulated assets in offshore which are not reported to tax authority, are worth around US$ 7.3 to 9.3 trillion. See James S. Henry, *The Price of Offshore Revisited* (Tax Justice Network, 2012), 7.

Firstly, inward FDI to these countries are commonly derives from capital exporting countries (developed economies). However, statistics of investment show interesting pictures, due to the fact that many of source of FDI to these countries were mainly comes from tax haven countries.[200] Countries such as: Mauritius, Hong Kong, British Virgin Island, Cayman Island, or even Singapore is commonly found as part of the big five source of investment in developing countries.[201] On Chapter 2, I have explained that the tax haven network will increase harmful of tax competition and incentivized profit shifting behaviour by multinational enterprises. Since there is negative association between amounts of shares from tax haven countries to rate of return of multinational enterprises[202], developing countries should aware of this.

Secondly, compared with trends in high income and tax haven countries, corporate tax rate in developing countries are more stable and change less over time (only 7 point of reduction during 1997 to 2014), as shown by Figure 3.2. This fact also supports the fact that developing countries are reluctant to reduce their corporate statutory tax rate but only offer generous tax incentives in global tax competition. However, unlike in the developed countries, developing countries failed to broaden their tax base, and thus there is decreasing contribution of corporate income tax.[203] If we linked the trend with the incentive of doing profit shifting strategies, developing countries are likely to have risk as the difference in tax rates is getting wide across group, especially with tax haven countries. Yet, developing countries is a group for heterogeneous set of countries that each country has different preferences in setting their corporate tax rate.[204] This can explain on why most of non-high income countries in Europe (Hungary, Romania, Serbia, and others) have relative low tax rates, while Asian developing countries have the opposite trend.

Thirdly, expansion of multinational enterprises has created conflict of taxing rights among countries (issue of double taxation), which has become focus of international tax stakeholders for decades. Bilateral tax treaty is believed to be able to eliminate double taxation and further remove any obstacles of cross-border economic activities by elimination of double taxation. For developing countries, the most important role of bilateral tax treaties are to give a signal to international economic agents and investors, that they have the same 'rule of the game' and willing to follow international

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200 IMF, "Spillovers in International Corporate Taxation," *IMF Policy Paper* May 9 (2014): 15-17.

201 At the same time, these tax haven also major destination of outward FDI from developed countries. In global economy, these countries play important role as investment hub.

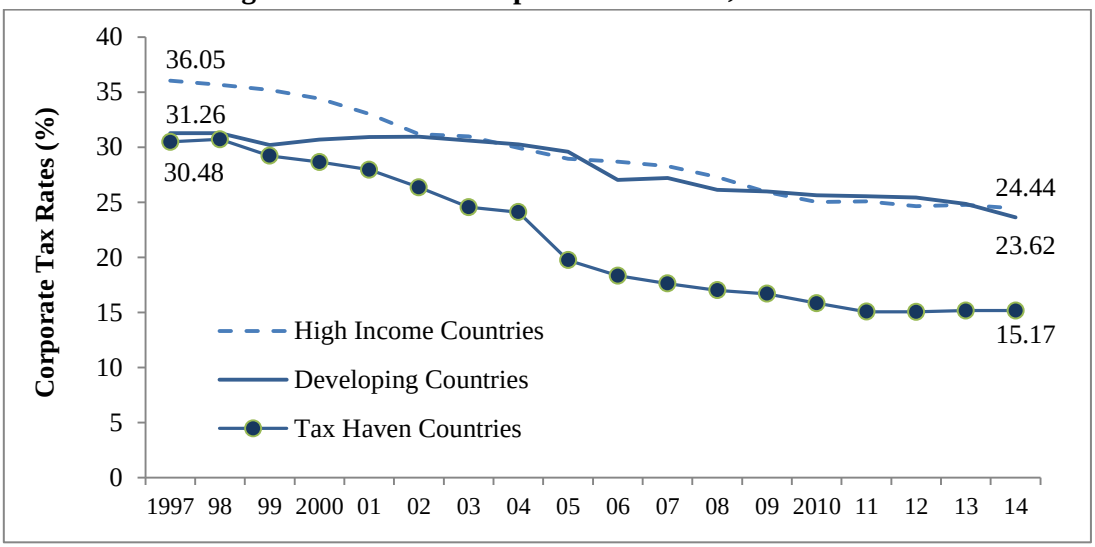
202 Ten percent additional share of additional stocks from tax haven will decrease reported profit ranging from one to 1.5 percent. See UNCTAD, "FDI, Tax and Development – The Role of Multinational Enterprises: Towards Guidelines for Coherent International Tax and Investment Policies," *UNCTAD Investment and Enterprise Division Working Paper* (26 March 2015): 34 – 35. However, UNCTAD refers to offshore investment hubs which consists both tax havens and jurisdictions offering or facilitating special purpose entities (SPE).

203 Michael Keen and Alejandro Simone, "Is Tax Competition Harming Developing Countries More than Developed?" *Tax Notes International* 34 (2004): 1318 – 1321.

204 Different in size (heterogeneity) game creates different pattern of behaviour. See Ravi Kanbur and Michael Keen, "Jeux Sans Frontières: Tax Competition and Tax Coordination When Countries Differ in Size," *The American Economic Review*, Vol. 83, No. 4 (1993): 890-891.

consensus in taxation.[205] Looking at the relation between industrialized and developing countries, we often observe an asymmetric investment position where industrialized countries being in the position of net capital exporters and developing countries typically being net capital importers. But, asymmetric tax treaties inevitably reduce the tax base of developing countries.[206] Network of tax treaty induces multinational enterprises to have another type of aggressive tax planning, namely treaty shopping.

Figure 3.2 – Global Corporate Tax Rates, 1997 - 2014



Notes: samples for high income countries (38), developing countries (89), and tax haven countries (26). However, number of samples for each period unstable, due to unavailability of data. Figures are calculated by simple average of highest statutory tax rate.
Source: KPMG Corporate Tax Rates Survey. Available online at: http://www.kpmg.com/global/en/services/tax/tax-tools-and-resources/pages/corporate-tax-rates-table.aspx.

To conclude, globalisation has opened more risk for corporate income taxation in developing countries, as well as tax revenue as a whole. Although the opportunities, incentives, and indications of profit shifting are occurring, yet, we do not know precisely the scale, schemes, and responses to combat such practices in developing countries. These will be exposed in the next section.

3.4. Profit Shifting in Developing Countries

International evidences on profit shifting strategies provide ample proof of the fact that corporate tax rate difference tend to be followed by aggressive tax planning, meanwhile anti-avoidance rule tend to lessen manipulation of transfer price, as well as changing capital structure into more a balanced one. Unlike advanced economies, study of profit shifting in developing countries is very limit in numbers.

[205] See Veronika Daurer, "Tax Treaties and Developing Countries," *Intertax*, Vol. 42, Issue 11 (2014): 695-701.

[206] Michael Lang and Jeffrey Owens, "The Role of Tax Treaties in Facilitating Development and Protecting the Tax Base," *WU International Taxation Research Paper Series*, No. 2014 – 03 (2014); or Julia Braun and Martin Zagler, "An Economic Perspective on Double Tax Treaties with(in) Developing Countries," *World Tax Journal*, Vol. 6, No. 3 (2014): 244.

According to OECD, study in profit shifting could be major role to assessing the impact of profit shifting and take hurried response to tackle these schemes.[207]

As developing countries are not immune from such practices; urgency to have reliable quantitative analysis exists. However, my first point is that we really do not know all that much about profit shifting problem in developing countries, especially how it is likely to evolve as both corporate tax policy and business schemes continues to change. Many of few studies merely focus on the scale of profit shifting and not the causes and effectiveness of the responses. In general, those studies have concluded that developing countries are suffering in huge amounts.

Furthermore, profit shifting as one of tax avoidance practice in developing countries often associated with illicit financial flow. This approach is mainly popular among the NGOs because it enables them to quantify all unreported and illegal money from one jurisdiction to another. One of the main disadvantages of this approach is that they put too much weight on tax evasion activities but seemed to disregard and not distinguish other illicit financial flow from tax avoidance scheme.[208] Neutrality of studies from NGOs perhaps should also be questioned since they have higher tendency to mainstream too much on this problem.[209] Today, there is a close relation between government and NGO in the issue of profit shifting, which opposed the morality of multinational enterprise. By naming and shamming, NGOs have strapped multinationals as 'public enemy' and putting reputational risk as one of the main in business decision making.[210]

Among several methodologies to quantify the effect of profit shifting in developing countries, transfer mispricing methodology is the most frequently used. Transfer (or trade) mispricing approach is empirical strategy which based on the idea that multinational enterprises have ability and control to manipulate prices of cross-border traded goods in order to shift income to their affiliation. The first empirical study performed this approach was came from Clausing (2003) when investigated US intra-firm trade by used data from International Price Program (IPP) of the Bureau of Labor Statistics (BLS). Clausing made regression analysis from monthly trade prices in 1997, 1998, and 1999 and found that there is indication that intra-firm trade prices are likely influenced by tax minimization strategies by multinational enterprises.[211] Trade mispricing application in the context of developing countries used by Baker (2005) through interviews with more than 500 business players and Christian

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207 See OECD, *Action Plan on Base Erosion and Profit Shifting* (Paris: OECD Publishing, 2013), 21-22.

208 For instance, see Dev Kar and Sarah Freitas, *Illicit Financial Flows from Developing Countries Over the Decade Ending 2009* (Global Financial Integrity, 2011).

209 Unsurprisingly, there were some conflicts or debates between NGO and multinational enterprise on result of the study, for instance, Lonmin vs. Alternative Information and Development Centre (AIDC) in South Africa regarding to indication of profit shifting to Bermuda Company during 2014.

210 Logic beyond applying shaming and naming is that this type of punishment will more effective as deterrence effect and can reduce 'non-compliance' behaviour while penalty and administrative sanction will not (or failed to identify such practice). See Joshua D. Blank, "What's Wrong with Shaming Corporate Tax Abuse," *Tax Law Review,* Vol. 62 (2009): 554.

211 Kimberly A. Clausing, "Tax-motivated Transfer Pricing and US Intrafirm Trade Prices," *Journal of Public Economics,* Vol. 87, Issue 9-10 (2003): 2221-2222.

Aid (2008) via similar approach called price filter matrix. Both studies found that developing countries loss their tax revenue approximately ranging from 160 – 200 billion each year.[212]

Although this approach is (relatively) simple to implement and public data is available, several drawbacks should be noted. These are originated from assumption beyond the approach, such as: price difference within product groups simplified as reflection of quality difference, any abnormal price shall be considered as over and under-pricing, as well as they did ignore the possibility of outward profit shifting as only focused on one-sided impact.[213] Moreover, this approach likely involves mispricing which arise in independent transactions.

Probably, unbiased and vibrant study on profit shifting in developing countries could be found in paper written by Fuest and Riedel (2010). Both academicians discuss the available source of information to understanding profit shifting in developing countries, and recommend the use of micro-data sources as it able to identify firms' activities and performance. They also tested ORBIS database and found that profit shifting from developing countries into tax haven was not a myth.[214] ORBIS database was also used by Jansky and Praats (2013) to calculate the effect of tax havens to the performance of multinational enterprises operating in India. They found that tax havens network would result in 1.5% less profit and have 11.4% higher debt ratios than multinational enterprises with no connection.[215]

Furthermore, tax rate has been proved as strong incentive to profit shifting, with regards to debt shifting channel, by German multinational enterprises. Using internal debt to total assets as dependent variable, Fuest, Hebous, and Riedel (2011) has found that changes in host country tax for affiliates in developing countries are two times more sensitive compared to if the affiliates are located in developed countries.[216] With these findings, it appears that developing countries are more vulnerable with possibilities of profit shifting by multinational enterprises, especially when tax rate difference and tax havens network take into account.

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212 Raymond Baker, *Capitalism's Achilles Heel: Dirty Money and How to Renew the Free Market System,* (Heboken: John Wiley & Sons, 2005) and Christian Aid, *Death and Taxes: The True Toll of Tax Dodging,* (2008) as quoted in Clemens Fuest and Nadine Riedel, "Tax Evasion and Tax Avoidance in Developing Countries: The Role of International Profit Shifting," *Oxford University Centre for Business Taxation,* WP 10/12 (2012): 6-8.

213 Clemens Fuest and Nadine Riedel, "Tax Evasion and Tax Avoidance in Developing Countries: The Role of International Profit Shifting," *Oxford University Centre for Business Taxation* WP 10/12 (2010): 8-9.

214 See Clemens Fuest and Nadine Riedel, "Tax Evasion and Tax Avoidance in Developing Countries: The Role of International Profit Shifting," *Oxford University Centre for Business Taxation Working Paper,* 10/12 (2010).

215 Petr Jansky and Alex Prats, "Multinational Corporations and the Profit-Shifting: Lure of Tax Havens," *Christian Aid Occasional Paper,* No. 9 (2013): 9.

216 Clemens Fuest, Shafik Hebous, and Nadine Riedel, "International Profit Shifting and Multinational Firms in Developing Countries," *IGC Working Paper* (January 2011): 15.

Table 3.4 – Transfer Pricing and Interest Limitation Rules in Developing Countries, 2013

Countries	Transfer Pricing Rule		Interest Limitation Rule	
	Availability	Documentation Requirement	Availability	Automatic Fixed Ratio
Albania*	√	√	√	√
Angola	√	√	X	
Argentina	√	√	√	√
Bangladesh	√	√	X	
Belarus	√	X	√	√
Benin	X		X	
Bolivia	X		X	
Bostwana*	X		X	
Bosnia & Herzegovina	√	X	X	
Brazil	√	√	√	√
Bulgaria	√	√	√	√
Burkina Faso	√	√	X	
Cameroon	√	√	X	
Cape Verde	X		X	
Central African Republic	√	X	X	
Chad	√	X	X	
China	√	√	√	√
Colombia	√	√	√	√
Congo	√	X	X	
Democratic Republic of Congo	X		X	
Dominican Republic	√	√	√	√
Ecuador	√	√	√	√
Egypt	√	√	√	√
El Salvador	√	√	X	
Gabon	√	√	X	
Georgia*	√	X	X	
Ghana	√	√	√	X
Guatemala	√	√	√	√
Guinea	√	√	X	
Guyana	X		X	
Honduras	√	√	X	
Hungary	√	√	√	√
India	√	√	X	
Indonesia	√	√	X	
Iran	X		X	
Jamaica	X		X	
Kazakhstan	√	√	√	√
Kenya	√	√	X	
Kyrgyzstan	X		X	
Macedonia (Fyrom)	X		X	
Madagascar	X		X	
Malaysia	√	√	√	√
Mali	X		X	
Mexico	√	√	√	√
Montenegro	√	X	X	
Mozambique	√	X	√	√
Namibia*	√	√	√	√
Nepal	X		X	
Nigeria	√	√	X	
Nikaragua	X		X	
Pakistan	√	X	√	√
Papua New Guinea	X		√	√
Paraguay	X		X	

Table 3.4 – Transfer Pricing and Interest Limitation Rules in Developing Countries, 2013 (continued)

Countries	Transfer Pricing Rule		Interest Limitation Rule	
	Availability	Documentation Requirement	Availability	Automatic Fixed Ratio
Peru	√	√	√	√
Philippines	√	√	X	
Republic of Moldova	X		X	
Romania	√	√	√	√
Serbia	√	√	√	√
South Africa	√	√	√	√
Sri Lanka	√	√	√	√
Sudan	X		X	
Thailand	√	√	X	
Tunisia	X		X	
Turkey	√	√	√	√
Uganda	√	√	X	
Ukraine	√	√	X	
United Republic of Tanzania	X		X	
Venezuela	√	√	√	√
Vietnam	√	√	X	
Zambia	√	√	√	√

Notes: *) data for 2014. √ if such rule is available and X if it is not.

Sources: IBFD Corporate Income Tax Survey and various reports from KPMG, Deloitte, PwC and EY.

The story continues. Governments gradually recognized that the tax planning schemes by multinational enterprises had gone too far. In order to tackle tax avoidance from transfer price manipulation and excessive interest payment, many developing countries have taken numbers of precautionary action that are similar with actions taken by developed countries. Many of them are now having at least transfer pricing and interest limitation rule on their domestic tax law. From survey in 70 developing countries, around 50 countries (71%) have transfer pricing rule, whereas only 28 (40%) of them having interest limitation rule in 2013 (see Table 3.4). The massive numbers of countries which have transfer pricing rule than interest limitation rule may indicate that transfer price manipulation is likely more dominant than excessive debt shifting. Probably, this also influenced by many studies that have highlighted the significant problem of transfer price; which in next, echoes by major players in international tax landscape nowadays.

Furthermore, almost all countries with interest limitation rule (27 from 28 countries) apply automatic ratio (mostly debt to equity ratio) in order to limit imbalance capital structure (thin capitalisation). It is not surprising, since rule such as debt to equity ratio is easier to implement and suits to tax administration system in these countries.[217] Fixed ratio is not free from criticism since that each industrial sector has different investment structure so that the ratio does not entirely reflect the market. Some countries such as: Brazil, Mexico, Tunisia, and Vietnam solve this problem with removed

[217] See Jennifer Blouin, et al., "Thin Capitalization Rules and Multinational Firm Capital Structure," *IMF Working Paper*, WP/14/12 (2014).

withholding tax for dividend repatriation and therefore made their tax system to be less affected by debt bias.[218]

On the other hand, many of governments in these countries (41 from 50 countries) equipped application of arm's length principle with obligation to have transfer pricing documentation (see Table 3.4). Nevertheless, international tax issue has been seen as complicated science for tax officers, especially when it requires detail and comprehensive analysis such as in the field of transfer pricing. Lacking of qualified staff limits them to introduce various mechanisms to resolve transfer pricing disputes, such as: advance pricing agreements (APA), mutual agreement procedures (MAP) and tax arbitration.[219]

The fact remains that many developing countries face too many problems in application of arm's length principle, predominantly when it relates to searching for comparables.[220] This will lead to increasing compliance cost for taxpayers and administrative cost for tax administration. Of course there is much argument about the advantages of the arm's length principle and how it mimics the works of open market more. Yet, the concept has conceptual shortcomings based on incompatibility between businesses of multinational enterprise with separate accounting approach.[221] Therefore, finding comparable transactions or firms -even in developed countries- are very challenging exercise, especially when related to intangible transaction. Since developing countries are lacking behind in research and development activities, most of transfer pricing studies in intangible use comparables from developed countries.[222] Administrative solutions, such as threshold for eligible taxpayers obliged to have transfer pricing documentation or safe harbour ratio, has been acknowledged by government in developing countries.[223] However, each approach has its own strengths and weaknesses; there is trade-off between certainty, compliance cost, and exact measurement for what is considerable as arm's length.

Current transfer pricing regime that settled by OECD also receives criticism from developing countries, since it does not take into account the location savings and location specific advantages. Location savings related to market that offers lower cost structure, while location specific advantages

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218 Leonard Wagenaar, "The Effect of the OECD Base Erosion and Profit Shifting Action Plan on Developing Countries," *Bulletin for International Taxation*, Vol. 69, No. 2 (2015): 87.

219 Ana Paula Daurado, "The Base Erosion and Profit Shifting (BEPS) Initiative under Analysis," *Intertax* Vol 43, Issue 1 (2015): 3.

220 UN, *United Nations Practical Manual on Transfer Pricing for Developing Countries,* (New York: UN, 2013), Paragraph 1.10.6.

221 The limitation of arm's length principle has been discussed by various scholars. For instance, see David L. P. Francescucci, "The Arm's Length Principle and Group Dynamics – Part 1: The Conceptual Shortcomings," *International Transfer Pricing Journal*, Vol. 11, No. 2 (2004): 55-75.

222 Tatiana Falcao, "Contributing a Developing Country's Perspective to International Taxation: United Nations Tender for Development of a Transfer Pricing Manual," *Intertax*, Vol. 38, Issue 10 (2010): 503.

223 See UN, *United Nations Practical Manual on Transfer Pricing for Developing Countries,* (New York: UN, 2013), especially on Chapter 10.

concerns with broader advantages of market either from supply or demand side (market size).[224] Developing countries, such as China and India argues that multinational enterprises that operate in their countries should have additional profit (remuneration) based on these factors as location rent.[225]

At the end, a question remains unanswered: leading channel of profit shifting strategies in developing world. As far as I know, up to now, no studies have provided empirical findings on this issue.

3.5. Conclusion

It seems obvious that developing countries need tax revenue for financing their development, especially with the more limited source of revenues from aid assistance and government debt. Furthermore, high informal economy and trade liberalization have pushed governments in developing country to switch their focus into hard to taxing sector, especially corporate income taxation. Nevertheless, too much reliance to corporate income taxation is also not true.

It is widely believed that the tax base in most developing countries has been severely eroded by legal tax avoidance (and illegal tax evasion) by multinational enterprise, brought about largely in poor tax administration.[226] Weakness of tax administration has added another layer to the many sided benefits of profit shifting. To put it in a nutshell, availability of anti-avoidance rules are very important for combating profit shifting, but they do not guarantee reduction of aggressive tax planning by multinational enterprises as long as tax administration is not improvised. Concerning the limited enforcement capacity and low capability to detect anti-avoidance scheme, there is a bigger threat of profit shifting behaviour, relative to the advanced economies.

Size, schemes, incentives, and response to profit shifting of course may vary from one country to another but overall principles imply that tax rate differences and applicability of anti-avoidance rules were two main factors that influence multinationals decision making to shifting profit. To close the existing information gaps on incentive and constraint to profit shifting possibilities in developing countries, studies need to be conducted in order to be able to formulate the right objectives and sub-goals and, accordingly, choose the right actions.

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224 Sebastian Gonnet, Pim Fris and Tomasso Coriano, "Location Specific Advantages – Principles," *Transfer Pricing International Journal*, No. 06/11 (2011): 5-6.

225 UN, *United Nations Practical Manual on Transfer Pricing for Developing Countries* (New York: UNDESA, 2013), 145-148.

226 James Alm, Roy Bahl and Matthew N. Murray, "Tax Base Erosion in Developing Countries," *Economic Development and Cultural Change*, Vol. 39, No. 4 (1991): 849.

Chapter 4
Research Methodology

4.1. Introduction

The purpose of this thesis is to analyse incentives and disincentives of profit shifting possibilities for multinational enterprises that operate in developing countries. However, since current international tax systems are in favour to uncoordinated behaviour of tax policies, I will also offer a critical analysis the available choices for developing countries to reduce profit shifting strategies. In order to answer such research questions, one has to bear in mind that this thesis did not aim to sizing loss (or benefit) either from debt shifting, transfer price manipulation, or aggregate profit shifting. Studies that calculated the scale of aggressive tax planning in developing countries were conducted more often. However, causes and how to respond seemed to be underrated.[227] Both the incentives and disincentives are really important for developing countries to rethink about how they should deal with such problems.

In this chapter I will discuss methodology to estimate incentive and disincentive of profit shifting possibilities. Before doing empirical study, I will explain analytical framework, data specification, period of analysis, statistical descriptive as well as the regression model. Moreover, since the research questions of this thesis are started from broad picture, scope of analysis and estimation strategies to answer such questions were may not be ruled out from explanation.

4.2. Scope of Analysis

Empirical analysis on corporate taxation interrelated to four layers of business decision making process. The decision tree consists as the following: choice to export or to produce abroad, decision to choose foreign location of production, scale of investment, and decision to allocate profit across member of multinational group.[228] The scope of analysis in this thesis will merely focus on the final stage of multinational enterprises' decision tree, profit allocation, which is related to profit shifting strategies.

With regards to decision for allocation of profit, the empirical findings will be much depends on unit (of observation) and scope of analysis use in this thesis. Many scholars have computed the impact of corporate tax policy on multinational enterprises' behaviour by using two categories of unit analysis,

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227 Deutsche Gesellschaft fur Internationale Zusammenarbeit (GIZ), *Addressing Tax Evasion and Tax Avoidance in Developing Countries* (Eschborn: GIZ, 2010), 36.

228 Michael P. Devereux, "The Impact of Taxation on the Location of Capital, Firms and Profit: A Survey of Empirical Evidence," *Oxford University Centre for Business Taxation Working Paper*, WP 07/02 (2007): 9-12, 52.

namely: micro and macro framework. Macro framework, such as foreign direct investment as well as tax revenue macro data provides important information on how corporate tax policy will change aggregate (size) effect of all individual firms in one specific country or jurisdiction. In simple words, macro framework examines country or jurisdiction as unit of analysis. Studies using aggregate data are mainly concern with the impact of tax to macroeconomic performance, particularly foreign direct investment. For instance, Slemrod analysed FDI inflow to USA and isolated impact of taxation from other macroeconomic incidences.[229] Moreover, other authors such as: De Mooij and Ederveen (2003) also use bilateral FDI flows data to quantify the impact of taxation between advanced countries.[230]

Meanwhile, micro data framework could provide on how each individual firms response to the corporate tax policy. Micro framework usually uses financial statement, tax return, or even disclosure of custom report as sources of data.[231] To capture the precise effect of multinational behaviour, micro data seems more promising since they do not deal with aggregate effect and disregard how country (as unit of analysis) will response to any changes in global corporate taxation. Furthermore, micro framework analysis enables us to gather detail information about how economic profile (characteristics) of each individual firms and how this connected with activity or income (performance), which is neglected in the macro framework. However, although micro framework offers more detail results, most of suitable data are not easily accessible by public, i.e. tax return data. Published accounting data also could not be observed directly since most of these data are heterogeneous in nature.[232] Nevertheless, concerning advantages and disadvantages of each framework, my perspective will be standing on the micro-level unit of analysis.[233]

The next question will be the characteristics of observation in this thesis. **Firstly**, unit of analysis will be on individual firms and not on group (multinational enterprise). In spite of the fact that analysis on group unit is also feasible, I will concentrate on allocation of profit 'within the group'; therefore individual firm will be more relevant. The firms should be members of multinational enterprise, which are not independent and potentially have internal transactions with their affiliations. As concerned with definition of multinational enterprise as mentioned on Chapter 2, firms should have direct participation (shares) from foreign shareholder to ensure involvement of at least two countries. Furthermore, firms must also have different legal entity from their parent (owners) and considered as

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229 His main contribution was to introduce the use of forward-looking marginal tax rate. See Joel Slemrod, "The Impact of the Tax Reform Act of 1986 on Foreign Direct Investment to and from the United States," *NBER Working Paper,* No. 3234, (2010).

230 See Ruud A. de Mooij and Sjef Ederveen, "Corporate Tax Elasticities: A Reader's Guide to Empirical Findings," *Oxford Review on Economic Policy,* Vol. 24, No.4 (2003): 680-697.

231 BEPS Monitoring Group, "Comments," *Comments Received on Public Discussion Draft BEPS Action 11: Establish Methodologies to Collect and Analyze Data on BEPS and the Actions to Address It* (OECD, 7 October 2014), 109-112.

232 Reinald Koch and Andreas Oestricher, "Comments," *Comments Received on Public Discussion Draft BEPS Action 11: Establish Methodologies to Collect and Analyze Data on BEPS and the Actions to Address It* (OECD, 7 October 2014), 10.

233 This also supported by Pim Fris, Harlow Higinbotham, and Emmanuel Llinares, "Response by NERA Economic Consulting," *Comments Received on Public Discussion Draft BEPS Action 11: Establish Methodologies to Collect and Analyze Data on BEPS and the Actions to Address It* (OECD, 7 October 2014), 87. With regards to several empirical findings, they argued that any identification of profit shifting strategies should concentrate on micro level.

subsidiary and not classified as branch or permanent establishment. There are different financial and tax accounting treatment between those two.

Secondly, the samples should be subsidiaries that are located in developing country. Developing countries in this thesis refers to World Bank classification for countries which gross national income (GNI) per capita are under the US$ 12,745 or classified as non-high income countries (low income, lower-middle income, and upper-middle income countries).[234] Although some papers exclude upper-middle income countries when discussed about developing countries in the field of taxation,[235] insertion of all non-high income countries may relevant with my analysis. First, the stereotype of developing countries in the field of taxation might be different with their level of income, as World Bank already mentioned that this classification does not necessarily reflects development status.[236] In fact, many of upper-middle income countries have similar tax challenges with countries on their lower class. Second, the current international tax system is more or less influenced by the capital exporting economies. In this way, most of the upper-middle income countries, such as Brazil, Malaysia, or Hungary, should classify as developing countries since they also net capital importing countries. Third, in the context of global economy and value chain of multinational enterprises, these countries mostly accomplish as location of subsidiaries and not home country for multinational enterprises.[237] Lastly, it is also important to exclude any tax havens from group of developing countries. This is concerning characteristics of tax havens which creates harmful tax competition and stands on outlier position of international tax regime.[238]

Thirdly, with regards to allocation of profit, many empirical studies focus on parent-subsidiary relationship, where the starting points of analysis were based on parent status. This is can be found, for instance, in the study by Céline Azémar on US multinational enterprises or by Buettner and Wamser for German multinational enterprises.[239] Yet, I switch my starting point of analysis from the viewpoint of subsidiaries. Conditional factor for unit of analysis is subsidiary in developing countries, no matter where the parents are located (unconditional). Therefore, the impact of any exogenous evidences will be linked to behaviour of subsidiary and not the parent. This means that analysis will focus on impact of any corporate tax policies (either incentives or disincentives) to subsidiary firms in the sample.

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234 Each year on July 1, the World Bank revises analytical classification of the world's economies based on estimates of gross national income (GNI) per capita for the previous year. See the classification for 2015 fiscal year at: http://data.worldbank.org/about/country-and-lending-groups.

235 For example see IMF, OECD, UN, and the World Bank, *Supporting the Development of More Effective Tax System: A Report to the G-20 Development Working Group* (2011).

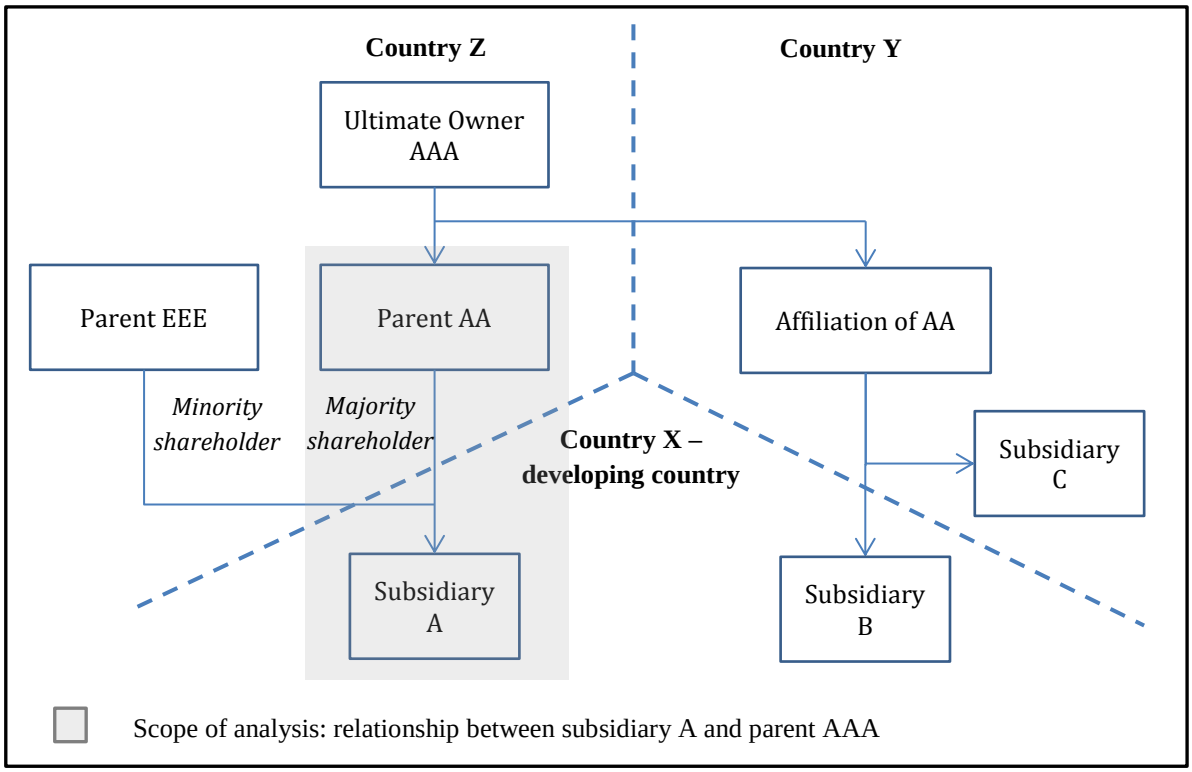
236 See http://data.worldbank.org/news/2015-country-classifications.

237 See Table 3.3.

238 As discussed on Chapter 2, tax havens could be considered as renegade states; and therefore separation between them is crucial, since there are several middle income countries which also classified as tax havens, such as: Liberia and Panama.

239 See Céline Azémar, "International Corporate Taxation and U.S. Multinationals' Behaviour: An Integrated Approach," The *Canadian Journal of Economics*, Vol. 43, No. 1 (2010): 232-253; and Thiess Buettner and Georg Wamser, "Internal Debt and Multinational Profit Shifting: Empirical Evidence from Firm-Level Panel Data," *National Tax Journal*, Vol. 66, No. 1 (2013): 63–96.

Figure 4.1 – Scope of Analysis: Illustration



Fourthly, subsidiaries in my sample shall not have any shares on other firms (any subsidiaries). This is to ensure that my samples are firms at the lowest level of group's global chain. The idea is that subsidiaries in developing countries are commonly powerless because of strict controls from their parent in other country. Subsequently, any business decision making process which related to the subsidiary will distort by any control on participation and management of the parent. Above point will also relate to scope of analysis, which is limited to subsidiary-parent in pair relationship, as illustrated in Figure 4.1. Although it is true that the profit shifting channel could also arise through their affiliations (other firms also owned by parent), this analysis will be more complex and requiring all information of affiliated firms. **Finally**, the scope of analysis will not involve any comparison of response between subsidiaries in developing countries with other group, for instance comparison with domestic firms.[240]

As a conclusion, in order to discover the relationship between incentives and disincentives to profit shifting, subsidiaries with foreign ownership that operates in developing countries will be the unit of analysis of this thesis. Moreover, scope of analysis will be limited into allocation of profit between

[240] For instance, Egger, Eggert, Keuschnigg, and Winner make a comparison between debt-asset ratio from multinational enterprises and domestic firms, see Peter Egger, Wolfgang Eggert, Christian Keuschnigg, and Hannes Winner, "Corporate Taxation, Debt Financing and Foreign-plant Ownership," *European Economic Review*, Vol. 54, Issue 1 (2010): 96–107. Another inter-group comparison also exercised by Jansky and Prats on comparison between multinational enterprise with and without connection to tax haven countries, see Petr Jansky and Alex Prats, "Multinational Corporations and the Profit-Shifting: Lure of Tax Havens," *Christian Aid Occasional Paper*, No. 9 (2013).

single subsidiary-parent relationships (with majority shareholders) and ignore all connection either with ultimate owner or affiliated enterprise.

4.3. Analytical Framework

4.3.1. Basic Model[241]

Imagine that multinational enterprise X only consist of two firms in different country: parent *p* and its subsidiary *i*. Each country have different statutory tax rate τ_p and τ_i and assume that tax rate in parent country is lower than the subsidiary $(\tau_p < \tau_i)$. This setting could be making sense if tax haven is where the parent is located, while its foreign affiliate operates in developing country. Both firms have exogenous pre-tax profit (true profit) that will be declared as reported profit in the absence of any profit shifting, denoted by π_p and π_i.

From Chapter 2, I already explained that there are two channels to shifting profit, which is sensitive with corporate tax rates. Multinational enterprise X tends to allocate (higher) profit to their parent, since it has lower corporate tax rate. Fraction of profit from subsidiary, *s*, could be transferred to its parent either via debt shifting or transfer price manipulation or both. The profit shifting strategies, thus, will enlarge the global profit of multinational enterprise X, π.

$$\pi = (1 - \tau_p)(\pi_p + s) + (1 - \tau_i)(\pi_i - s); \text{ Where } \pi_i - s \geq 0 \quad (1)$$

The above equation can also be interpreted that amount of profit shifting will increase as difference between corporate tax rate in parent and subsidiary become larger. Amount of *s*, will drive the overall tax burden of X. After profit shifting strategies, the reported profit for subsidiary in country *i* is now has $\dot{\pi_\iota}$.

Suppose that government in country *i*, suspect that not only X apply aggressive tax planning and exploit profit shifting strategies. Country *i* then launch anti-avoidance rule. From the perspective of multinational enterprise X, this disincentive will heighten cost of profit shifting, *c(s)*. In the absence of anti-avoidance rule, X already face cost of profit shifting which derives from cost of tax and accounting service and other cost relates to establish profit shifting channel. After anti-avoidance rule take place, there are some additional cost: penalty, reclassification of transaction, and reputational cost. All of those cost are proportionate to the amount of *s*, in convex function where $c'(s) > 0$ and $c''(s) > 0$.

However, *c(s)* will be highly depending on tax environment in *i*, particularly on level of anti-avoidance rule enforcement by tax authority, γ_i. Unfortunately, *i* as developing country has weak tax

[241] As modified from Clemens Fuest, Shafik Hebous, and Nadine Riedel, "International Profit Shifting and Multinational Firms in Developing Countries," *IGC Working Paper* (January 2011): 4-6.

administration.[242] Then to overall cost function of profit shifting is $C = \gamma_i . c(s)$ with assumption that country *p* do not care about profit shifting or any effort to avoid it. From equation (1), now the global profit of X is

$$\pi = \left(1 - \tau_p\right)\left(\dot{\pi_p}\right) + (1 - \tau_i)(\dot{\pi_\iota}) - \gamma_i . c(s) \quad (2)$$

In order to optimise their after-tax profit, parent firm in *p* will choose the amount *s* which satisfy first order condition of equation (2), as follows

$$\tau_i - \tau_p = \gamma_i c'(s) \quad (3)$$

Equation (3) shows that the marginal gains from profit shifting equal to marginal cost from profit shifting. The left hand-side is incentive for profit shifting, while the right hand-side express disincentive. Therefore, the amount of *s* should choose at the level that at least disincentive is not more than incentive. As concern with the fact that tax administration in developing country is weak, then γ_i is less than 1. Therefore, disincentive of profit shifting is never optimal. Consequently, government in country *i* should deal with more risk of profit shifting (in this case outward profit shifting), concerning their supportive environment.[243]

4.3.2. Empirical Model

The basic model, as previously explained, has successfully demonstrated how the optimal level of profit shifting by multinational enterprise should countervail incentive and disincentive. However, it is not sufficient and needs further empirical model. According to Hines (2014), empirical studies on profit allocation can be classified in twofold. First, studies that compare reported profit for different firms located in various countries with different tax rates. The objective of these studies is to measure response of pre-tax profit in low and high tax environment. Second, studies that explore specific activities to reduce tax burden such as: pricing of controlled transactions, location of intangible property, dividend repatriation and many more. [244] With regards to basic model on previous section, I will only focus on the first classification.

Pioneer studies on quantification of causality between corporate tax policy and pre-tax profit initiated by Grubert and Mutti (1991)[245] and Hines and Rice (1994)[246]. However, the last is widely cited in many empirical studies to scaling magnitude of profit shifting. The idea proposed by Hines and Rice

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242 The argument is highly relevant in the case of transfer pricing rule. See Céline Azémar, "International Corporate Taxation and U.S. Multinationals' Behaviour: An Integrated Approach," *The Canadian Journal of Economics*, Vol. 43, No. 1 (2010): 237 – 238.

243 Differentiating equation (3): $\frac{ds}{d(\tau_i - \tau_p)} = \frac{1}{\gamma_i c''(s)}$ also show that incentive for profit shifting (tax rate difference) will greater than the disincentive for profit shifting, concerning the low capability of tax authority in *i* (developing country).

244 James R. Hines Jr., "How Serious Is the Problem of Base Erosion and Profit Shifting?" *Canadian Tax Journal*, Vol. 62, No. 2 (2014): 449.

245 Harry Grubert and John Mutti, "Taxes, Tariffs and Transfer Pricing in Multinational Corporate Decision Making," *The Review of Economics and Statistics*, Vol. 73, No. 2 (1991): 285-293.

246 James R. Hines, Jr. and Eric M. Rice, "Fiscal Paradise: Foreign Tax Havens and American Business," *The Quarterly Journal of Economics*, Vol. 109, No. 1 (1994): 149-182.

(HR) assumes that pre-tax profitability of affiliation (member of multinational group) consist of true profit and shifted income[247], $\pi_i^r = \pi_i + S_i$. Amount of shifted income is driven by the level of incentive, which is corporate tax difference between affiliate and their parent, $S_i = \pi_i \gamma(\tau_i - \tau_p)$. Therefore, the equation to measure profit shifting is:

$$\pi_i^r = \pi_i + \pi_i \gamma(\tau_i - \tau_p) = \pi_i \left(1 + \gamma(\tau_i - \tau_p)\right) \quad (4)$$

Taking logs, equation (4) is approximated by:

$$\log \pi_i^r = \log \pi_i + \gamma(\tau_i - \tau_p) \quad (5)$$

The problem to measure true profit is solved with the involvement of production function specification on their mathematical model. With Cobb-Douglas function $Q = cA_i^{\varepsilon} L_i^{\alpha} K_i^{\varphi} e^{u_i}$, where *c* is constant, *A* is the level of productivity, *L* is labour input, and *K* is capital input; they tried to estimate the size of true profit as they assumed that profits are return of investment (capital). They used cross-section data for 1982 from Bureau of Economic Analysis (BEA) with the following empirical model:

$$\log \pi_i^r = \beta_0 + \beta_1(\tau_i - \tau_p) + \beta_2 \log K_i + \beta_3 \log L_i + \beta_4 \log A_i + u_i \quad (6)$$

π_i^r represents affiliate's profit with specification on natural logarithm of firm's reported pre-tax profit as a linear function of tax rate differential.[248] Level of productivity, *A*, a proxy represented by GDP per capita; *L* specified by cost of employees; while *K* specified by fixed asset. Variable τ represent level of tax incentive for profit shifting strategy, measured by tax rate differential between parent and affiliate. Moreover, parameter $\beta_1$will represent marginal effect on how reported profit response to the change of tax incentive, ceteris paribus.

In 2008, Huizinga and Laeven (HL) adopt this approach in more complex setting. Tax factor, on their model, was not merely depends on tax rate difference but a composite index of any opportunity and incentive to have profit shifting.[249] Moreover, since they use multi-country perspective in European countries, they also counted tax rate differentials for all affiliations and not only parent.

Further, new approach to measure such issue was proposed by Dharmapala and Riedel (2013). They investigated exogenous earnings shocks at parent firm and how these earnings distributed between

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247 See James R. Hines, Jr. and Eric M. Rice, "Fiscal Paradise: Foreign Tax Havens and American Business," *The Quarterly Journal of Economics*, Vol. 109, No. 1 (1994): 149-182.

248 Dhammika Dharmapala, "What Do We Know About Base Erosion and Profit Shifting? A Review of the Empirical Literature," *Coase-Sandor Institute for Law & Economics Working Paper*, No. 702 (2014): 3.

249 Variable $= \frac{1}{(1-\tau_i)} \frac{\sum_{k \neq i}^{n} \left(\frac{B_k}{1-\tau_k}\right)(\tau_i - \tau_k)}{\sum_{k=1}^{n} \left(\frac{B_k}{1-\tau_k}\right)}$, involved the scale of firm's operation within the group, measured by shares of sales. See Harry P. Huizinga and Luc Laeven, "International Profit Shifting within Multinationals: A Multi-country Perspective," *Journal of Public Economics*, Vol. 92, Issues 5-6 (2008): 1168-1169.

affiliations in different location (high and low tax environment).[250] However, since that HL approach is more relevant with theoretical and analytical framework of this thesis, Dharmapala and Riedel's approach will beyond scope of analysis.

4.4. Source of Data

As mentioned before, I will focus on micro level framework particularly on individual firm data. Analytical framework on profit shifting, explained either by HR or HL approach also stressed out the importance of profitability (financial accounts) of multinational enterprise. Therefore, the database for analysing profit shifting strategies should be the database contains information on profitability (and financial account) with uniform format.

Based on literature review, this information is published both by government institution and private sector. Today, there are at least three government institutions which routinely maintain data on activities and financial report of multinational enterprises, namely: Bureau of Economic Analysis (BEA) Operations of Multinational Companies Database in U.S., Deutsche Bundesbank Micro-database on Direct Investment (MIDI), and UK Office of National Statistics Annual Inquiry into Foreign Direct Investment (AFDI). Dozens of empirical studies have utilized these databases, for instance Buettner and Ruf (2007) has been used firm-level MIDI database to analyse location decision of German's multinational enterprises[251]; or Egger et al. who used the same data to analyse internal borrowing of multinationals.[252] Unfortunately, although these databases are great in detail, they cannot be accessed by public and only focused on information of multinational enterprises originated from their countries.

On the other hand, private institution such as Bureau van Dijk produces various databases about activities and financial performance of firms, for instance: ORBIS, ORIANA, AMADEUS, COMPUSTAT, and others.[253] These databases contain rich information on size, profit and loss account, activities, industry, balance of payment, performance indicator, legal status, or even information of ownership and their affiliations. Concerning to their advantages, these databases has been used in many empirical studies on profit shifting. Karkinsky and Riedel (2012) or Dischinger and Riedel (2008) used Amadeus database,[254] while ORBIS database used by Loretz and Moore

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250 See their methodology at Dhammika Dharmapala and Nadine Riedel, "Earnings Shocks and Tax-motivated Income-shifting: Evidence from European Multinationals," *Journal of Public Economics*, Vol. 97, No. 1 (2013): 97-98.

251 Thiess Buettner and Martin Ruf, "Tax Incentives and the Location of FDI: Evidence from a Panel of German Multinationals," *International Tax and Public Finance*, Vol. 14, Issue 2 (2007): 151-164.

252 Peter Egger, Christian Keuschnigg, Valeria Merlo, and Georg Wamser, "Corporate Taxes and Internal Borrowing within Multinational Firms," *NBER Working Paper*, No 18415 (2012).

253 Database published by Bureau van Dijk can be distinguished according to territory (region) and types of firms. For instance, OSIRIS only contains information for public firms in Asia Pacific region. See http://www.bvdinfo.com/en-gb/home for further information.

254 Tom Karkinsky, and Nadine Riedel, "Corporate Taxation and The Choice of Patent Location within Multinational Firms," *Journal of International Economics*, Vol. 88, Issue 1 (2012): 176-185; or Matthias Dischinger and Nadine

(2013).[255] In this thesis, I choose ORBIS as my main source of data. With regards to its coverage, ORBIS could considered as the most complete database released by Bureau van Dijk as it provide information for more than 140 million worldwide firms.

ORBIS, as well as many products from Bureau van Dijk have several technical drawbacks. First, the maximum periods of available information is only for ten years. Therefore, this database is not suitable for long-term analysis and could not capture impact of tax policy changes to firms' performance (assume that tax policy is rarely to change in short-term period). Second, since ORBIS only provides information of ownership status on last available year, therefore, any changes in ownership beforehand cannot be captured. Possibility of misclassification between parent and subsidiary could occur especially in the case of econometric study with panel (longitudinal) data.[256] However, I ignore these weaknesses since any business restructuring or merger and acquisition activities are assumed likely not frequent; and going into detail misclassification will introduce noise to empirical estimation. The same reason also argued by Budd et al. (2005).[257]

In order to find accurate firms that are consistent with the unit and scope of analysis, I made filtering process in ORBIS database as showed on Table 4.1. The periods of analysis are 9 years, starting from 2005 to 2013.

Table 4.1 – Filtering Process with ORBIS database

	Filtering Stages	Result
1	Firms located in developing countries	28,250,666
2	Active firms	24,736,722
3	Non-independent firms	2,452,741
4	Foreign shareholder min. 50.01%	759,875
5	Firms do not have subsidiaries	717,466
6	Industrial firms (non-financial sector)	624,280
7	Types of shareholders (business types)	171,053
8	Availability of financial account (7 - 9 years)	28,679
	Total first screening	**28,679**

Note: data as available during 12 -13 March 2015

At the first stage of filtering process, firms should be located in developing countries. Based on World Bank classification of income level and Table 2.1 (list of tax haven countries), I include 111 countries on my search. Moreover, the firms should be active which means that they still actively operate and not in liquidation period, bankruptcy, or dissolve. Next, I focus to various filtering process regarding

Riedel, "Corporate Taxes and the Location of Intangible Assets within Multinational Firms," *Munich Discussion Papers in Economics*, 5294 (2008).

255 Simon Loretz and Padraig J. Moore, "Corporate Tax Competition between Firms," *International Tax and Public Finance,* Vol. 20, Issue 5 (2013): 725-752.

256 Matthias Dischinger, Bodo Knoll and Nadine Riedel, "The Role of Headquarters in Multinational Profit Shifting Strategies," *International Tax and Public Finance,* Vol. 21, Issue 2 (2014): 253.

257 John W. Budd, Jozef Konings and Matthew J. Slaught, "Wages and International Rent Sharing in Multinational Firms," *The Review of Economics and Statistics,* Vol. 87, No. 1 (2005): 73-84.

to the ownership and subsidiary-parent relationships. One of the advantages of ORBIS database is the availability of independence indicators which can filtrate whether a firm have ownership relationship with other firms or not (independent). I exclude all independent firms from my potential observations. The firms should also own by foreigner in majority (> 50.01%)[258] and do not have subsidiaries. These stages are to ensure that they are fully controlled by their parent (direct shareholder) and do not have any possibility to control other firms. I also control the shareholders' types to ensure that they are not public authorities or governments, individual or families, and employees/managers/directors on particular firm.

I also exclude all firms that are not industrial firms, namely: banks, hedge funds, foundation, insurance, public authorities, trustees, venture capital, and others. These types of firms or entities are likely having different treatment of taxation, different objective besides to maximize profit, or different financial accounting format. Finally, in order to eliminate samples with incomplete information, I also entail firms with availability of financial account at least for seven years. Through all the filtering process, I found 28,679 firms in 66 countries for my potential sample. However, this is not the final sample, concerning the possibility that not all firms have complete information for variables in regression analysis. I will discuss this later.

4.5. Estimation Strategy

4.5.1. Basic Regression Model and Variables

Profit shifting is a terribly complicated element that we cannot measure easily, whereas a lot of other firm's performance variables are easily measured. One of the options to scaling the magnitude of incentive and disincentive of profit shifting possibilities is by regression analysis with econometrical approach. The basic empirical framework that I use in this thesis was originally built by Hines and Rice (1994) and Huizinga and Laeven (2008). Furthermore, I made modification by adding element of anti-avoidance rules. Following the theoretical considerations on Chapter 2 and analytical framework in part 4.3., I estimate an empirical model as the following form:

$$\log(\pi_{it}^{r}) = C + \gamma_1(\tau_{it} - \tau_{pt}) + \gamma_2(AA_{it} \times e_{it}) + \beta_1 \log(k_{it}) + \beta_2 \log(l_{it}) + \beta_3 a_{it} + u_{it}$$

Where:

π_{it}^{r} = reported profit for firm in country *i* at time *t*

C = constant (use country fixed effect)

$(\tau_{it} - \tau_{pt})$ = tax rates difference between country *i* and country non-*i* at time *t*

$(AA_{it} \times e_{it})$ = effectiveness of anti-avoidance rule in country *i* at time *t*

[258] The same threshold also use by in other study. See Giorgia Maffini and Socrates Mokkas, "Profit Shifting and Measured Productivity of Multinational Firms," *Oxford University Centre for Business Taxation Working Paper*, 09/20 (2009).

AA_{it} = availability of transfer pricing rules and/or interest limitation rules

e_{it} = tax effectiveness in country *i* at time *t*

k_{it} = capital in firm in country *i* (fixed asset) at time *t*

l_{it} = labour in firm in country *i* (cost of employees) at time *t*

a_{it} = productivity (GDP per capita) in country *i* at time *t*

u_{it} = error term

Country *i* stands for host country of subsidiary, while *p* stands for non-country *i* where parent is domiciled. *t* refers to time period during 2005 – 2013 (9 years). β_1, β_2, β_3, γ_1, γ_2 are parameters of each variable. All parameters are expected to be > 0, except for γ_1, which is < 0. The relationship signs are based on theory and empirical studies on profit shifting as previously explained.

Since that I use OLS regression with panel data (combination of cross section and time-series data), the regression will be more complex due to the possibility that unobserved variable is correlate with any explanatory variables. Therefore, rather to apply random effect, I will use fixed effect. On the assumption of strict exogeneity on explanatory variables, fixed effect estimator is unbiased and allows any correlation between unobserved variable with any variable at time *t.*[259] In order to reduce misattribution of reducing loss to profit shifting, I will test the model with country binary variable (do not change overtime) to control the regression result.[260]

Dependent variable is reported profit. As discussed before, profit shifting is a gap between true profit and reported profit. Conversely, profit shifting is measured as any change of reported profit as impact on corporate tax policy. Based on previous works, profitability variable could be divided into twofold: profitability in a single value and profitability which is divided by denominator. While majority of research used size of profit (single value), several papers employed profitability indicator $\left(\frac{\pi}{c}\right)$ with argument that any firms' performance depends on their activity or utilization of production factor.[261] In simple words, profitability indicator explains relationship between profit and cost or any resources that used to produce an output. Further, application of profitability indicators is very common for transfer pricing study.[262]

I will test two level of size of profit (single value), namely: (i) earnings before interest and expense (EBIT); and (ii) pre-tax profitability, which is net income after deducted by the interest expense (EBT). EBIT and pre-tax profitability could give precise indication of profit shifting rather than after-

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259 Jeffrey M. Wooldridge, *Econometric Analysis of Cross Section and Panel Data* (Massachusetts: The MIT Press, 2002), 247-252.

260 Dhammika Dharmapala, "What Do We Know About Base Erosion and Profit Shifting? A Review of the Empirical Literature," *Coase-Sandor Institute for Law & Economics Working Paper*, No. 702 (2014): 4-5.

261 For instance see Giorgia Maffini, "Tax Haven Activities and the Tax Liabilities of Multinational Groups," *Oxford University Centre for Business Taxation Working Paper*, 09/25 (2009).

262 Intensity for application of profit level indicator is very often especially nowadays with more than 70% of transfer pricings study use transactional net margin method (TNMM) as their primary method. The idea was based on return of investment on economics field, but adopted through accounting rate of return. See Elizabeth King, *Transfer Pricing and Corporate Taxation: Problems, Practical Implications and Proposed Solutions* (New York: Springer, 2009), 6.

tax profit, since that there is possibility that multinational enterprise equalize all return across locations.[263] Moreover, by practice both level of profitability, there is a chance to capture different effect of profit shifting strategies. EBIT is exclusive for transfer price manipulation; whereas pre-tax profitability is encompass aggregate impact of transfer price manipulation and debt shifting. Such information is available on ORBIS database.

The dependent variable is natural logarithm for subsidiary *i* at time *t*. Further, we also exclude non-positive profit indicator as follow previous empirical studies done by Dharmapala and Riedel (2013).[264] It is true that negative profit could be result of any profit shifting, for instance, by making extreme payment of royalty or management fees for parent. Some countries also build their audit mapping risk for firm that suffers losses, especially in multi-year period.[265] However, incentives to have profit shifting strategies are most likely to be relevant when the subsidiary reported positive profit.[266]

To challenge the effect of incentive and disincentive of profit shifting strategies, there are two predictor (core) variables. Most of empirical studies in profit shifting not quantify joint impact of corporate tax rate (incentive) and anti-avoidance rule (disincentive) on profitability or measurement of business decision making. However, Blouin et al. (2013), have initiated this when analyse the impact of host corporate tax rate and thin capitalization rules to US multinational enterprises capital structure.[267] Other authors, such as Lohse and Riedel (2013) also involve transfer pricing rule with corporate tax rate factor in single regression model.[268]

The first predictor variable is tax rate difference for capture the incentive effect to allocation of income in low tax country or placed excessive debt in high tax country. [269] In this paper, it refers to the difference between top statutory tax rates in subsidiary countries (developing countries) with top statutory tax rates in parent's country. Although effective tax rate (marginal or average) is superior since it combines various information namely: statutory tax rate, depreciation rates, or any tax

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263 Harry Grubert, "Intangible Income, Intercompany Transactions, Income Shifting, and the Choice of Location," *National Tax Journal*, Vol. LVI, No. 1, Part 2 (2003): 228.

264 Dhammika Dharmapala and Nadine Riedel, "Earning Shocks and Tax-motivated Income-shifting: Evidence from European Multinationals," *Journal of Public Economics*, Vol. 97, No. 1 (2013): 95-107.

265 Further, firms with consistent and continued losses need further examination and considered as one of indicators of profit shifting risk. See UN, *United Nations Practical Manual on Transfer Pricing for Developing Countries* (New York: UNDESA, 2013), 298.

266 Theresa Lohse and Nadine Riedel, "Do Transfer Pricing Laws Limit International Income Shifting? Evidence from European Multinationals," *CESifo Working Paper*, No. 4404 (2013): 1-30.

267 Jennifer Blouin, et al., "Thin Capitalization Rules and Multinational Firm Capital Structure, *IMF Working Paper*, WP/14/12 (2014): 23-24.

268 Theresa Lohse and Nadine Riedel, "Do Transfer Pricing Laws Limit International Income Shifting? Evidence from European Multinationals," *CESifo Working Paper* No. 4404 (2013).

269 This argument also explained in the context of location of intangible (patent). See Tom Karkinsky and Nadine Riedel, "Corporate Taxation and the Choice of Patent Location within Multinational Firms," *Journal of International Economics*, Vol. 88, Issue 1 (2012): 176-185.

incentives into single measure;[270] however, effective tax rate will play important role unambiguously in the context of choice to locate capital (investment), but not in the case of allocation of profit (taxable income).[271]

To calculate the difference, I collect data of corporate statutory tax rates from Corporate Tax Rates Table (KPMG), Global Corporate Tax Summaries (PWC), and also Worldwide Corporate Tax Guide (Ernst & Young) from period 2005 - 2013. Concerning that there is possibility to have two or more different direct shareholders (parents), I will focus on country where the dominant shareholder is situated. Therefore, tax difference will be based on pair of subsidiary-parent (as showed in Figure 4.1). The data is on % (percentage).

Effectiveness of anti-avoidance rule will integrate variable of availability of anti-avoidance rule with tax effectiveness. This is concerning Allingham and Sandmo model that any penalty from tax evasion activities will be powerful if probability of detection for non-compliance behaviour is high.[272] Therefore, I believe that the application of tax law depends on degree of tax authorities' effectiveness and enforcement to collect taxes. Availability of anti-avoidance rule is binary variable (1 = available; 0 = otherwise), meanwhile tax enforcement factor is scale from 0 (not effective) to 1 (fully effective). Information on anti-avoidance rules was gathered from any survey, news, and report on tax law from big accounting firms (EY, Deloitte KPMG, and PwC) and from IBFD (online corporate taxation database and IBFD Global Corporate Tax Handbook, various years). However, since the data or approximation of tax effectiveness is very difficult to find, especially for developing countries,[273] I will use variable 'regulatory quality' from Global Insight Business Risk and Conditions (WMO), which is combination of information on tax effectiveness and legislation.[274] Further, component of tax effectiveness on their dataset is measurement on how efficient the country's tax collection system is. As it mentioned on their document "The rules may be clear and transparent, but whether they are enforced consistently".

Please note that I do not include tax haven network as predictor variable in regression model. It is true that tax haven network creates risk for any aggressive tax planning; however, in the context of profit

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270 S. M. Ali Abbas and Alexander Klemm, "A Partial Race to the Bottom: Corporate Tax Developments in Emerging and Developing Economies," *IMF Working Paper*, WP/12/28 2012, 5; Michael P. Devereux, et al., "Corporate Income Tax Reforms and International Tax Competition," *Economic Policy*, Vol. 17, No. 35 (2002): 460.

271 Michael P. Devereux, "The Impact of Taxation on the Location of Capital, Firms and Profit: A Survey of Empirical Evidence," *Oxford University Centre for Business Taxation Working Paper*, WP 07/02 (2007): 41.

272 Expected utility of individual will influenced by tax rate, penalty rate, probability of detection, actual income, and benefit from undeclared income, as formulated in equation: $E[U] = (1-p)U(W-\theta X) + pU(W-\theta X-\pi(W-X))$. See Michael G. Allingham and Agnar Sandmo, "Income Tax Evasion: A Theoretical Analysis," *Journal of Public Economics*, Vol. 1, Issue 3-4 (1972): 324-325.

273 I found several potential variables which can measure how effective is tax enforcement, for instance: data on ratio of tax officers to taxpayers from USAID Collecting Taxes; data on type of tax authority institution (directorate general or semi-autonomous revenue authority) from OECD; or level of tax audit from country's tax administration. However, these data are mostly not available or incomplete for developing countries.

274 Information on Global Insight can be found at: www.globalinsight.com. Data from Global Insight also used by Kauffman, Kraay, and Mastruzzi for construction of Worldwide Governance Indicators by World Bank (see http://info.worldbank.org/governance/wgi/index.aspx#doc)

shifting, tax rate difference is more relevant (elementary). One of characteristic of tax havens is their low or zero nominal tax rates, and this is already covered by variable tax rate difference. Other features of tax havens, such as bank secrecy or flawed definition of economic substance, will be more relevant for other tax planning strategies that are not within the scope of this thesis (treaty shopping, hybrid mismatches, and others). Employing tax haven network together with tax rates at the same regression model can lead into misspecification or bias on measurement, since demand of tax haven also influenced by corporate tax rates.[275]

For data on anti-avoidance rule, I will use transfer pricing rule when dependent variable is EBIT; and use both transfer pricing rule and interest limitation rule when dependent variable is pre-tax profitability. Detail on each anti-avoidance rule, such as: availability of penalty or obligation for documented transfer pricing policy, as well as type of interest limitation rule; and their relationship with profit shifting strategies will beyond of this thesis. However, this would be an interesting topic for future research.[276]

In order to control the causality effect between predictor variables and dependent variable, I include three variables that correlate with profitability of firms, as following: capital, labour and market opportunity (level of economy). Capital, as well labour, is internal drivers of firm's performance. Profit as indirect measurement of output productivity could be seen as return of investment of both capital and human. I also follow previous empirical studies that also include these internal factors.[277] In this thesis, capital is measured by fixed assets; meanwhile labour measured by cost of employees. Both variables are in natural logarithm (log) and information available at ORBIS. Lastly, for control variable from external firm, I will use GDP per capita ('000 US$) as to measure the size of the market and purchasing power in each country. The data is taken from World Development Indicators, released by the World Bank.

4.5.2. Robustness Test, Endogeneity Problem, and Extension

To check stability of coefficient of predictor variables, I will do two robustness analyses without changing the structure of basic regression model. The first modification is:

$$\log(\pi_{it}^{r}) = C + \gamma_1(\tau_{it} - \tau_{pt}) + \gamma_2(AA_{it} \times e_{it}) + \beta_1 \log(k_{it}) + \beta_2 \log(l_{it}) + \beta_3 a_{it} + \beta_4 cc_{it} + u_{it}$$

β_1, β_2, β_3, β_4, γ_1, γ_2 are parameters of each variable. Similar with the basic regression model, all parameters are expected to be > 0, except for γ_1, which is < 0. There are three steps to test the stability

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275 See Thiess Buettner, et al., "Anti-Tax Avoidance Rules and Multinationals' Tax-Haven Demand," *Paper for Annual Public Finance Seminar 2012 at the LMU Munich and 10th MiDi-Workshop of Deutsche Bundesbank in Frankfurt in November 2012* (Unpublished, 2012).

276 Such research is feasible since there are some papers have made an scaling on detail on each rule. For instance, see Theresa Lohse, Nadine Riedel, and Christoph Spengel, "The Increasing Importance of Transfer Pricing Regulations – A Worldwide Overview," *Oxford Centre for Business Taxation Working Paper*, WP 12/27 (2012).

277 For instance, see Harry P. Huizinga and Luc Laeven, "International Profit Shifting within Multinationals: A Multi-country Perspective," *Journal of Public Economics*, Vol. 92, Issues 5-6 (2008): 1164-1182.

of coefficient. First, I will put additional variable, namely control of corruption (cc_{it}). Corruption is matter from business perspective that sometimes considered as informal tax to the government. There is a negative relationship between corruption and corporate tax payment.[278] Second, following Huizinga and Laeven (2008), I also changed specification of capital from fixed asset to total asset. This data is available from ORBIS (see Table 4.2). Finally, I will test the model with country binary variable to control the regression result.

The second modification aims to check the stability and strength of effectiveness anti-avoidance rules. Since the basic regression model use interaction of availability of anti-avoidance rule and tax effectiveness; the information how each variable give impact is unknown. To check the possibility that each variable might give different outcome, either sign or significance, I will modify the basic regression model as following:

$$\log(\pi_{it}^{r}) = C + \gamma_1(\tau_{it} - \tau_{pt}) + \gamma_2 AA_{it} + \gamma_3 e_{it} + \beta_1 \log(k_{it}) + \beta_2 \log(l_{it}) + \beta_3 a_{it} + u_{it}$$

β_1, β_2, β_3, γ_1, γ_2, γ_3 are parameters of each variable. All parameters are expected to be > 0; except for γ_1, which is < 0 and γ_2, which is ambiguous. However I expect that $\gamma_3 > \gamma_2$; it means that tax effectiveness will have greater impact to reported profit. Detail of each variable can be found on Table 4.2. With this information, I could also compare strength of each anti-avoidance rule with and without interaction to tax effectiveness (compare to the result from basic regression model).

Moreover, the model assumes that corporate tax rate difference is exogenous to reported profit. In the real situation, there is a probability that profit of firms creates causality effect to corporate tax rate policy (endogeneity). In order to check this I will use exogeneity test based on procedure from Davidson-MacKinnon (1993) to avoid endogeneity problem.[279] I will use population diference as instrument variable. Implementation in STATA software will follow command "dmexogxt" as developed by Baum and Stillman.[280]

The analysis also extend to comparison of semi-elasticity of tax rate difference on the level of EBIT and pre-tax profitability, in order to measure which profit shifting channel is more dominant (transfer price manipulation or debt shifting). I presume that transfer price manipulation is superior.

Furthermore, amount of semi-elasticity is very useful to sizing the magnitude of tax rate difference to incentivized profit shifting. Nevertheless, there is decreasing trend of magnitude of profit shifting overtime. I will try to connect this with the increasing role of anti-avoidance rule. In order to complete the analysis, I involved two additional variables in the basic model that are: interaction between

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278 See Clemens Fuest, Giorgia Maffini, and Nadine Riedel, "How Does Corruption in Developing Countries Affect Corporate Investment and Tax Compliance?" *Beiträge zur Jahrestagung des Vereins für Socialpolitik* No. A17-V1 (2010): Ökonomie der Familie - Session: Corporate Taxation, No. A17-V1.

279 See Russell Davidson and James G. MacKinnon, *Estimation and Inference in Econometrics*. (New York: Oxford University Press, 1993).

280 Available online at: http://econpapers.repec.org/software/bocbocode/s401103.htm.

corporate tax rate difference with time, $(\tau_{it} - \tau_{pt}) \times t$; and interaction between effectiveness of anti-avoidance rule with time, $(AA_{it} \times e_{it}) \times t$. Where *t* is 2005 = 1, and so forth, to 2013 = 9.

Table 4.2 – Variable Specification

Variable	Source	Format	Measurement
Dependent variables			
Earnings before interest and expense (EBIT)	ORBIS	Natural log	$\ln(b_{it}^{r})$
Pre-tax profitability (EBT)	ORBIS	Natural log	$\ln(b_{it}^{r})$
Predictor variables			
Tax rate difference	KPMG, EY, Deloitte, and PwC	Percentage	$(\tau_{it} - \tau_{pt})$
Effectiveness of anti-avoidance rule	IBFD, KPMG, EY, Deloitte, PwC and Global Insight	Scale (availability of anti-avoidance rule times regulatory quality)	
- Transfer pricing rule			$(TP_{it} \times e_{it})$
- Interest limitation rule			$(TC_{it} \times e_{it})$
Control variables			
Fixed asset (capital)	ORBIS	Natural log	$\ln(k_{it})$
Cost of employees (labour)	ORBIS	Natural log	$\ln(l_{it})$
GDP per capita	World Development Indicators (World Bank)	Scale ('000 USD)	a_{it}
Robustness variables			
Total asset (capital)	ORBIS	Natural log	$\ln(k_{it})$
Availability of transfer pricing rules	IBFD, KPMG, EY, Deloitte and PwC	Binary variable (1 = available, 0 = otherwise)	TP_{it}
Availability of interest limitation rules			TC_{it}
Tax effectiveness	Variable of regulatory quality from Global Insight	Scale 0 - 1	e_{it}
Tax rate difference*time	KPMG, EY, Deloitte, and PwC	Percentage	$(\tau_{it} - \tau_{pt}) \times t$
Effectiveness of anti-avoidance rule*time	IBFD, KPMG, EY, Deloitte, PwC and Global Insight	Scale	$(TP_{it} \times e_{it}) \times t$; $(TC_{it} \times e_{it}) \times t$
Control of corruption	Worldwide Governance Indicator (World Bank)	Scale (-2.5 to + 2.5)	cc_{it}

4.6. Statistical Descriptive

Based on preliminary search on ORBIS database, there are 28,679 potential samples; however to include them as my final sample I also make second stage of filtering process based on availability of data for each firm. Since information of EBIT, pre-tax profitability, fixed asset, cost of employees, and also –the important thing- information of parent location are primary for the basic regression model; then I excluded any firm which have no information for those variables during 2005 to 2013. Thus, if firm have at least has one single year of complete data, I will include as my final sample.

With STATA software, I found only 8,602 firms that survived to be the final sample. These data are unequally distributed in 29 developing countries (see Table 4.3). Furthermore, most of subsidiaries in

those developing countries have parent in advanced economies (65%) and tax havens (26%). Whereas, the rest (9%) have their parents located in another developing countries.

Furthermore, I build dataset for regression analysis containing eleven variables. There are 40,394 to 43,821 observations for 8,602 sample firms, meanings that on average each firm have 4.7 to 5.0 years of analysis. Mean from both variables ln(EBIT) and ln(pre-tax profitability) are in similar amount, indicating that they have small difference (Table 4.4). This is also supported by high correlation between them (0.949) as shown by Table 4.5.

Table 4.3 – Number of Samples, based on Location of Their Parents

Developing Country	Location of Parent				Total Subsidiaries (N)
	Developing Countries	Tax Havens	Advanced Economies	Undescribed	
Argentina	-	-	1.00	-	2
Bangladesh	0.50	-	0.50	-	2
Bosnia and Herzegovina	0.19	0.11	0.70	-	391
Brazil	-	0.50	0.50	-	2
Bulgaria	0.07	0.27	0.66	-	599
China	-	1.00	-	-	2
Colombia	-	-	1.00	-	1
Ecuador	0.33	0.17	0.50	-	6
Egypt	-	1.00	-	-	1
El Salvador	-	-	1.00	-	1
Ghana	-	-	1.00	-	1
Hungary	0.01	0.10	0.89	-	597
India	0.03	0.35	0.62	-	113
Indonesia	0.11	0.44	0.44	-	27
Macedonia	-	1.00	-	-	1
Malaysia	0.05	0.32	0.63	-	131
Montenegro	-	0.33	0.67	-	3
Nepal	1.00	-	-	-	1
Nigeria	0.50	-	0.50	-	2
Pakistan	0.06	0.12	0.82	-	17
Papua New Guinea	-	-	1.00	-	1
Philippines	-	0.50	0.50	-	6
Romania	0.08	0.28	0.63	0.00	4,158
Serbia	0.17	0.19	0.64	-	1,277
Sri Lanka	0.10	0.60	0.30	-	10
Tanzania	-	0.50	0.50	-	2
Thailand	0.05	0.20	0.75	-	129
Ukraine	0.04	0.38	0.57	-	1,117
Zambia	-	0.50	0.50	-	2
Total	0.09	0.26	0.65	0.00	8,602

On the other hand, tax rate difference ranging from -45% to 34%, with average on -10.5%. At first sight, it can indicate that corporate tax rate in parent's location is relative high. However, detailed information on samples showed that this caused by that almost 95% of sample comes from developing countries in European region, which have relative low corporate tax rates. Moreover, effectiveness of transfer pricing rules is 0.67 on average, higher than effectiveness of interest limitation rules, 0.58.

Both of variables have minimum value of 0 (anti-avoidance rule is not available) to 0.88 (anti-avoidance rule is available but not optimal to enforce). This data support explanation on Chapter 3 that argued that application of anti-avoidance rule would be depending on capability of tax administration.

Table 4.4 – Summary Statistics

	Obs.	Mean	Std dev	Min	Median	Max
ln EBIT	43821	5.25	2.20	-8.12	5.28	14.31
ln pre-tax profitability	40394	5.10	2.28	-5.77	5.14	14.33
Tax rate difference (%)	43821	-9.71	9.60	-45.00	-10.55	34.00
GDP per capita (000 USD)	43821	7.12	2.92	0.32	8.07	15.60
Fixed asset (ln)	43821	5.92	2.69	-8.10	6.01	15.32
Total asset (ln)	43820	7.74	1.98	-2.60	7.70	15.36
Cost of employees (ln)	43821	5.80	1.99	-5.37	5.87	12.67
Transfer pricing rule (availability)	43821	0.99	0.11	0	1	1
Interest limitation rule (availability)	43810	0.81	0.39	0	1	1
Tax effectiveness	43821	0.67	0.12	0.25	0.75	0.88
Effectiveness of interest limitation rule	43821	0.67	0.14	0	0.75	0.88
Effectiveness of transfer pricing rule	43810	0.58	0.29	0	0.75	0.88
Control of corruption	43821	-0.25	0.29	-1.42	-0.22	0.61

Control variables, such as fixed asset, cost of employees, total asset or fixed asset are having high correlation (> 0.3) with both EBIT and pre-tax profitability (Table 4.5). Positive relationship between them indicates that those factors are drivers for profitability of firms. Control of corruption data is ranging between -1.42 and 0.62, with average on -0.22 which means that most of developing countries still struggling with corruption problem.

4.7. Conclusion

In this thesis, I will use individual firm data as unit of analysis (micro-level framework). Moreover, any firm that is a part of multinational group located in developing countries, functioned as subsidiary, and owned dominantly by foreign shareholder, actives, and classify as industrial firms will be selected as sample. In order to determine the scale of incentive and disincentive of profit shifting possibilities, the scope of analysis is pair relationship subsidiary-parent, ignoring their affiliated firms or global ultimate owner. From screening criteria and filtering process, I found 8,602 subsidiaries in 29 countries that will be used as samples. Period of analysis is 2005 – 2013 (9 years).

Outspread the works from Hines and Rice (1994) and Huizinga and Laeven (2008), the regression model consist two predictor variables: tax rate difference (incentive) and effectiveness of anti-avoidance rule (disincentive). The causality effect of these corporate tax policies will be tested in two different level of profitability: EBIT and pre-tax profitability in order to sizing the magnitude effect both from transfer price manipulation and debt-shifting. Moreover, anti-avoidance rule is divided into

two variables, namely effectiveness of transfer pricing rule and interest limitation rule. This thesis uses panel OLS regression with fixed effect. Moreover, in order to check stability of coefficient, robustness test with modification and involvement additional control variables will be applied.

In the end, the objective is to find semi-elasticity of each predictor variable as measured by the changes of reported profit as impact from any changes on corporate tax policy (increase statutory tax rate, apply anti-avoidance rule, increase tax enforcement). I expect that tax rate differences will incentivize profit shifting strategies, with transfer price manipulation as favourable scheme. Both transfer pricing rules and interest limitation rules have similar semi-elasticity effect as disincentive for profit shifting.

Table 4.5 – Correlation Matrix of All Variables

	EBIT	Pre-tax profit	Tax rate diff.	GDP per capita	Fixed asset	Total asset	Cost of employees	TP rules (avai.)	IL rules (avai.)	Tax effect.	Effect. of IL rules	Effect. of TP rules	Control of corr.
EBIT	1.000	0.949	0.067	0.030	0.660	0.828	0.692	(0.000)	(0.096)	0.057	0.048	(0.056)	0.021
Pre-tax profit	0.949	1.000	0.065	0.010	0.598	0.774	0.658	0.001	(0.106)	0.043	0.037	(0.068)	0.020
Tax rate diff.	0.067	0.065	1.000	(0.244)	0.073	0.092	0.018	0.016	(0.410)	(0.235)	(0.191)	(0.384)	(0.356)
GDP per capita	0.030	0.010	(0.244)	1.000	(0.017)	0.030	0.090	0.144	0.631	0.777	0.728	0.754	0.774
Fixed asset	0.660	0.598	0.073	(0.017)	1.000	0.834	0.625	(0.026)	(0.147)	0.013	0.001	(0.104)	(0.007)
Total asset	0.828	0.774	0.092	0.030	0.834	1.000	0.729	(0.021)	(0.141)	0.041	0.027	(0.093)	0.027
Cost of employees	0.692	0.658	0.018	0.090	0.625	0.729	1.000	0.019	(0.093)	0.073	0.072	(0.047)	0.049
TP rules (avai.)	(0.000)	0.001	0.016	0.144	(0.026)	(0.021)	0.019	1.000	0.128	0.130	0.539	0.119	(0.007)
IL rules (avai.)	(0.096)	(0.106)	(0.410)	0.631	(0.147)	(0.141)	(0.093)	0.128	1.000	0.614	0.566	0.951	0.638
Tax effect.	0.057	0.043	(0.235)	0.777	0.013	0.041	0.073	0.130	0.614	1.000	0.896	0.809	0.658
Effect. of IL rule	0.048	0.037	(0.191)	0.728	0.001	0.027	0.072	0.539	0.566	0.896	1.000	0.729	0.552
Effect. of TP rule	(0.056)	(0.068)	(0.384)	0.754	(0.104)	(0.093)	(0.047)	0.119	0.951	0.809	0.729	1.000	0.718
Control of corr.	0.021	0.020	(0.356)	0.774	(0.007)	0.027	0.049	(0.007)	0.638	0.658	0.552	0.718	1.000

Chapter 5
Empirical Analysis and Policy Options

5.1. Introduction

Analysis will be divided into three parts. **Firstly**, I will investigate how corporate tax policy will impact profit shifting strategies. As mentioned before, incentive to shifting profit will increase as the gap of corporate tax rate between country where subsidiary and their parent are located rises. At the same time, I will do joint factors of analysis adding other factor into the same analysis with corporate tax rate with consideration of government response to combat profit shifting by establishing anti-avoidance rule. It might be peculiar if anti-avoidance rule is not considered by multinational enterprises when they formulate business decision making. Increasing importance of anti-avoidance rule was one of the features of tax system design in 21st century.

In this thesis, I narrowed down my research to interest limitation rule and transfer pricing rule. At the end, the parameter size for both factors: corporate tax rate and anti-avoidance rule, can be used to calculate elasticity for profit shifting strategies (change in reported profit by multinationals after any change on corporate tax policy). In order to have precise magnitude of those policies, an econometrical approach will be done. This will be discussed in part 5.2.

Secondly, since the magnitude for profit shifting is available, I will extend the analysis to find which profit shifting strategy is more dominant in developing countries. Although there is general consensus that transfer price manipulation (non-financial technique) is more favourable and accounts for approximately 72% of the total shifting strategies, up until now there were no empirical study done for the case of developing countries. Moreover, I will make a comparison on magnitude of profit shifting between my result and other empirical studies in the same field. The discussion also comprises on time trend of profit shifting magnitude in developing countries.

Lastly, I will discuss realistic policy options for developing countries. Even though policy analysis will rely much on empirical result (for instance, how to upsurge more disincentives for profit shifting possibilities), I expect that problems of policy options for developing countries will depend on two factors: external and internal. External factors concentrate on how international tax system works and prospects of fundamental change. On the other hand, internal factors will deal with how developing countries can improve their tax administration along with their problems. Furthermore, these policy options will also be linked with current proposals on international tax reform, mainly from OECD BEPS Action. I will discuss these substances in part 5.4.

5.2. Empirical Findings

5.2.1. Basic Regression Result

Regression analysis on empirical model will be applied in two different dependent variables: EBIT and pre-tax profitability. In general, the empirical result supports the theoretical framework and previous empirical studies. Corporate tax rate difference gives negative significant causality effect to reported profit of multinational enterprise, while effectiveness of anti-avoidance rule gives the opposite effect. The basic regression model used sample from 8,602 subsidiaries and 41,929 observations in pre-tax profitability level (at the minimum level) and higher at EBIT level.

Table 5.1 shows the basic regression results for analysis in the level of EBIT and pre-tax profitability. Each column shows different regression model. In column (1) and (2), I ran regression with EBIT as dependent variable. Difference between column (1) and (2) is on the involvement of the effectiveness of anti-avoidance rule variable, e.g. transfer pricing rule. I found that the coefficient of corporate income tax rate difference is -0.011 and reduced to -0.010 after transfer pricing rule took place (both significant at the level of 1%). In column (2), the effectiveness of transfer pricing rule is on 0.393 and significance at the level of 1%.

Furthermore, all control variables involved in regression (1) and (2) are significant and showed positive sign. It can be interpreted that the internal factor of productions, e.g. labour and capital, and also economic level (GDP per capita) will positively contribute to the subsidiary's profit. The R-squared are low (only 11% of the data is fit with the model); however, it can be ignored since the evidences of profit shifting are assumed to be not applicable for all multinationals. I also include country dummies in all basic regression models.

In regressions (3) to (6), I ran a model with pre-tax profitability as dependent variable, which resulted in higher coefficient of corporate tax rate difference, ranging between -0.013 to -0.012 (depending on whether the variable of effectiveness of anti-avoidance rule is involved or not). Columns (3) and (4) were basically copying the independent variables in column (1) and (2). In column (4) and (6), I tested each anti-avoidance rule in separated regression. In pre-tax level, the existence of transfer pricing rule (independently) will give positive effect to 0.440 and significant at 5%. While the effectiveness of interest limitation rules (independently) contribute to 0.514 at 1% level. If I combine all anti-avoidance rules and corporate tax rate difference in one simultaneous model as in regression (5), the corporate tax rate difference will give -0.012 (negative contribution) to reported profit of subsidiary, while the effectiveness of transfer pricing rule and interest limitation each will be 0.44 and 0.425.

As shown by column (1) and (3), combination of two basic production factors, namely labour and capital, are approximately in 0.52 (in pre-tax profitability level) and 0.55 (in EBIT level), with labour (cost of capital) as dominant factor. The result suggests that technological factor contributed for the

decreasing return of productivity. This is similar with the findings in European multinationals. However, if we make a comparison with the sum of coefficients between labour and capital in EBIT level, productivity of multinational enterprise in developing countries are much lower than European (0.552 < 0.876).[281] With concern to the Cobb-Douglas function, it can be argued that the subsidiaries in developing countries are not in their optimal level.

Table 5.1 – Basic Regression with EBIT and Pre-tax Profitability as Dependent Variable

Independent variable	EBIT		Pre-tax profitability			
	(1)	(2)	(3)	(4)	(5)	(6)
Tax rate difference (%)	-0.011***	-0.010***	-0.013***	-0.013***	-0.012***	-0.012***
	0	0	0	0	0	0
GDP per capita (000 USD)	0.026***	0.021***	-0.005	-0.009	-0.013*	-0.01
	0	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)
Fixed asset (ln)	0.133***	0.132***	0.110***	0.109***	0.109***	0.109***
	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)
Cost of employees (ln)	0.419***	0.414***	0.407***	0.406***	0.400***	0.401***
	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)
TP rules effectiveness		0.393***			0.440***	0.474***
		(-0.08)			(-0.09)	(-0.09)
Interest limitation rules effectiveness				0.514***	0.425**	
				(-0.14)	(-0.14)	
Country control	√	√	√	√	√	√
Constant	1.7454	1.5587	1.9398	1.68	1.5136	1.7126
N	43,824	43,821	41,943	41,929	41,929	41,940
N-groups	8,602	8,601	8,554	8,552	8,552	8,553
R-squared	0.1112	0.1119	0.081	0.083	0.151	0.074
Countries	29	29	29	29	29	29

Notes: Variable of transfer pricing rules effectiveness is the interaction between availability of transfer pricing rules and tax effectiveness, $(TP_{it} \times e_{it})$. Variable of interest limitation rules effectiveness is the interaction between availability of interest limitation rules and tax effectiveness, $(TC_{it} \times e_{it})$. Numbers in parenthesis show the standard error. ***, ** and * denotes significance level at 1% (p < 0.01), 5% (p < 0.05), and 10% (p < 0.1).

Furthermore, the coefficient of GDP per capita is not consistent at the EBIT and pre-tax level. From columns (1) and (2), the coefficients are positive and significant, around 0.021 and 0.026. The sign is changing when I used pre-tax profitability as dependent variable, becoming -0.013 in column (5). There is an argument for this. GDP per capita is basically an indicator of level of development and market opportunities. Therefore, if economic level increases –as an accumulation of technological progress, soft and hard infrastructures, etc.-, the profit of company is likely to increase accordingly since there is increasing demand and wealth. This argument could be relevant at the EBIT level. However, the negative sign of GDP per capita at the pre-tax profitability level can be caused by

[281] The value of sum coefficient between labour and capital to pre-tax level is based on regression 1, Table 4 in Harry P. Huizinga and Luc Laeven, "International Profit Shifting within Multinationals: A Multi-country Perspective," *Journal of Public Economics*, Vol. 92, Issues 5-6 (2008): 1173.

requirement for additional financing (loan) for their business, as the market gets larger. As a result, interest expense increases and will reduce reported profit.

With regards to joint effect between incentive and disincentive of profit shifting strategy, I will focus on model which contains both variables, particularly on column (2) and (5). The coefficient of corporate tax rate difference in column (2) and (5) can be interpreted as profit shifting semi-elasticity. The semi-elasticity represents the percentage change in EBIT or pre-tax profitability associated with a 1% point change in corporate tax rate difference. Since the variable of corporate tax difference is in percentage, then interpretation of the coefficient should be multiplied by 100 points. Therefore, if subsidiary country increases the corporate income tax rate for 10%, this will incentivized profit shifting (as measured by the negative change of reported profit) to 10% (-0.01*100*10) at the EBIT and 12% (=-0.012*100*10) at the pre-tax profitability level.

Interpretation on the effectiveness of anti-avoidance rule is more challenging, since the unit scale of effectiveness is abstract.[282] However, this could be interpreted as: any effort to apply (enforce) both transfer pricing and interest limitation rule to certain quality, in consistent and efficient way, that may improve the effectiveness of the rule X% higher as from the starting point. Therefore, with the total coefficient on the effectiveness of anti-avoidance rule of 0.865 (=0.44 + 0.425) at the pre-tax profitability level, any efforts that are expected to increase the effectiveness of anti-avoidance rule to 10% higher, will positively contribute to reported profit of the subsidiary around 8.65%.

If we take into account incentives and disincentives, then we could measure how effective is anti-avoidance rule to combat profit shifting strategies. In EBIT level, effectiveness of transfer pricing rule could reduce the willingness to shift profit to parents up to 39% (=0.39/1.00). The role of transfer pricing rules decreased at pre-tax level to 36% (=0.44/1.20). Whereas, if country have both transfer pricing rules and interest limitation rules then the profit shifting strategies could be reduced to 72% (=0.86/1.20) in pre-tax profitability level, as shown by Figure 5.1. This result is somewhat similar with the findings from Lohse and Riedel (2013) that transfer pricing rule is effectually can reduce profit shifting behaviour to 50% on average.[283]

To illustrate this, I will use example from the perspective of subsidiary in 3 different countries, namely: Ecuador, Nepal and Nigeria. All else being constant, what is the impact on profit shifting if both corporate tax rate difference and tax effectiveness (improvement in collecting taxes) increase for 10 points of %? In order to contrast the result, I assume that all those subsidiaries have the same reported profit, US$ 100,000.

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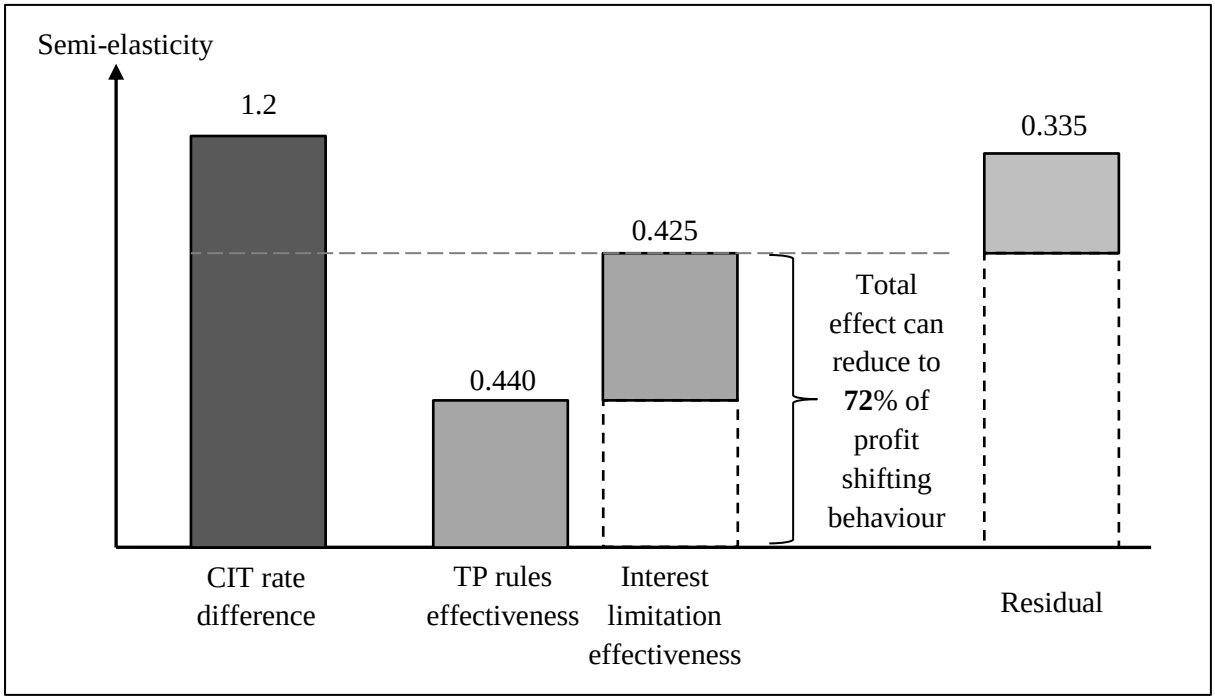
[282] As I described on Chapter 4, the effectiveness of anti-avoidance rule is interaction between the availability of anti-avoidance (binary) with government effectiveness in collecting taxes (scale 0 – 1).

[283] Theresa Lohse and Nadine Riedel, "Do Transfer Pricing Laws Limit International Income Shifting? Evidence from European Multinationals," *CESifo Working Paper*, No. 4404 (2013).

Figure 5.1 – Incentives and Disincentives of Profit Shifting in Developing Countries, 2005 - 2013



Note: in pre-tax profitability level

In January 2013, corporate income tax rate in **Ecuador** is reduced to 22% (before was 23%). In order to combat anti-avoidance strategies, the government armoured themselves with general anti-avoidance rule that contains substance-over-form provision (Article 17 of Tax Code). Moreover, they also have provisions on transfer pricing rule, which is generally based on the OECD Transfer Pricing Guidelines. The government, since 2008, also restrict all cross border loan agreements that concluded between related parties and registered with the Central Bank of Ecuador to not exceed a 3:1 debt to equity ratio. If a subsidiary in Ecuador has parent located in Barbados (25%), the changing tax policy would probably affect the behaviour of profit allocation inside this multinational. After corporate tax rate increases for 10% (now 32%), the tax rate difference between subsidiary and parent becomes 7%. Government also increase their regulatory enforcement including tax law up to 10 points higher. Since Ecuador has transfer pricing and thin capitalisation rules, then the reported profit of the subsidiary would be: US$ 100,000 * (100% + ((10% * -1.2) – (10% * 0.44) – (10% * 0.425))); or US$ 100,000 *(100% -3.35%) = US$ 96,650.

As land-locked economies, the international economic network of **Nepal** is limited with their neighbourhood's countries, especially India and China. The highest statutory corporate income tax rate in Nepal of 30% is applied for firms in specific sectors such as banks, financial institution, petroleum, cigars, and others. Tax avoidance was not concerned by the government, showed by the unavailability of such provisions on their tax law. A subsidiary in Nepal is controlled by its parent in China (tax rate is 25%). The increasing level of corporate income tax and tax effectiveness improvement to 10 point will likely impact on China parent to setting up the outward profit shifting

strategy from Nepal, as long as it will offer attractive net gain. The reported profit of the subsidiary after tax reform would be: US$ 100,000 * (100% + ((10% * -1.2) – (10% * 0) – (10% * 0))); or US$ 100,000 *(100% -12%) = US$ 88,000.

Nigeria is one of the engines of economic growth in Africa region. Although their standard corporate income tax rate is 30%, Nigeria offers various tax incentives for foreign investors that are willing to enter mineral, mining and agriculture sectors. Concerning that multinational enterprise could potentially shift their profit abroad, government enacted transfer pricing regulation, effective on 2 August 2012. Transfer pricing regulations cover almost all controlled transactions, including sales, purchase, intragroup services, and intercompany loan. On the other hand, there is no provision to limit interest deduction. Most of multinational enterprise in Africa operates with connection regional hub company in South Africa. As subsidiary in Nigeria, tax policy change will induce amount of shifted profit to their parent and reduce their reported profit to: US$ 100,000 * (100% + ((10% * -1.2) – (10% * 0.44) – (10% * 0))); or US$ 100,000 *(100% -7.6%) = US$ 92,400.

5.2.2. Robustness

From above regression result, there is a strong indication that corporate tax rate difference will impact on reported profit of multinational enterprise. Furthermore, the effectiveness of anti-avoidance rule plays a key role as a constraint for any profit shifting strategies. However, the model may contain a drawback that can lead into bias result. I will do a robustness check of the model to examine whether the result is consistent (test the stability of each coefficient, particularly for variable tax rate difference and effectiveness of anti-avoidance rule), as already explained on Chapter 4.

First robustness check is done with inclusion of total asset and control of corruption as independent variables. In Table 5.2, I ran 8 regression models. In general, the coefficients are stable ranging from -0.016 to -0.011. This is shown by the sign and significance result ($p < 0.01$) of corporate tax rate difference either when I replaced fixed asset with total asset, as in columns (2), (4), (5) and (7) or when control of corruption is included in columns (1), (2), (3), (4), (6) and (8). The same result also applies for variable of effectiveness of anti-avoidance, particularly effectiveness of transfer pricing rules. One significance that should be noticed is when I used total asset as replacement of fixed asset, the coefficient of effectiveness of transfer pricing rules were smaller around half of coefficient in basic regression model. On the other hand, any models that involved total assets have made the significance of interest limitation rules to be more than 10% ($p > 0.1$). However, if we ignored all models with total assets as measurement of capital, the results showed that the two important explanatory variables (incentive and disincentive of profit shifting) are robust.

Results for the coefficient of capital and labour are also robust; since they give the same sign with the basic model. Again, there is a different sign for coefficient of GDP per capita at the EBIT and pre-tax profitability level.

Table 5.2 – Robustness Test with Total Asset and Control of Corruption

Independent Variable	EBIT		Pre-tax Profitability					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Tax rate difference (%)	-0.011***	-0.013***	-0.013***	-0.015***	-0.016***	-0.013***	-0.016***	-0.014***
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
GDP per capita (000 USD)	0.021***	-0.029***	-0.014*	-0.062***	-0.061***	-0.01	-0.060***	-0.01
	(-0.01)	0	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)
Fixed asset (ln)	0.133***		0.109***			0.109***		0.110***
	(-0.01)		(-0.01)			-0.01		-0.01
Total asset (ln)		0.692***		0.680***	0.680***		0.681***	
		(-0.01)		(-0.01)	(-0.01)		(-0.01)	
Cost of employees (ln)	0.412***	0.163***	0.399***	0.148***	0.147***	0.400***	0.149***	0.403***
	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)
TP rules effectiveness	0.355***	0.160*	0.404***	0.233**	0.214**	0.452***		
	(-0.08)	(-0.07)	(-0.09)	(-0.08)	(-0.08)	(-0.09)		
Interest limitation rules effectiveness			0.463***	0.15			0.23	0.566***
			(-0.14)	(-0.13)			(-0.13)	(-0.14)
Control of corruption	-0.154*	0.066	-0.137	0.136		-0.093		-0.226**
	(-0.07)	(-0.07)	(-0.08)	(-0.08)		(-0.08)		(-0.08)
Country control	√	√	√	√	√	√	√	√
Constant	1.5414	-1.0589	1.4793	-0.9707	-0.9131	1.7016	-0.9324	1.6015
N	43821	44824	41,929	42,953	42,964	41,940	42,953	41,929
N-groups	8601	8720	8,552	8,674	8,675	8,553	8,674	8,552
R-squared	0.112	0.1916	0.081	0.151	0.151	0.08	0.151	0.08
Countries	29	29	29	29	29	29	29	29

Notes: Variable of transfer pricing rules effectiveness is the interaction between availability of transfer pricing rules and tax effectiveness, ($TP_{it} \times e_{it}$). Variable of interest limitation rules effectiveness is the interaction between availability of interest limitation rules and tax effectiveness, ($TC_{it} \times e_{it}$). Numbers in parenthesis show the standard error. ***, ** and * denotes significance level at 1% ($p < 0.01$), 5% ($p < 0.05$), and 10% ($p < 0.1$).

Table 5.3 – Robustness Test with Stand-Alone Tax Effectiveness and Availability of Anti-Avoidance Rules

Independet Variable	EBIT			Pre-tax Profitability						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Tax rate difference (%)	-0.011***	-0.011***	-0.011***	-0.013***	-0.013***	-0.013***	-0.013***	-0.013***	-0.012***	-0.013***
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
GDP per capita (000 USD)	0.025***	0.019***	0.019***	-0.006	-0.012*	-0.013*	-0.006	-0.014*	-0.007	-0.014**
	(0)	(0)	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)
Fixed asset (ln)	0.133***	0.132***	0.132***	0.109***	0.108***	0.108***	0.110***	0.108***	0.109***	0.108***
	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)
Cost of employees (ln)	0.418***	0.410***	0.409***	0.406***	0.397***	0.396***	0.407***	0.397***	0.406***	0.396***
	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)	(-0.01)
Transfer pricing rules	0.083		0.048	0.131*		0.09			0.131*	0.089
	(-0.05)		(-0.05)	(-0.06)		(-0.06)			(-0.06)	(-0.06)
Interest limitation rules							0.263*	0.335**	0.263*	0.334**
							-0.11	-0.11	(-0.11)	(-0.11)
Tax effectiveness		1.186***	1.175***		1.328***	1.305***		1.367***		1.344***
		(-0.15)	(-0.15)		(-0.17)	(-0.17)		(-0.17)		(-0.17)
Country dummy	√	√	√	√	√		√	√		
Constant	1.676***	1.049***	1.016***	1.831***	1.159***	1.097***	1.733***	0.873***	1.624***	0.813***
N	43824	43821	43821	41,943	41,940	41940	41,932	41,929	41932	41929
N-groups	8602	8601	8601	8,554	8,553	8553	8,553	8,552	8553	8552
R-squared	0.111	0.113	0.113	0.08	0.081	0.081	0.08	0.081	0.08	0.081
Countries	29	29	29	29	29	29	29	29	29	29

Notes: Numbers in parenthesis show the standard error. ***, ** and * denotes significance level at 1% ($p < 0.01$), 5% ($p < 0.05$), and 10% ($p < 0.1$).

The second robustness tests are dealing with the strength of anti-avoidance rule in stand-alone basis. I replaced all effectiveness of anti-avoidance rules variables, $(TC_{it} \times e_{it})$ and $(TP_{it} \times e_{it})$, with TC_{it}, TP_{it} and e_{it}. I ran 3 regression models on EBIT level and 7 regression models on pre-tax profitability level. The result, as shown by Table 5.3, is interesting. Coefficients of corporate tax rate difference are robust in all models; reflecting that there is no downward bias for the basic regression model (Table 5.1). The semi-elasticity is ranging from -0.011 (in EBIT) to -0.013 (in pre-tax level) and significant at 1%. All control variables, namely: GDP per capita, cost of employees and fixed asset also showed similar sign and significance with the basic regression result.

In EBIT level, coefficient for availability of transfer pricing rules is small and not significant. On the other hand, tax effectiveness variable is large and significant at 1%, as shown in column (2) and (3) of Table 5.3. The coefficient sizes of tax effectiveness are getting higher when I used pre-tax profitability as dependent variable (column (5), (6), (8) and (10)). These figures confirm that tax effectiveness is very much important to combat profit shifting strategies.

In pre-tax level, the availability of interest limitation rule is significant in all models and showed positive sign (column (7) to (10)). This is not the case for availability of transfer pricing rule, which are not significant when I include variable of tax effectiveness into the models. Moreover, all coefficients of availability transfer pricing rule are smaller than the coefficients of availability interest limitation rules. The result could be an indication that the transfer pricing rule is more dependent with the enforcement of tax authority (how effective collection of taxes). Arm's length principle as the fundamental framework of transfer pricing rules requires more capability and discretion of tax authority to assess any transactions between related parties. Meanwhile, the features of automatic ratio in interest limitation rules are more independent to the capability of tax authority.

Table 5.4 – The Power of Effectiveness to the Application of Anti-Avoidance Rules

The Law	Only if Available		With Effectiveness		Growth of Profit Shifting Reduction
	Coefficient	Reduce Profit Shifting to	Coefficient	Reduce Profit Shifting to	
TP rules	0.131	10.9%	0.440	36.7%	25.8%
IL rules	0.263	21.9%	0.425	35.4%	13.5%
All rules	0.394	32.8%	0.865	72.1%	39.3%

Note: TP = transfer pricing; IL = interest limitation.

Furthermore, with the result in column (9) Table 5.3 and column (5) in Table 5.1, we can make comparison on the role of anti-avoidance rule with and without interaction of tax effectiveness at pre-tax level. In column (9) of Table 5.3, the coefficients of availability transfer pricing rules, interest limitation rules and aggregate of those two are: 0.131, 0.263 and 0.394. These are smaller to coefficients of effectiveness transfer pricing rules, interest limitation rules and aggregate of those two: 0.440, 0.425 and 0.865.

The effectiveness of anti-avoidances also has a larger impact to reduce profit shifting strategies, by comparing the coefficient of disincentive with incentive, (γ_2/γ_1). As shown by Table 5.4, enacted transfer pricing rules will only reduce profit shifting to 10.9% but after tax authority enforce the rules it can reduce profit shifting to 36.7%, or there is an additional impact around 25.8%. On the other hand, if the government launched interest limitation rule it can reduce profit shifting to 21.9% and increase to 35.4% after there is an effort to enforce the rule.

Based on Table 5.4, there are important information which are relevant to the effectiveness of anti-avoidance rules. First, without enforcement, transfer pricing rules is not very powerful to combat profit shifting, compare to interest limitation rules (10.9% < 21.9%). But the situation will turn around if enforcement takes places (36.7% > 35.4%). Second, the growth of profit shifting reduction is higher for transfer pricing rules, compared to interest limitation rules (25.8% > 13.5%). These outcomes support the idea that the transfer pricing rules are difficult and not simple to implement in developing countries. In the end, there should be a distinction between enacting rules in one hand, and having the capacity to apply the rules on the other hand.[284]

5.2.3. Endogeneity Problem

The basic assumption of the model in this thesis is that any tax policy, either corporate tax rate or anti-avoidance is exogenous to the reported profit. But, the situation might be different in the real world, especially for developing countries. The needs of revenue from taxation could motivate government to gain more money from corporations if the government feel that there is extraordinary income or windfall profit on corporate's hands, let say from the rise of commodity prices. Profit level of multinational enterprise could be a strong argument for government to increase corporate tax rate. Therefore, there is potential endogeneity problem for the variable of corporate tax rate difference that could lead to a downward bias of the coefficients.[285]

Table 5.5 – Exogeneity Test of the Basic Regression Models

Dependent Variable	Model in Table 5.1	P-value from Exogeneity Test
EBIT	(1)	0.9063187
	(2)	0.7960288
Pre-tax Profitability	(3)	0.8491476
	(4)	0.8416645
	(5)	0.7332994
	(6)	0.7315474

[284] Carmel Peters, "Developing Countries' Reactions to the G-20/OECD Action Plan on Base Erosion and Profit Shifting," *Bulleting of International Taxation,* Vol. 69, No. 6/7 (2015).

[285] See Harry P. Huizinga and Luc Laeven, "International Profit Shifting within Multinationals: A Multi-country Perspective," *Journal of Public Economics,* Vol. 92, Issues 5-6 (2008): 1176.

In order to correct this bias, I used exogeneity test of the basic model by followed approach from Davidson-MacKinnon (1993).[286] First, I replaced the potential endogeneity variable, corporate tax difference, with population difference as instrument variable for regression in Table 5.1 columns (1) to (6). Second, the residual result (error) from the regression with IV on the first step will be used as one of the variable in basic regression model in Table 5.1. Finally, as I only focus to the significance result of the regressions on the second stage, the p-value for was critical.

P-values for six basic regression models are showed in Table 5.5, ranging from 0.73 to 0.91. Since the p-values > α either at 0.01, 0.05, or 0.1 (significance level), then the null hypothesis cannot be rejected. According to this exogeneity test, there is no proof to treat corporate tax difference as endogenous variable. Reported profits do not have causality effect to corporate tax policy.

5.3. Dominant Strategy and the Magnitude of Profit Shifting

The above empirical result is valuable for extension. Referring to the Heckemeyer and Overesch (2013), such information can be used to find the favourable strategy in profit shifting: financial or non-financial technique. In this thesis, I assumed that non-financial technique is limited to transfer price manipulation only, while financial technique refers to debt shifting activity, as already explained on Chapter 2 and 3. Furthermore, with the information on semi-elasticity of profit shifting with regards to corporate tax rate difference and anti-avoidance rules, I will relate this to the discussion on the trend of profit shifting magnitude. This will involve a comparison of previous empirical studies.

5.3.1. Dominant Profit Shifting Strategy

The aggregate magnitude of profit shifting strategies can be used as information for government's policy formulation. Yet, which one is more dominating is not clear. Do multinational enterprises shift their profit through financial technique more often than non-financial technique, or the other way around? Measuring the dominant channel may require more detailed data and increase potential overlapping.[287] According to Heckemeyer and Oeversech (2013), since the coefficient of tax rate difference to EBIT and pre-tax profitability are known, there is possibility to disaggregate financial and non-financial technique of profit shifting.

At the pre-tax profitability level, the coefficient of tax rate difference is 1.2 and this involves both financial and non-financial techniques. Further, coefficient at the EBIT level is only 1.0. With regards to the fact that non-financial technique -that is debt shifting- does not exist at EBIT level; the total profit shifting strategy in EBIT level could only rely on non-financial technique, which is transfer price manipulation. But this does not mean that the share of transfer price manipulation to total profit

[286] As already explained on chapter 4.

[287] OECD, "BEPS Action 11: Improving the Analysis of BEPS", *BEPS Public Discussion Draft* (16 April – 8 May 2015), 65.

shifting is simply 83% (= 1.0 / 1.2). Semi-elasticity of 1.0 in EBIT level (γ_{1EBIT})[288] is 100% of non-financial technique and might be decrease with the existence of financial technique at the pre-tax profitability level (no longer 100%). Thus, the share will much depend on the proportion of EBIT to pre-tax profitability and calculate with formula = $\left(\gamma_{1EBIT} \times \frac{EBIT}{Pre{-}tax\ profit}\right)$.

However, the proportion between EBIT and pre-tax profit could also be derived from information on coefficient of effectiveness of transfer pricing rule, since it is available at EBIT and pre-tax level ($\frac{EBIT}{Pre{-}tax\ profit} = \frac{\gamma_{2TP\ EBT}}{\gamma_{2TPEBIT}}$).[289] As from table 5.1 column (2) and (5), the coefficients are 0.393 at EBIT level and 0.440 at pre-tax level. With regards to the constant proportion of EBIT to pre-tax, I can predict the proportion of EBIT to pre-tax profitability was 1.1195 (= 0.440 / 0.393). In other words, on average, all sample have the EBIT exceeds pre-tax profitability around 12%. This is somewhat smaller than the average proportion for all firms in S&P 500 in 2011, around 25%. However, since the distance between those is not wide, there is also possibility that the capital structure for subsidiaries in developing countries are different with the multinational enterprises that listed in S&P500.

Table 5.6 – Dominant Profit Shifting Strategy

Shifting Techniques	Semi-elasticity of		Share of Underlying Technique in Total Response
	EBIT	Pre-tax Profit	
All	-	1.200	100%
Non-financial	1.000	1.120	93%
Financial	-	0.080	7%

From the information on proportion of EBIT and pre-tax profit, the γ_{NF} or the semi-elasticity of non-financial technique (transfer price manipulation) is 1.12 (= 1.0 * 1.1195). With the aggregate semi-elasticity of tax rate difference to pre-tax profit to be 1.2 and for non-financial of 1.12, then the semi-elasticity of financial technique for pre-tax profit should be the residual, 0.08. Approximate value of semi-elasticity is very useful to calculate how much the share of each technique to all profit shifting activities is. If aggregate semi-elasticity of all technique (1.2) is 100%, then the share of non-financial technique, i.e. transfer price manipulation will be 93% (= 1.12 / 1.2) and share of financial technique, i.e. debt shifting is 7% (= 0.08 / 1.2).

The domination of non-financial technique with transfer price manipulation as favourable strategy (see Table 5.6) for multinational enterprise that operates in developing countries is interesting. This figure is similar with findings by Heckemeyer and Overesch (2013), that non-financial technique plays important role for profit shifting activities. However, they found that financial technique accounted for 28%, 4 times higher than the result on this thesis. This might be driven by several factors.

[288] See Table 5.1, column (2).

[289] $\gamma_{2TP\ EBT}$ stands for coefficient of effectiveness transfer pricing rule at pre-tax profitability level, while $\gamma_{2TPEBIT}$ at EBIT level. The values are based on Table 5.1, column (2) and (5).

Firstly, economic environment (infrastructure and governance) in developing countries is less pro with the business activity. Therefore, unsurprisingly, the multinational enterprise tends to set up their subsidiaries in developing countries to perform limited function and give low value added to group's global value chain. The argument is also in-line with Caves who argued that general characteristic of multinational enterprise in developing countries usually consists of: exporter of raw materials, manufacturer with low value added, and distributor for domestic market. Furthermore, business expansions for subsidiaries in developing countries are relatively slow and they require less capital funding. The coefficient of GDP per capita to reported profit also supported the argument, that the rise of economic level will contribute to the increasing EBIT but not to the pre-tax profitability (pre-tax profitability contains interest expense or revenue). Therefore, as economic level and market size is bigger, the demand for intercompany loan will rise.

Secondly, majority of technology and knowledge is held by multinational enterprise in developed countries whereas research and development activities in developing countries are rarely found. From this perspective, transfer and lease of intangibles and technical services to subsidiaries in developing countries are very intense and open an opportunities to manipulate the 'price' and substance of the transactions. Intangibles and services could be considered as specific transaction in transfer pricing, which is more difficult to assess by tax authority.

Thirdly, the arm's length principle –as the main principle to assessed transfer pricing- in developing countries is very hard to apply in practice, especially with the low capacity of tax administration. Further, arm's length principle also assumed that open market provides comparables for any controlled transaction, which is not true especially with the bad record of economic activities in developing countries. On the other hand, interest limitation rule with reliance to automatic formula (debt to equity ratio) is easier to apply. Thus, domination of transfer price manipulation (non-financial technique) is understandable.

5.3.2. Magnitude of Profit Shifting

It is interesting to compare my result with previous findings on magnitude of profit shifting, as measured by coefficient of corporate tax rate difference to reported profit. Although the regression result of this study is not comparable –concerning the methodology, period of analysis, scope of analysis, countries coverage, level of profit and others-, it seems that the results are similar. Table 5.6 comprise the results of previous empirical studies.

The highest magnitude of profit shifting was found by Hines and Rice (1994) who made an analysis by using data from 1982 period; while the smallest magnitude based on Lohse and Riedel (2013). Taking into account the semi-elasticity of profit shifting from corporate tax rate difference as the magnitude of profit shifting, my result is still within the range; either when I include variable of anti-avoidance rules ($0.4 > 1.2 > 2.3$) or not ($0.4 > 1.1 > 2.3$).

Table 5.6 – Comparison on Magnitude of Profit Shifting

	Study	Scope of Analysis	Period of Analysis	Result
1	Hines and Rice (1994)	US multinationals (pre-tax profit)	1982	2.3
2	Huizinga and Laeven (2008)	European multinationals (EBIT)	1999	1.3
3	De Mooij and Ederveen (2008)	Estimation on Europe based on average previous empirical studies before 2005 (various levels and forms)*	Before 2005	1.2
4	Heckemeyer and Overesch (2013)	Consensus estimate (various levels and forms)*	Before 2013	0.8
5	Dischinger (2010)	European affiliates (pre-tax profit)	1995 - 2005	0.7
6	Dischinger, Knoll, and Riedel (2014)	European multinationals, only between parent and their low-tax affiliates (pre-tax profit)	1995 - 2005	0.5
7	Lohse and Riedel (2013)	European multinationals (EBIT)	1999 - 2009	0.4

Note: *) meta-analysis based on various studies that used EBIT, pre-tax profit, EBIT/asset, etc. as dependent variable.

Sources: James R. Hines, Jr. and Eric M. Rice, "Fiscal Paradise: Foreign Tax Havens and American Business", *The Quarterly Journal of Economics* Vol. 109, No. 1 (1994): 149-182; Harry P. Huizinga and Luc Laeven, "International Profit Shifting within Multinationals: A Multi-country Perspective", *Journal of Public Economics* Vol. 92 (2008): 1164 – 1182; Ruud A. de Mooij and Sjef Ederveen, "Corporate Tax Elasticities: A Reader's Guide to Empirical Findings", *Oxford Review of Economic Policy,* Vol. 24, Number 4 (2008): 680 – 697; Jost H. Heckemeyer and Michael Overesch, "Multinational's Profit Response to Tax Differentials: Effect Size and Shifting Channels", *ZEW Discussion Paper* No. 13-045, (2013); Matthias Dischinger, Bodo Knoll and Nadine Riedel, "The Role of Headquarters in Multinational Profit Shifting Strategies", *International Tax and Public Finance* 21 (2014): 248 – 271; Matthias Dischinger, "Profit Shifting by Multinationals: Indirect Evidence from European Micro Data", *Discussion Paper*, Ludwig-Maximilians University Munich; Theresa Lohse and Nadine Riedel, "Do Transfer Pricing Laws Limit International Income Shifting? Evidence from European Multinationals", *CESifo Working Paper* No. 4404 (2013).

Comparison of empirical studies also gives an indication that the magnitude of profit shifting was decreasing across time. As Table 5.6 shows that all recent studies with period of analysis after year 2000 have magnitude < 1. Dharmapala argued that it is probably because of the spread of transfer pricing and thin capitalisation rules in global world.[290] In other words, the sensitivity of corporate tax rate (difference) is probably lessened and disincentives to have profit shifting are stronger. The evidences for European multinationals during 1999-2009 could be relevant, since the sensitivity of operating profits to corporate tax rate decreased by 0.18 annually.[291]

The trend is contrast with my findings and did not accordance with public perception that problem of profit shifting have developed over time, especially for the last decade.[292] It is true that the growing concern on profit shifting was initiated by fiscal problems in most of developed countries where the governments tried to scrutinize all potential tax erosion. However, several empirical studies supported

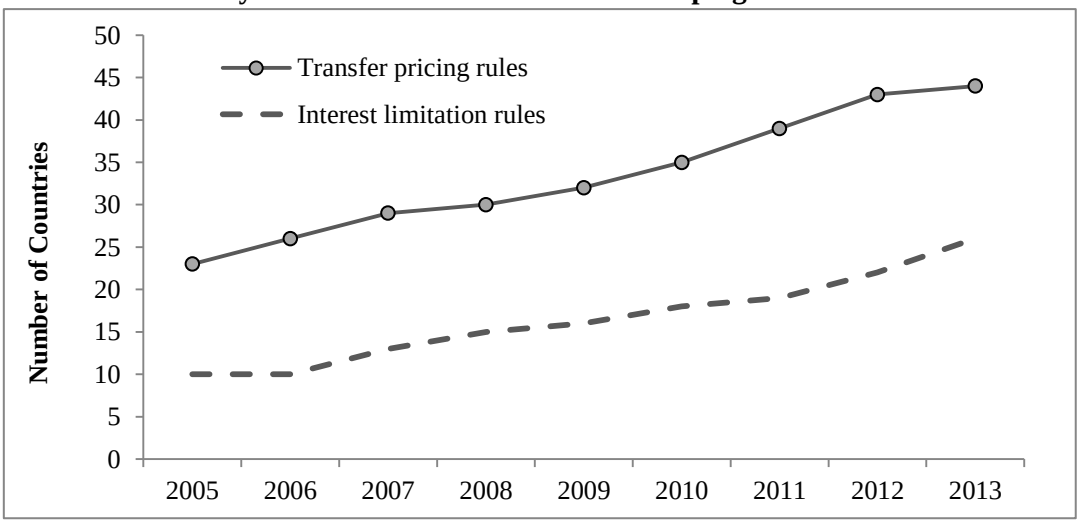
[290] Dhammika Dharmapala, "What Do We Know About Base Erosion and Profit Shifting? A Review of the Empirical Literature", *Coase-Sandor Institute for Law & Economics Working Paper*, No. 702 (2014): 18.

[291] Theresa Lohse and Nadine Riedel, "Do Transfer Pricing Laws Limit International Income Shifting? Evidence from European Multinationals", *CESifo Working Paper* No. 4404 (2013): 10-11.

[292] See Chapter 2 and 3 for trend on public awareness to profit shifting.

the argument that profit shifting has grown over time.[293] Among others, global financial crisis also contributes to the rise of aggressive tax planning.[294]

Figure 5.2 – Availability of Anti-Avoidance Rules in Developing Countries Increased Overtime



Note: survey in 66 developing countries
Sources: IBFD Corporate Income Tax Survey and various reports from KPMG, Deloitte, PwC and EY.

Moreover, if I consider the argument from Dharmapala; the high magnitude of profit shifting in developing countries is something that is reasonable. Although they already have either transfer pricing rules and interest limitation rules on their tax law (see Figure 5.2); but the effectiveness is still questionable. From robustness check, the strength to reduce profit shifting strategies depends on tax administration system and how to collect taxes. Yet, the fact that tax effectiveness (as measured by regulatory quality) in developing countries is smaller than developed countries ($0.46 < 0.84$) validate my findings.[295]

To mediate the conflicting result of time-series studies, I rerun the basic regression models in Table 5.1 with three additional variables that interaction between predictor variables and time, as emphasized on Chapter 4. At EBIT level, the sensitivity of corporate tax rate difference is decreased during 2005-2013 by 0.1 points annually as shown by column (1) in Table 5.7. Meanwhile, the result at pre-tax level is unclear. When I did not include variables of anti-avoidance rules or only include transfer pricing rules, the sensitivity did not change overtime. However, when I include both anti-avoidance rules or just interest limitation rule, the sensitivity is increased by 0.1 point. It can be

293 See Harry Grubert, "Foreign Taxes and the Growing Share of U.S. Multinational Company Income Abroad: Profits, Not Sales, Are Being Globalized," *National Tax Journal,* Vol. LXVI, No. 4 (2012): 247-281; or Kenneth J. Klassen and Stacie Kelley Laplente, "Are U.S. Multinational Corporation Becoming More Aggressive Income Shifters?" *Journal of Accounting Research,* Vol. 50, No. 5 (2012): 1245-1286.

294 See Grant Richardson, Roman Lanis and Grantley Talyor, "Financial Distress, Outside Directors and Corporate Tax Aggressiveness Spanning the Global Financial Crisis: An Empirical Analysis," *Journal of Banking & Finance,* Vol. 52 (2015): 112-129; and Grant Richardson, Grantley Taylor and Roman Lanis, "The Impact of Financial Distress on Corporate Tax Avoidance Spanning the Global Financial Crisis: Evidence from Australia," *Economic Modelling,* Vol. 44 (2015): 44-53.

295 The samples are: 108 developing countries and 43 developed countries. Data is taken from Global Insight as explained on Chapter 4.

concluded that the sensitivity of corporate tax rate difference is decreased in EBIT but increased in pre-tax profitability.

Table 5.7 – Regression Model with Multiplication between Predictor Variables and Time

Independent variable	Dependent Variable					
	EBIT		Pre-tax profitability			
	(1)	(2)	(3)	(4)	(5)	(6)
Tax rate difference * time	0.001***	0	0	-0.001*	-0.001	0
	(0)	(0)	(0)	(0)	(0)	(0)
TP rule effectiveness * time		-0.019***			0.056***	-0.017**
		(-0.01)			(-0.01)	(-0.01)
Interest limitation rule effectiveness * time				-0.044***	-0.093***	
				(-0.01)	(-0.01)	

Note: all variables in basic regression models: corporate tax rate difference, cost of employees, GDP per capita, fixed asset, country dummy, effectiveness of transfer pricing rules and interest limitation rules are also involved but not shown in the table. Numbers in parenthesis show the standard error. ***, ** and * denotes significance level at 1% ($p < 0.01$), 5% ($p < 0.05$), and 10% ($p < 0.1$).

On the other hand, the sensitivity of transfer pricing rules' effectiveness decreased by 0.02 point overtime either in EBIT level (column (2)) or in pre-tax level (column (6)). However, if a country has both transfer pricing rules and interest limitation rules in their tax law, the sensitivity for transfer pricing rules increased to 0.06 point annually. Furthermore, the sensitivity for interest limitation rules decreased overtime ranging from -0.05 to -0.09, annually. Please note that in general the coefficient for corporate tax rate difference and anti-avoidance rules are not stable. Quantifying reliable effect of the sensitivity for each variable on profit shifting can be the subject of further research.

5.4. Policy Options and Relevance of BEPS Project

The empirical work of this thesis is centred at the corporate tax rates and anti-avoidance provision in the context of profit shifting. But how could this be useful as ingredient for tax policy in developing countries? I will discuss those elements with regards to tax situation in developing countries and current development on BEPS project or other documents produced by multilateral organisation.

5.4.1. Improving Data, Methodology and Analysis of Profit Shifting

Before entering the discussion on corporate tax policy and anti-avoidance rule, it is important to highlight the research methodology to quantifying profit shifting in this thesis. For most policy makers in developing world, profit shifting is just like a myth, knowing for the existence without knowing the causes, magnitude, pattern, and its impacts. They might use irrelevant data or misinterpreted various indicators as a justification of profit shifting activity.[296] With concern of such

[296] For instance, in China. Although they have developed comprehensive and systematically approach, there is a tendency to treat any unusual profit as indication of BEPS. See "Comments from China on the Request for Input (FRI) on BEPS

problem, OECD and G-20, via their BEPS project, aim to establish methodologies and data on base erosion and profit shifting as contained on Action Plan No 11:

> *Establish methodologies to collect and analyse data on BEPS and the actions to address it. Specifically to: Develop recommendations regarding indicators of the scale and economic impact of BEPS and ensure that tools are available to monitor and evaluate the effectiveness and economic impact of the actions taken to address BEPS on an ongoing basis. This will involve developing an economic analysis of the scale and impact of BEPS (including spillover effects across countries) and actions to address it. The work will also involve assessing a range of existing data sources, identifying new types of data that should be collected, and developing methodologies based on both aggregate (e.g. FDI and balance of payments data) and micro-level data (e.g. from financial statements and tax returns), taking into consideration the need to respect taxpayer confidentiality and the administrative costs for tax administrations and businesses.*[297]

In April 2015, OECD has released discussion draft on BEPS Action 11. The draft presents an initial assessment of current available data, recommendations for indicators that can capture the effect of profit shifting, and overview to the methodology on economic analysis.[298] I put some comments on the draft based on the methodology in this thesis.

Firstly, according to OECD BEPS Action 11 Discussion Draft, data for analysing base erosion and profit shifting should have the following criteria: (i) coverage; (ii) usefulness for separating real economic effect from tax effects; (iii) ability to focus on specific activity; (iv) level of detail; (v) timeliness; and (vi) access.[299] In this thesis, although not explicitly stated, I have considered most of the criteria because each of those has implication on reliability of the result. Based on those criteria, I used micro framework with firm's financial statement as unit of analysis.

Commercial database that contains financial information of firm could considerably become the best source of micro analysis, since it has advantage from its coverage. However, commercial database, although very promising, is not cheap and most of them have limited information on firms in developing countries. The commercial database, for instance ORBIS and other product from Bureau van Dijk, only provide rich information on several developing countries, such as: China, India, or emerging economies in Europe. Moreover, as pointed on Chapter 4, not all firms own complete information on financial indicator or other firms' information. For instance, the sample from China is reduced by almost 100% because information on cost of employees are not available for majority of the firms. Therefore, empirical study using commercial database that requires much information on firms in developing countries can be frustrating and can resulting in unbalanced distribution of data.

Action 11" in *Comments Received on Public Discussion Draft BEPS Action 11: Establish Methodologies to Collect and Analyze Data on BEPS and the Actions to Address It,* (OECD, 7 October 2014), 101 – 106.

297 OECD, *Action Plan on Base Erosion and Profit Shifting* (Paris: OECD Publishing, 2013), 21 – 22.

298 OECD, "BEPS Action 11: Improving the Analysis of BEPS", *BEPS Public Discussion Draft* (16 April 2015): 3.

299 OECD, "BEPS Action 11: Improving the Analysis of BEPS", *BEPS Public Discussion Draft* (16 April 2015): 6 – 9.

From government's point of view, they have the ability to access micro data from tax return or customs data in order to measures profit shifting activities. However, custom data is more relevant for physical goods, whereas today's profit shifting is more complex and does not always deals with sales and purchase of commodities. It would be better if government can combine information on corporate tax return and financial information in order to track all fiscal activity, and at the same time assess financial performance of the firm. Yet, since potential deviation between tax accounting and commercial accounting exists, careful measures should be taken into account for any effort to connect them. Other option is to develop new specific database that contain financial and tax information (or any information that could relevant to detect profit shifting behaviour). Experiences in the U.S. or Germany and how their database (Bureau of Economic Analysis data and German Bundesbank MiDi database) can help the government in policy formulation could be considered.

Secondly, estimation should consider the sensitivity of tax policy to other economic activities. Basically, tax policy can influence: (i) real economic activity which is not categorized under BEPS activities; and (ii) BEPS-related activities across countries that include financial, shifting profit, restructuring, and others.[300] In practice, it is very difficult to disaggregate between those two, because it is very rare to have specific tax factor that could only induce profit shifting and not real economic activity. The problem could be traced in very fundamental issue (that the taxation is also one of the business economic factors) or in more sophisticated way (such as how capital investment is responsive to effective tax rate, but later pricing strategy is responsive to statutory tax rate). Many of empirical studies, including this thesis, are also less successful to convince readers that the change in reported profit simply can be considered as profit shifting (although already include many control variables). The empirical results of the so-called magnitude of profit shifting, therefore, are potentially biased. Nevertheless, one thing that should be addressed is that with the availability more data or indicators in the future, quantifying the real profit shifting impact is not impossible.[301]

Thirdly, the effectiveness of anti-avoidance rule. The Public Discussion Draft did not discuss any tools to monitor or evaluate the effectiveness of any actions taken to address BEPS, i.e. anti-avoidance rule. Working Party No. 2, as the appointed drafter on this action are still waiting for stakeholder and public input on this matters.[302] However, the documents were mentioned in the terminology of 'BEPS countermeasures' for many times, largely in the context of 'data to measuring BEPS and BEPS countermeasures'. As far as I am concerned, there is no further explanation on methodology to quantify the effectiveness of them. This thesis, therefore, could be an important source for further empirical studies on the effectiveness of anti-avoidance rule. Moreover,

300 OECD, "BEPS Action 11: Improving the Analysis of BEPS", *BEPS Public Discussion Draft* (16 April 2015): 7.

301 According to the OECD, this will be achieved at the 'ideal' situation, a situation where the data for measurement of BEPS and its countermeasures are available.

302 OECD, "BEPS Action 11: Improving the Analysis of BEPS", *BEPS Public Discussion Draft* (16 April 2015): 3.

effectiveness of anti-avoidance rule will also depend on the enforcement, regulatory quality, and capability of tax administration (which is measured as tax effectiveness in this thesis).

5.4.2. Tax Rates Policy as Multilateral Consensus?

The significance of corporate tax rate difference as incentive to profit shifting has been noticed by policy makers in developing world. Unsurprisingly, therefore, there were intense discussions to reduce corporate income tax rate at least as close (competitive) as rate of economic partner's country.[303] This yardstick competition is not new and creates winners and losers.[304] Furthermore, in global world, as long as there is single country act as an outlier (offers lower tax rate), the problem of profit shifting could not be eliminated.

To solve this problem, IMF proposed multilateral consensus by setting minimum corporate tax rates. As IMF argued, the minimum tax "… have proved both useful and practicable in protecting domestic tax bases, and might also be addressed to combating aggressive international tax planning in relation to inward investment." However, this is not an easy task, especially for developing countries that still need funding for their economic development. Furthermore, the world is a place for heterogeneous set of countries. It means that each country has various fiscal objectives, economic level, and therefore has different preferences.[305] Is it possible to involve all of them into one framework?

With reference to the idea of the dilemma on the formation of international union[306], minimum (harmonization) of corporate income tax rate could be possible as long as the framework of multilateral cooperation formed in more loose (flexible) way. The framework should still give more fiscal room to each country in setting their own tax policy (tax sovereignty into some degree). If this 'fiscal room' is not available, only countries with similar preference with majority of 'member' will be able to enter the multilateral cooperation. But again, on what rate the minimum tax rate could offer some flexibility and fiscal room? It is debatable.

From the previous explanation, it could also be predicted that tax harmonization is hard to implement. With the heterogeneity of preferences across countries, I think the idea of minimum tax rate (and even tax base) should be put into pessimistic view. The lesson from experiences of multilateral tax cooperation in specific regions is in favour of this doubtful. For instance, the experience in West African Economic and Monetary Union (WAEMU) has proved that regional coordination would be justified if the set of countries in the region are more integrated among each other, but relatively

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303 For instance, recently there is a discourse in Indonesia on reduction of corporate tax rate to near Singapore. This is concerning the effort to combat transfer price manipulation. See Neil Chatterjee, Rieka Rahadiana and Fathiya Dahrul, "Indonesia to Gradually Cut Corporate Tax Rate to Below 18%", *Washington Post*, May 11, 2015. Available online at: http://washpost.bloomberg.com/Story?docId=1376-NO5XVO6JIJUO01-19FRHPMI14S4QL3L7H22FN35FN

304 The yardstick competition relates to the tax-mimicking hypothesis.

305 Ravi Kanbur and Michael Keen, "Jeux Sans Frontières: Tax Competition and Tax Coordination When Countries Differ in Size," *The American Economic Review*, Vol. 83, No. 4 (1993): 890 – 891.

306 See Alberto Alesina, Ignazio Angeloni, and Federico Etro, "International Unions," *The American Economic Review*, Vol. 95, No. 3 (2005): 602-615.

closed vis-à-vis the rest of the world.[307] In EU, the idea of formulary apportionment as one of the important elements in Common Consolidated Corporate Tax Base (CCCTB) receives many discord and refusal.[308]

In order to ensure achievement of global neutrality, the idea of multilateral action requires participation from all countries and large scope of tax instruments. Subset of countries (small size) means partial neutrality, and, on the other hand, subset of instruments (small scope) will put more pressure on the instruments which are not coordinated.[309]

Therefore, the scope of multilateral framework will influence the size of cooperation, thus determines the possibility to achieve global neutrality. In a short, global neutrality could be achieved as long as the multilateral cooperation only arranges a small scope of tax policies. The balance between size and the scope should be thought by the global tax stakeholders. OECD and G-20 seemed to notice the dilemma. Rather than to promote any tax rate harmonization on their BEPS project, they only endorse multilateral cooperation in tax matters, especially to modify bilateral tax treaties.[310]

5.4.3. Transfer Pricing Policy

The domination of non-financial technique, e.g. transfer price manipulation, was alarming for governments in developing countries. There is an urgency to have transfer pricing rule in their domestic tax law. Nevertheless, transfer pricing rule which originated from the arm's length principle contained conceptual and practical shortcomings. While the first discusses about inability of arm's length principle to 'capture' advantages of integrated business of multinational enterprise; the second highlights the impact of the principle to uncertainty, disputes, administrative burden, failure to solve economic double taxation and constraint for global trade.[311]

The first argument cannot be separated from the theory of formation of multinational enterprise.[312] With regards to arm's length principle, the question would be: if the objective of formation of multinational enterprise is to have synergy effect from integrated business and at the same time creates internal market to solve market uncertainty (failure), why do they, next, have to compare

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307 Leonce Ndikumana "International Tax Cooperation and Implications of Globalization," *PERI Working Paper Series*, No. 355 (2014): 15.

308 Comprehensive assessment on the (dis)unanimity of CCCTB could be found at Christoph Spengel et al., "A Common Corporate Tax Base for Europe: An Impact Assessment of the Draft Council Directive on a CC(C)TB," *World Tax Journal*, Vol. 4, No. 3 (October, 2012): 185 - 221; and Ronald Russo, "CCCTB: General Principles and Characteristics," in *CCCTB: Selected Issues*, ed. Dennis Weber. (Alphen ad Rijn: Kluwer Law International, 2012), 66-77.

309 IMF. "Spillovers in International Corporate Taxation", *IMF Policy Paper* (2014): 44.

310 See OECD, *Developing a Multilateral Instrument to Modify Bilateral Tax Treaties*, OECD/G-20 Base Erosion and Profit Shifting Project. Paris: OECD Publishing, 2014

311 David L.P. Francescucci, "The Arm's Length Principle and Group Dynamics – Part 1: The Conceptual Shortcomings," *International Transfer Pricing Journal*, Vol. 11, No. 2 (2004): 55.

312 See John Dunning, *Multinational Enterprises and the Global Economy* (Reading: Addison-Wesley, 1993).

themselves with independent enterprise? [313] Such conceptual shortcoming also creates difficulties to find 'the exact comparables' at the practical level. [314]

Moreover, the drawback might be devised from the characteristic of arm's length principle as a standard-based and not rule-based law.[315] Standard is abstract/non-figurative and gives uncertainty to the taxpayers, because no referred action or level should be complies. Therefore, standard-based will creates disputes and multi-interpretation on acceptable action. The cost to formulate a standard-based law product is cost efficient but increases at the application (compliance and administrative cost). Moreover, the application of standard-based law requires strong capability of the authority -including good administration system and quality of human capital-, because they will be the authorized person to evaluate and determine 'the exact level of standard' in case-by-case basis.[316] With concern to the implications of standard-based law and the environment, arm's length principle is not applicable for developing countries.

Another alternative to solve transfer pricing problem is global formulary apportionment. Discussions to replace the arm's length principle with global formulary apportionment are never ending.[317] The global formulary apportionment is a method to allocate multinational enterprise profit with integrated approach; there will be one consolidated profit that will be apportioned based on specific formula. The formula usually comprises combination of 3 factors in agreed weight: sales (S), labour (L), and asset (K).[318] Global formulary apportionment is believed to be able to give more certainty; reduce compliance and enforcement cost; avoid double taxation; endorse fairer share; and diminish profit shifting opportunity. [319]

However, the advantages of global formulary apportionment can only be realized in two fundamental criterions. First, regardless to certainty effect, fair share allocation of profit will much depends on

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313 The US Treasury Department also raised the conceptual and practical shortcomings of arm's length principle in 1980's: *"...if multinational corporations are able to produce at lower cost, then in the long run it should be difficult for the smaller companies to continue in existence. Therefore, arm's length prices may be unavailable. An appropriate transfer pricing result will be achieved if each related party were assigned the income that the corresponding unrelated party would earn, if the latter were using the efficient cost structure. Microeconomic theory leads to an unambiguous and natural statement of what the income of unrelated parties should be in these circumstances."* See U.S. Treasury Department, *A Study of Intercompany Pricing under Section 482 of the Code 1988-2 C.B. 458*, (1988), 83.

314 Hubert Hamaekers, "Arm's Length – How Long?" *International Transfer Pricing Journal*, Vol. 8, No. 2 (2001): 34.

315 Eduardo Baistrocchi, "The Transfer Pricing Problem," in *Resolving Transfer Pricing Disputes: A Global Analysis*, eds. Eduardo Baistrocchi and Ian Roxan (Cambridge: Cambridge University Press, 2012), 17-18. Baistrocchi influenced by Louis Kaplow who made an analysis about the implication of rule-based vs. standard-rule law. See Louis Kaplow, "The Value of Accuracy in Adjudication: An Economic Analysis," *Journal Legal Studies*, Vol. 23, No. 1 (1994): 307-401; and Louis Kaplow, "Rules vs. Standards: An Economic Analysis," *Duke Law Journal*, Vol. 42, No. 557 (1992): 557-629.

316 Eduardo Baistrocchi, "The Transfer Pricing Problem: A Global Proposal for Simplification," *Tax Lawyer*, Vol. 59, No. 4 (2005): 944.

317 See Alex Cobham and Simon Loretz, "International Distribution of the Corporate Tax Base: Implications of Different Apportionment Factors under Unitary Taxation," *ICTD Working Paper*, 27, (2014); and Michael C. Durst, "The Tax Policy Outlook for Developing Countries: Reflections on International Formulary Apportionment," *ICTD Working Paper*, 32 (2015).

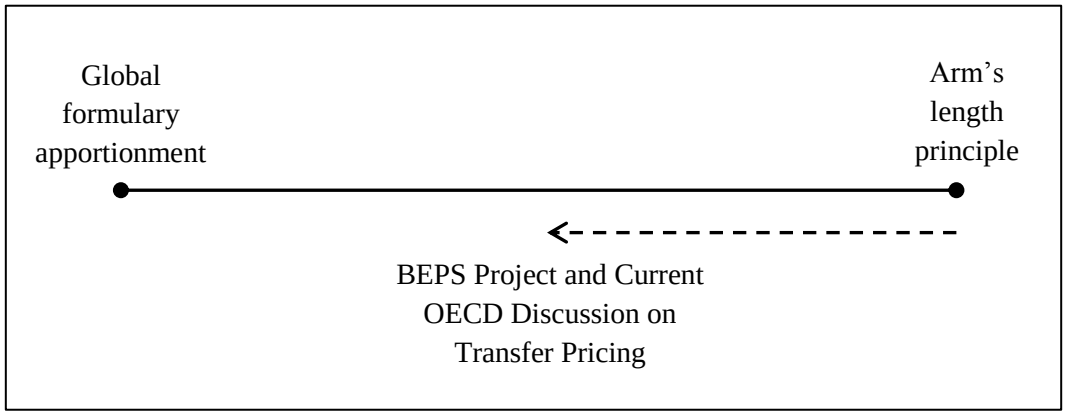
318 The base formula is: $T_i = t_i \times \pi \left[\alpha_i^K \times \frac{K_i}{K} + \alpha_i^L \times \frac{L_i}{L} + \alpha_i^S \times \frac{S_i}{S}\right]$.

319 Hagen Luckhaupt, Michael Overesch, and Ulrich Schreiber, "The OECD Approach to Transfer Pricing: A Critical Assessment and Proposal," in *Fundamentals of International Transfer Pricing in Law and Economics*, eds. Wolfgang Schon and Kai A. Konrad (Berlin: Springer, 2012), 107.

apportionment factors. Tax revenue across country is very sensitive to these factors and how they will be weighed.[320] This may create negotiation cost and involvement of political interest. Second, global formulary apportionment under no harmonisation of corporate tax rate will promote shifting in factor of productions, particularly for assets that can easily be transferred, such as patent. With these constraints, global formulary apportionment no longer has comparative advantages to arm's length principle. United Nations, as one of the major players in tax arena as conveyor of voice from developing countries, now is also standing at the position to defence the arm's length principle.[321]

With concern of the advantages and disadvantages of each system, OECD, for the last 3 years, revised the fundamental aspects of their transfer pricing guidelines. The revision is also in line with the OECD/G-20 project on BEPS, particularly on Action 8, 9, 10, and 13. There is a tendency that the (near) future arm's length principle is moving towards the feature of global formulary apportionment into certain degree. Several advantages of global formulary apportionment will be adopted under the 'new arm's length principle.

Figure 5.3 – Arm's Length Principle under BEPS Project and Current OECD Discussion on Transfer Pricing



There are several arguments to support this view. **Firstly**, since 2012 OECD initiated the project of simplification measures in transfer pricing. The project stands on the position that the application of arm's length principle should not increase compliance cost and administrative burden for the taxpayers. [322] Any thresholds for eligible taxpayers to submit documentation or safe-harbour measures (reference value that can be considered as arm's length value) are now acceptable and will be included on the revised version of the OECD Transfer Pricing Guidelines. It seems that the typical rule-based law is now considered.

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320 The definition of each factor is also crucial; therefore all countries should deal with the same tax base.

321 This could be seen at their manual on transfer pricing, "*Another principle…is global formulary apportionment (GFA)… However, such a system cannot operate at a global level, in a way that fully avoids double taxation, without prior agreement on a suitable uniform formula, which is yet to be achieved… This manual does not deal with the longer term advantages and disadvantages of any possible alternative ways of dealing with transfer pricing, including GFA*". See UN, *United Nations Practical Manual on Transfer Pricing for Developing Countries,* (New York: UN, 2013), 61 - 62.

322 The idea also supported by various tax stakeholders. See Michael C. Durst, "Pragmatic Transfer Pricing for Developing Countries," *Tax Notes International,* Vol. 65, No. 4 (2012): 249.

Secondly, the endorsement of profit split method. Profit split method is a merge concept of arm's length principle with formulary apportionment. [323] The application of profit split starts from combined profit of multinational enterprise (formulary apportionment features) and will be allocated based on their function, asset, and risk (arm's length feature). Profit split method is the only transfer pricing methods that can be apply in the case of no comparables but by assessment of the contribution of each entity within the value chain of multinational enterprise.[324]

Thirdly, more focus on value creation as stated in Action 8, 9, and 10 of BEPS. As a consequence, functional analysis and value chain analysis will play more important rule to allocate the profit. Again, value chain analysis is a tool to examine the contribution (value creation) of the entity within the multinational enterprise. Value creation also relates to the origin principle, where the substantial of economic-producing activity is take place, and ensure fairer share of profit across country.[325]

Fourthly, country by country reporting (CbCR). As emphasized on Chapter 2, separate accounting approach (arm's length principle) offers opportunity for the taxpayers to hide their income. In Action 13 of BEPS, OECD/G-20 promotes the modification of transfer pricing documentation into country-by-country reporting. The idea is to have transparency and allow tax administration in other jurisdiction to access financial information of their taxpayer's related party.

In conclusion, developing countries should consider the relevance of BEPS project and other OECD works on transfer pricing for their policy. The flexibility of the 'new' arm's length, adoption of some features of formulary apportionment and alignments to value creation will provide great benefits for developing countries. One have to bear in mind that the tighter transfer pricing rule can lead into more aggressive corporate tax rate competition and induce more countries to have residence based taxation (territorial tax system).[326]

5.4.4. Interest Limitation Rule

Although not a dominant profit shifting strategy, debt shifting could also erode tax base in developing countries. Several countries have enacted 'standard' interest limitation rule by applying fixed debt to equity ratio, interest to EBITDA, arm's length test, or in a more stylish way by putting provision on allowance for corporate equity in their tax system.[327] But, again, the issue in developing countries is to

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323 Brian E. Lebowitz, "Transfer Pricing and the End of International Taxation," *Tax Management Transfer Pricing Report*, Vol. 9, No. 61 (November 2000).

324 OECD, *OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations*, (Paris: OECD Publishing, 2010), Paragraph 2.119.

325 See Eric C.C.M. Kemmeren, *Principle of Origin in Tax Conventions: A Rethinking of Models* (Dongen: Mr. Eric C.C.M. Kemmeren/Pijnenburg vormgevers, 2001).

326 As proved by economic model by Johannes Becker and Clemens Fuest, "Transfer Pricing Policy and the Intensity of Tax Rate Competition," *Economic Letters*, Vol. 117, Issue 1 (2012): 146-148.

327 The underlying principle behind allowance for corporate equity (ACE) system is to eliminate the deductibility of actual interest payments and to replace it by an allowance of the normal return, applied to the book value of the entire firm's capital according to the tax accounts. Since 1996, Brazil have notional interest deduction regime as a structural part of their tax system that have closed characteristic with ACE. See Francesco Massimi and Carlo Petroni, "Real World ACE Reforms and the Italian Experience: Towards a General Trend," *Intertax*, Vol. 40, Issue 11 (2012): 641.

have the type of interest limitation rule which is the most effective with regards to their weak tax administration system. This is somewhat similar with the Action 4 of the Action Plan on BEPS project:

> *Develop recommendations regarding best practices in the design of rules to prevent base erosion through the use of interest expense, for example through the use of related-party and third-party debt to achieve excessive interest deductions or to finance the production of exempt or deferred income, and other financial payments that are economically equivalent to interest payments. The work will evaluate the effectiveness of different types of limitations. In connection with and in support of the foregoing work, transfer pricing guidance will also be developed regarding the pricing of related party financial transactions, including financial and performance guarantees, derivatives (including internal derivatives used in intra-bank dealings), and captive and other insurance arrangements. The work will be co-ordinated with the work on hybrids and CFC rules.*[328]

In order to propose reliable recommendation for policy makers in developing countries, first of all, I will describe the taxonomy of interest limitation rules:

(i) Rules which limit the level of interest expense or debt with specific reference point. Under this category there are fixed debt to equity ratio, interest to EBITDA ratio and interest to assets ratio.

(ii) Rules which compare the level of debt in an entity with reference to the group's overall position which often operate by reference to debt to equity ratio (worldwide group rule).

(iii) Targeted rules which disallow interest expense on specific transaction.

(iv) Arm's length test, which compares the interest or debt position with comparable companies.

(v) Withholding tax on interest payments.

(vi) Rules which disallow a percentage of the interest expense of an entity.

Selection of the best interest limitation rule should also consider the interaction of tax system across country. Otherwise, there are potential existence of the debt bias, double taxation, distortion on the capital market and macroeconomic stability.[329] Moreover, the application of selected rule should not increase either administrative cost (government's side) or compliance cost (taxpayer's side). In my opinion, developing countries should use the combination of fixed debt to equity ratio with the arm's length test. This suggestion has considered the following reasons.

Firstly, as proved on empirical study by Blouin et al. (2014), the interest limitation rules were more effective if referred to automatic formula. Although they did not mention which type of formula was the best, restriction on affiliates' debt to equity ratio can reduce internal and total leverage of

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328 OECD, *Action Plan on Base Erosion and Profit Shifting* (Paris: OECD Publishing, 2013), 17.

329 OECD, "BEPS Action 4: Interest Deductions and Other Financial Payment", *BEPS Public Discussion Draft* (18 December 2014), Point 11, 10.

multinational enterprise higher than restriction to assets or restriction on borrowing from parent.[330] Furthermore, earning stripping rule (interest to EBITDA) also has disadvantage which is feature of pro-cyclical of business and will provide less deduction in the era of financial downturn.[331]

Secondly, fixed debt to equity ratio approach provides great deal of certainty and simple to implement.[332] With the challenges and situation on their taxation, such as: weakness of tax system, lack of capacity of tax administration, and others[333]; application of debt to equity rules can be rationally accepted in developing countries' perspectives. Moreover, the impacts of this policy to firms' capital structure are relatively promising, at least it can ensure towards more balance between debt and equity, and therefore creates less macroeconomic risk (for instance: current account deficit or volatility of exchange rate).

Thirdly, this reference point may not necessarily represent market reality.[334] This was supported by the fact that in principle, fixed debt to equity ratio does not contemplate any circumstances of company, e.g., industry sector, development phase of firms, and others.[335] On the other hand, other approach such arm's length principle, offers more comprehensive approach on how to assess excessive debt especially on dealing with intercompany loan.[336] However, application of arm's length principle to limit intra-group excessive debt applies if and only if intercompany transactions existed. This rule seemed to neglect the facts that 'back to back loan' or independent loans with guarantee (collateral) are quite popular nowadays.

At the end, the combination between fixed debt to equity ratio and arm's length test is considerably the best solution, since both of them can cover each other's weakness. Combination in here refers to the flexibility for taxpayers to choose which approach is more suitable for them. In China, taxpayers are allowed to prove that even their debt to equity ratio exceed the safe ratio, that they capital structure was at arm's length.[337] Taxpayers receive possibility to not to follow fixed debt to equity ratio, as long as they provide documentation which contains that their capital structure was at arm's length and the jurisdiction of lender not have lower effective tax rate (no intention to have any tax

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330 See Jennifer Blouin, et al., "Thin capitalization Rules and Multinational Firm Capital Structure," *CEPR Discussion Paper*, No. 9830 (2014).

331 This was the experience of Germany when applied earning stripping rule during financial crisis.

332 OECD, "Thin Capitalization Legislation: A Background Paper for Country Tax Administrations", *Tax and Development – Draft*, (2012), 12.

333 Alicja Brodzka, "Emerging Economies – Fiscal Policies and International Relations," *Journal of Economic Studies and Research*, Vol. 2012 (2012): 3.

334 Roberta Augusta Assad Dib, "The New Brazilian Thin Capitalization Rules and How the Other BRICs Approach the Subject," *Bulletin for International Taxation*, Vol. 64, No. 6 (2010): 340.

335 Detlev J. Piltz, "General Report, Subject II: 'International Aspects of Thin Capitalization'", *Cashier de droit fiscal international*, Vol. LXXXIb (The Hague: Kluwer Law International, 1996), 91.

336 Detlev J. Piltz, "General Report, Subject II: 'International Aspects of Thin Capitalization'", *Cashier de droit fiscal international*, Vol. LXXXIb (The Hague: Kluwer Law International, 1996),125.

337 Shi Qi Ma, *China (People's Rep.) – Corporate Taxation*, IBFD Survey Database, based on information available up to 1 September 2014.

advantage).[338] It can be concluded that arm's length optional clause next to a fixed debt-to-equity ratio is abound with OECD suggestion.[339]

5.4.5. Improvement of Tax Administration

Tax administration and tax policy are two separated area. While the first focusses on assessment, collection, audit and enforcement of tax law; the last relates to the economic analysis of the tax system.[340] Nevertheless, in developing countries, any means to administrate taxpayers and the whole system is the most important tax policy.[341] Therefore, any policy or reform to combat profit shifting activities are highly depends on the quality and setting of tax administration and also effort to bridge the gap between tax policy maker and tax administrator. Empirical result as already explained in part 5.2 have also pointed out the importance of tax effectiveness which can determinate how strong the disincentive to have profit shifting.

This part is centralized on single solution which is: tax administration improvement. In order to achieve such improvement, there are several factors need to be considered:[342]

(i) Assessing current capabilities and gaps to be filled. An assessment is not limited to review the level of education and expertise of human resource, the legal environment, or network of bilateral tax treaties, but also includes the availability of information technology system to enforce compliance.

(ii) Developing special unit in international taxation or specific BEPS activity. The organizational structure can follow centralized or decentralized model.

(iii) In order to detect profit shifting activities, tax auditor should understand the business framework of multinational enterprise. Most of transfer price manipulation and debt shifting cases are hidden under commercial motives.

(iv) Apply risk-based approach to compliance as enforcement strategy. It means that tax authority should have criteria to define any transactions that are potentially creates profit shifting activities.

(v) Building team capability with training, recruitment expertise from various background, or access to research materials, databases, and case law.

Last but not least, in general context, government in developing countries should start to reform their tax revenue structure, for example, by reducing the reliance from corporate income tax. Taxing corporation is never easy and globalisation is likely to make it more difficult.[343]

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338 Roberta Augusta Assad Dib, "The New Brazilian Thin Capitalization Rules and How the Other BRICs Approach the Subject," *Bulletin for International Taxation* (June, 2010): 339.

339 Konstantinos Asimakopoulos, "Fixed Ratio Thin Capitalization Rules in Conflict with the Arm's Length Principle and Relative Issues of Deductibility," *International Transfer Pricing Journal,* Vol. 19, No.6 (2012): 408-409.

340 Charles Y. Mansfield, "Tax Administration in Developing Countries: An Economic Perspective," *IMF Staff Papers,* Vol. 35, No 1 (1988): 183.

341 There is an adagium that "tax administration is tax policy" in developing countries. See Milka Casanegra de Jantscher, "Administering the VAT," in *Value Added Taxation in Developing Countries,* eds. Malcolm Gillis, Carl S. Shoup, and Gerardo P. Sicat (Washington DC: World Bank, 1990), 179.

342 See UN, *United Nations Practical Manual on Transfer Pricing for Developing Countries,* (New York: UN, 2013), 83 – 111.

5.5. Conclusion

From the above empirical result, it is worth noting that corporate tax rate difference has a great impact to profit shifting strategy, as measured by the changing of reported profit by subsidiary firms in developing countries. The coefficient of corporate tax rate is -1.0 at the EBIT level and -1.2 at the pre-tax profitability level. Although it cannot be straightforward, these numbers are quite similar with the magnitude of profit shifting from previous studies. However, there is decreasing trend from -2.5 (in 1980's) to -0.4 (recent study), that might cause by the role of anti-avoidance rule. This study also proves that the anti-avoidance rule, particularly transfer pricing and interest limitation rule, can reduce the willingness to shift profit (disincentive). The coefficient of aggregate rules is 0.865 and depends on how effective tax administration system in collecting taxes.

Furthermore, I made an analysis on dominant profit shifting strategy, by using the semi-elasticity of profit shifting at EBIT and pre-tax profitability. The result was not surprising, non-financial technique, e.g. transfer price manipulation is more dominant than financial shifting, accounting for 93% of the cases. While it much higher than the 'consensus' figure, 72%, causality effect between GDP per capita and reported profit may provide an explanation. GDP per capita, as an indication of economic level and size of the market, have a positive association with EBIT, whereas it changes to negative to pre-tax profitability level. It can be an indication that the interest expense will rise as the economic level of a country start to increase. Moreover, domination of transfer price manipulation could be linked with the fact that subsidiary firms, particularly in developing countries, are consumer of intangible assets and technical service from their parent.

This empirical result constitutes a review on data and methodology of scaling the magnitude of profit shifting which is very important for developing countries and also for the development of BEPS Action 11. It is also preliminary step towards designing an effective policy formulation. Since there is negative association between corporate tax rate and profit, do developing countries should reconsider their corporate tax policy rate? I believe not, if this is a unilateral action. The only solution to combat profit shifting is via multilateral cooperation by agreeing single or minimum corporate tax rate. However, this is not possible, concerning country's tax sovereignty. Thus, the problem is not whether to have reform on corporate income tax rate but what kind of anti-avoidance rule should be undertaken.

In making this policy choice, developing countries need to assess which strategy fit best into maximising the long term benefits from globalisation. Given its shortage of human capital and weak tax administration system, it has been too costly for developing countries to formulate complex anti-avoidance rule. As regards to transfer pricing policy, emphasis should be placed on simplification and value creation. The current OECD project on transfer pricing might be beneficial to follow. On the

[343] Lorraine Eden, "Taxes, Transfer Pricing, and the Multinational Enterprise," in *The Oxford Handbook of International Business*, ed. Alan M. Rugman (New York: Oxford University Press, 2009), 615.

other hand, a cautious mind-set should be applied in the context of selecting the 'best' interest imitation rule. An optional clause between fixed debt to equity ratio and arm's length test, as in China, probably would be suitable setting for developing countries.

The last broad point I would like to make is that developing countries should improve their tax administration system. Even good anti-avoidance rule will not work if there is a lack of expertise, limited access to the database, or no reorganisation inside the tax authority. In developing countries, tax policy is basically tax administration.

Chapter 6
Conclusion

The current international tax system has created fundamental opportunity or encouragement for multinational enterprises to shift profits among their affiliations, namely by: uncoordinated tax system across countries (jurisdiction to tax), separate accounting approach and common practice on deductibility of interest payment. Moreover, this opportunity is also incentivized by state's sovereignty to set up domestic tax rates or to behave as fiscal paradise (tax havens). As a consequence, multinational enterprise tries to shift their profit mainly by transfer price manipulation and debt shifting. In order to combat aggressive tax planning, countries are struggling to produce anti-avoidance rule in order to limits profit shifting strategies by multinational enterprises.

For developing countries, tax revenue is a vital source to finance their development. Moreover, profit shifting problem is particularly important in developing countries because the share of income tax revenue from corporation is large. Profit shifting is the product of globalisation, justified by the needs to search the place that gives higher return on capital, and induced by the interaction of uncoordinated tax policy across countries. The point here is not that globalisation is bad for developing countries, but the benefits of globalisation -as regards to intense capital investment and liberalisation of financial market- alone have been greatly oversold. However, the globalisation is 'given' and the real battle of profit shifting is centralised on the tax policy matters.

First of all, in order to combat financial and non-financial techniques of profit shifting, one requires an analysis of the magnitude and effectiveness of anti-avoidance rules. Most of developing countries do not have precise or even adequate information on this issue. It is true that the current available data cannot provide reliable estimate of profit shifting, since it is very hard to disentangle the effect of corporate tax policy to real economic activity. However, the methodology of this thesis, which already reviewed any possibilities and limitation of various data, can be fruitful for further research in developing countries. Please note that the sample and regression model in this thesis also have several limitation, for instance: unequal sample distribution, only covering transfer pricing and interest limitation, and others.

The empirical results of this thesis were extremely incisive. First, semi-elasticity of profit shifting as regards to corporate tax rate difference is relatively high compared to the other studies in different economic characteristics. Moreover, the disincentive to have profit shifting strategy -as measured by semi-elasticity of profit shifting as regards to the effectiveness of anti-avoidance rule- cannot catch up the incentive. The weakness of tax administration is considered as the major cause of such situation.

Second, transfer price manipulation is major profit shifting technique. The reason is twofold. Subsidiary firms are the importer of technology, technical service, patent or even managerial support from their parent, therefore channel to have transfer price manipulation is widely open. This is also supported by the difficulties on the application of arm's length principle. On the other hand, debt shifting is less to be found since the political and economic situation in developing countries is generally less conducive for any reinvestment and business expansion.

Some major important policy directions relevant to developing countries are discussed here. Although that corporate tax rate (difference) is inducing profit shifting behaviour by multinational enterprise, unilateral action to reduce corporate income tax rate in more competitive way will not eliminate profit shifting and multilateral action to set minimum tax rate may face refusal. Based on that, one can argue that the discussion on corporate tax rate policy with regards to profit shifting may not be so relevant for today's developing countries.

On the area of transfer pricing rule, the problem is centralised at the conceptual and practical shortcomings of the arm's length principle. However, the alternative model -global formulary apportionment- will induce shift in productions factor and difficult to be approved by all countries (as it involves political interest). In general, it is better if the formulation of anti-avoidance rule is in line with international practice. As episodes of major international tax reforms are always driven by multilateral organisations (particularly OECD), in any case, developing countries are should continuously monitor and ensure their involvement at the global level. The OECD/G-20 BEPS project is likely to be the fundamental source of design of international tax system in the future. Particularly, for transfer pricing and interest limitation rule, the BEPS Actions are relevant to the tax situation in developing countries.

Furthermore, the agenda to combat profit shifting is large whilst the capacity to implement anti avoidance rule is limited. Government in developing countries must initiate effort to improve the effectiveness of tax administration. Several actions could be done, including training for tax authority, formation of special unit on profit shifting problem, enforcement strategy, or even preparing the capacity of tax court in facing dispute on such problems.

Just to end on a positive note, I believe that the problem of profit shifting in developing countries can be tackled. The empirical findings and policy discussion of this thesis might be not the final solution, but it can be a starting point for developing countries on why and how they should cooperate at the global level. The biggest problem in international tax landscape is not on the good or bad on each policy, but on the distortions caused by uncoordinated actions of national legislators and global consensus.[344]

[344] Jeffrey Owens, "The Taxation of Multinational Enterprises: An Elusive Balance," *Bulletin for International Taxation*, Vol. 67, No. 8 (2013): 445.

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