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Ensuring a Balanced Tax System

Measuring BEPS and its Countermeasures in Indonesia: A Preliminary Research Guide

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BEPS practices have gain rising attention over the last decade, particularly in Indonesia. However, knowledge about its magnitude is still relatively unknown. Many researches with various methods have been developed to enlighten the dimensions of BEPS. This paper examines the possibilities and limitation in measuring BEPS in Indonesia, assess currently available data and suggest what can be done to optimize the potential in the future. Furthermore, this paper also proposes set of researches plan to ensure the knowledge development of BEPS.

It is important to note that measuring the magnitude of BEPS in one particular country is difficult from substantive and technical point of view and also data limitation. Substantively, BEPS practices are seemingly similar with other financial activities, and not all factors influencing the magnitude can be easily incorporated into the model. For instance, incorporating hybrid mismatch arrangements that are used for BEPS into an estimation model would bring particular complexity. From technical side, it is difficult to build reliable estimation model using time-series data. Then, regarding data inadequacy, this paper points out that restricted access for research purpose is one of the constraints for BEPS measurement advancement.

This paper provides introductory guide or basic principle that could be of consideration in setting the research plan. Preliminarily, macro-approach research is useful to measure the magnitude of BEPS in overall. Currently available data that can be used include CIT revenue as the basis to measure the government loss due to BEPS practices. Other variables can be utilized to help distinguishing BEPS practices from usual investment flow. Subsequently, set of

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micro-approach researches are ideal to narrow the knowledge of BEPS behavior, particularly in identifying specific BEPS scheme or MNEs in certain sector. Researches with this methodology are also favorable to measure the effectiveness of BEPS countermeasures, since each of them usually have their own specific purpose.

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1. Introduction

Concerns and worries toward base erosion and profit shifting (BEPS) practices have been alarmingly increasing in Indonesia over the last decade, but little is known about its magnitude and comportment. Governments are pushed to equip their regulation to be more protected from any loopholes that can be exploited from such practices.[1] Accordingly, the government have shown ample interest to focus on addressing MNEs ability to shift their income into low or zero-tax countries without business substance in the decisions. Policy-wise, the government have put a number of rules and requirements for multinational corporations in reporting their transactions. In addition to that, administrative empowerment are in on-going process. Even so, empirical proof to measure their effectiveness and monitor the development are still no more than presumptions.

These undercover activities are unsurprisingly difficult to measure, not because they are hidden or not observable, but because they are seemingly indifferent from real transaction in financial point of view. Moreover, they are not against any tax law, making them even more difficult to identify. This view is supported with the fact that companies hold the right to minimize tax within the spirit of law.[2] Subsequently, the objectivity of whether each tax planning schemes represent violation against the spirit of the law is unclear. The perimeter to determine whether a transaction or practice is categorized as BEPS lies in whether such decision contains economic reasoning or business substance. This of course shows the reason why it is not only difficult to measure the magnitude, but also problematic in distinguishing BEPS activities from all other financial decisions.

Several studies has sought to measure the magnitude of BEPS practices. Generally, the studies have confirmed the existence of BEPS in almost every group of countries. OECD estimated that total revenue loss due to the practices reach between US$100-240 billion annually, or between 4-10% of total world corporate income tax (CIT) revenue.[3] It is indicated that such practices have caused bigger loss in developing countries instead of developed ones[4], with a notable finding that

anti-tax avoidance rules is effective to significantly hush the incentive.[5]

Nevertheless, nobody knows how much revenue is approximately taken from any individual country. Available indicators and analyses of BEPS are severely constrained by the limitations of the currently available data. The available data is often not comprehensive across countries or companies, and often does not include actual taxes paid. In addition to this, the analyses of profit shifting to date have found it difficult to separate the effects of BEPS from real economic factors and the effects of deliberate government tax policy choices. Improving the tools and data available to measure BEPS will be critical for measuring and monitoring BEPS in the future, as well as evaluating the impact of the countermeasures developed under the BEPS Action Plan.

Accordingly, having a systematic and long-term planned research in measuring and monitoring BEPS is of importance at least from two perspectives. First, we should note that schemes through which BEPS is practiced are evolving and getting more complex. This trend is seemingly to be remain in the future. It is mainly triggered by unstoppable pace of global business integration, but the essential motivation is rooted from economic motives by lowering paid taxes through utilizing any possible financial instruments and artificial transactions.

Second, the term 'measuring BEPS' is practically much closer to the definition of an estimation rather than a measurement toward the actual magnitude. Therefore, BEPS and counter BEPS measurement are not a one-shot research nor a short-term project. A systematic framework for the study should be prepared as a long-term agenda within which policy makers consider the direction of both BEPS schemes evolvement and international tax landscape that provide the incentives. Having a proper understanding of the available data and its limitations would be critically beneficial for the development of indicators showing the scale and economic impact of BEPS, as well as for the development of economic analyses of the scale and impact of BEPS and BEPS countermeasures.

It is important to note that most analyses, including government policy analyses and decisions, are often made with partial information. For policymakers, using available data to conduct

1. Darussalam and Ganda C. Tobing, "Rencana Aksi Base Erosion Profit Shifting dan Dampaknya terhadap Peraturan Pajak di Indonesia", *DDTC Working Paper* No. 0714 (2014): 3.

2. See Reuven Avi-Yonah, Nicola Satori, and Omri Marian, *Global Perspective on Income Taxation Law* (Oxford University Press, 2011), 101.

3. OECD, *Measuring and Monitoring BEPS, Action 11 – 2015 Final Report* (OECD, 2015), 101.

4. In general, CIT revenue proportion of total revenue in developed countries do not exceed 10%, while in developing countries it lies between 10-40%. See Table 12 and 74 in OECD, *OECD Revenue Statistics*

2015 (OECD, 2015) as quoted in Philip Baker, "BEPS: Emergence of International Tax Law and Future Direction". In *Base Erosion and Profit Shifting (BEPS): The Global Taxation Agenda* (Haryana: Wolters Kluwer, 2016), 59-60. See also OECD, *OECD Revenue Statistics in Asian Countries* (OECD, 2015), 18.

5. B. Bawono Kristiaji, "Incentives and Disincentives of Profit Shifting in Developing Countries", *Master Thesis for Tilburg University* (2015).

some analysis is better than working without empirical-based evidence at all, but such analyses must also recognize the limitation of currently available data and how those limitations may affect the reported results.

Therefore, the urgency is clear that a comprehensive assessment about currently feasible data and information and future sufficient methodology is of crucial importance to identify the BEPS-impact magnitude and evaluate the effectiveness of BEPS countermeasures. Accordingly, this paper outlines the benefits and limitations of the different types of data. Moving it further, this study also identify new types of tools and data that should be collected in the future. New data could include capitalizing on existing data that is currently unavailable, either due to confidentiality reasons or because it is not currently processed or analyzed, as well as additional information needed for monitoring BEPS in the future, taking into account ways to reduce administrative costs for tax administrations and businesses.

Hence, this paper provide a glance of work providing research framework which elucidates which research methodology or research are exist, feasible, or should be feasible in the future. The hope is that every produced countermeasures in the future could be well formulated and evaluated so that BEPS practices and the incentives could be effectively tackled. This paper also assess currently available and accessible data, which are vital to determine what could be done and how specific and accurate we can measure the magnitude of both BEPS activities and the existing countermeasures.

The structure of the paper is divided into six section. Second section describes the necessary concept of BEPS which is needed for measurement matters. Third section follows with the reasoning of the urgency to measure BEPS and its countermeasures. Fourth section comprises data and tools assessment that are necessary to conduct the research. Fifth section tries to demystify what research plan the government needs to do based on the currently available data and the potential in the future. Finally, sixth section conclude the paper.

2. The Concept of BEPS

The incapability of the international tax regime to adjust quickly with global business development has been initiating the multinational entities (MNEs) to minimize their tax liabilities by artificially shifting their profit to lower or no tax jurisdiction. Current taxation rules have focused mainly on the prevention of double taxation and the effort to boost international trade.[6] At the same time, the interaction of domestic taxation between countries and the development of technology have risen significantly over time. This situation potentially leads practices to exploit the loopholes between countries' tax system.[7]

In practice, the increasingly complex schemes of tax avoidance have left the development of domestic taxation laws adjustment to deal with tax avoidance efforts far behind.[8] It becomes economically rational for MNEs to divert their profits to their affiliated companies located in certain countries that have lower corporate income tax rate. The adoption of difference tax rate among countries in the world has driven the emergence of aggressive tax planning by multinational companies. Furthermore, the practice of profit shifting by multinational companies from a country with higher corporate income tax rate to other countries with lower corporate income tax rate has eroded potential taxes that should be accounted as government revenue in the former country. Consequently, the government revenue in the former country would not reach its optimum level.

The practice of tax avoidance done by multinational companies is known as Base Erosion and Profit Shifting (BEPS). It has been an important concern for developing countries since revenue will remain to be a key pillar to drive their national development.

However, efforts to counteract the practices globally are significantly hampered by the sovereignty of each country to determine its taxation policies respectively. The absence of harmonization and the lack of cooperation between countries have led to the emergence of unilateral actions from each country which certainly have impacted on non-conformity rules, business uncertainty and competition of CIT rate reduction.[9] Finally, the most benefited countries from BEPS practices are countries that able to set very low tax rate (tax haven) and offer confidentiality of the information.[10]

6. Darussalam and Ganda C. Tobing, OpCit., 3-5.

7. OECD, *Action Plan on Base Erosion and Profit Shifting* (OECD Publishing, 2013), 7-8. Lihat juga OECD, *Addressing the Tax Challenges of the Digital Economy*, *Action 1: 2014 Deliverable* (Paris: OECD Publishing, 2014). Dapat diakses di http://dx.doi.org/10.17879789264218789-en.

8. Arthur J. Cockfield, "BEPS and Global Digital Taxation", *Tax Notes International*, (September 2014): 934.

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

10. 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.

Existing empirical analyses find BEPS occurring through multiple channels of international corporate tax avoidance. They include hybrid mismatch arrangements, excessive interest deductions, harmful tax practices; treaty abuses, artificial avoidance of permanent establishment, transfer pricing outcomes that are not aligned with value creation, and other circumvention of any applicable anti-avoidance measures. Measurably, the number of channels would depend on which countries and which rules apply in specific circumstance faced by MNEs.[11]

2.1 Factors Motivating BEPS

Essentially, any business model is built with the motive to maximize profit generation. The model is built in a way to provide platform for every economic decision that would enable additional profit and reduce the costs. Taking this to tax matters, this perspective allow us to perceive that the term 'profit' here is defined as the after-tax profit.[12] Any form of tax would reduce the corporate income along with other costs – e.g. operating cost – and thus should be similarly perceived in a way that it should be minimized as low as possible.

This perception is strongly reinforced as there are growing opportunities provided to lower the tax liabilities. In global context, especially by the MNEs, the increasing opportunities can be utilized by artificially allocating their profit among affiliated MNE across to reduce the aggregate tax liabilities.[13]

There are at least five factors that provide the incentives for MNEs to practice BEPS. *First*, jurisdiction to tax held by every country that has each of their own objectives.[14] Every country have diverse tax systems and various factors that influences the tax designs, including culture, social, economy and political stance of the country.[15] Subsequently, loopholes between tax systems are inevitable, thus incentivizing MNEs to exploit the mismatch to shift their profit.

Second, separate accounting approach that perceive each MNE affiliate as exclusive entity. It then motivate MNEs to make internal transactions that are tailored in a way to reduce the tax liability,

especially in entity that is located in high-tax-rate jurisdiction. The absence of framework that enable governments to see MNEs as one economic entity makes them difficult to attain complete information about the whole entities grouped in the MNEs. Consequently, it becomes difficult for the tax authority to identify which transactions are purely tax motivated with no or little business substance.[16]

Third, the existence of different CIT-rate between countries affect the way MNEs allocate their profits. Rationally, MNE will concentrate their profit in low or no-tax jurisdiction compared to countries with higher CIT rate. Without cooperative or tax-rate harmonization, every country will always keep their card closed, aiming to protect each own tax base, or if possible, increasing their tax base by attracting corporate asset and profit to be shifted to their countries.[17]

Fourth, closely related with the third factor, the existence of tax haven (preferential tax regime) that directly provide opportunities for MNEs to artificially shift their profit. Usually, those jurisdictions are geographically small with no competitive advantage in terms of natural resources and low dependency to tax revenue. Their competitive advantage lies on its ability to lower their tax rate to a level where they are competitive enough to attract fund to be moved there. In effect, the most benefited jurisdictions are certainly the tax haven countries who are not only offering low or no CIT[18], but also providing information privacy security.[19]

Fifth, different tax treatment between debt and equity. Both of them are funding source for any MNEs for their operational activities. Funding from the former raises interest payment, while the latter creates dividend payment. In most countries, including Indonesia, expenditures caused from interest payment are deductible component from tax liability, while expenditures originated from dividend payment are not. This trigger MNEs to make internal loan between their affiliates to create maximum deductibles that would lower their overall tax liability.

11. Dhammika Dharmapala, "What Do We Know About Base Erosion and Profit Shifting? A Review of the Empirical Literature", *Coase Sandor Institute dor Law & Economics Working Paper* No. 702 (2014): 14-16.

12. Michael Keen dan Kai Konrad, "The Theory of International Tax Competition and Coordination", in *Handbook of Public Economics*, Volume 5, ed. A. Auerbach et al (2013), 257-328.

13. OECD, *Addressing the Tax Challenges of the Digital Economy, Action 11 – 2015 Final Report* (Paris: OECD Publishing, 2015), 86.

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

15. Lihat Jill C. Pagan dan J. Scott Wilkie, *Transfer Pricing Strategy in A Global Economy* (Amsterdam: IBFD Publication, 1993), 27.

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

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

18. Lihat Lorraine Eden dan Robert T. Kurdle, "Tax Havens: Renegade States in the International Tax Regime?" *Law and Public Policy,* Vol. 27, No. 1 (2005): 100-127.

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

2.2 The Implication of BEPS

BEPS practices has basically fiscal impact in terms of the loss of government revenues, but there are also other negative effects. For instance, changes in corporate income taxes due to BEPS behaviors and countermeasures also result in real economic effects, including effects on the incidence (or economic burden) of taxes, business model and corporate structure[20], debt bias and strategic location of debt, misdirecting foreign direct investment (FDI) flow, investment and economic growth and tax competition between countries (spillover effects)[21]. These are all inefficiencies produced due to business decision made by MNEs.

In addition, BEPS practices distort fairness and equality in national development as well. Low tax paid by the MNEs shift the tax burden to domestic corporations and the society in general.[22] In result, effective tax rate encountered by MNEs is lower than the one faced by domestic corporations.[23] This circumstance would lead further inequality, since local corporations get difficult to compete with the MNEs.

3. The Need to Measure and Monitor

During the meeting held in Mexico in June 2012, The G-20 leaders have declared commitment stating that: "We reiterate the need to prevent base erosion and profit shifting and we will follow with attention the ongoing work of the OECD in this area." Subsequently, an action plan on BEPS was produced in July 2013. It consists of fifteen specific substance that are intended to facilitate multilateral cooperation among governments with regard to the taxation of MNCs. The general aim is to "better align rights to tax with economic activity."[24]

Accordingly, an important consideration is the magnitude of tax-motivated income shifting by MNCs. Diverse empirical approaches have been used and each have its own way on describing what is known about the magnitude of BEPS, and on interpreting the implications o these findings.

Although measuring the scale of BEPS proves challenging given the complexity of BEPS and the serious data limitation, today we know that the fiscal effects of BEPS are globally significant. The finding of many works performed even since before 2013 highlight the magnitude of the issue. Within economics literature on income shifting, the approach is mainly developed by Hines and Rice (1994), while other approach from Dharmapala and Riedel (2013), Kristiaji (2015), Crivelli, De Mooij and Keen (2014) and by Dyreng and Markle (2013) are notable as well.

A representative consensus estimate from the literature, based on a meta-regression study by Heckemeyer and Overesch (2013), is a semi-elasticity of reported income with respect to the tax rate difference between an affiliate and its parent (e.g. because the tax rate in the affiliate's country falls from 35% to 25%) would increase the pretax income reported by the affiliate by 8% (for example, from $100.000 to $108.000). This shift from aggregate country-level datasets to firm-level micro data has enhanced the credibility of more recent estimates of BEPS.

Meanwhile, OECD suggests six indicators of BEPS activity highlighting BEPS behaviors using different sources of data, employing different metrics, and examining different BEPS channels. When combined and presented as a dashboard of indicators, they confirm the existence of BEPS, and its continued increase in scale in recent years. They include concentration of high levels of FDI relative to GDP, differential profit rates compared to effective tax rates, differential profit rates of top MNEs between countries with different CIT rate, effective tax rates of large MNE affiliates relative to non MNE entities with similar characteristics, concentration of high levels of royalty receipts relative to research and development (R&D) spending and interest expense to income ratios of MNE affiliates in high-tax locations.[25]

OECD reports find that[26]:

- Higher profit rates of MNE affiliates are found in lower-tax countries than other affiliate from the same group located in higher-tax countries.
- MNE entities paid effective tax rates 4-8.5% lower than domestic enterprises with similar operations.
- Foreign direct investment (FDI) increasingly concentrated. Countries having FDI volume two-fold of their GDP increased from 38 times higher than all other countries in 2005 to 99 times higher in 2012.

20. See, for example, Channing Flyinn and Stephen Bates, "The Impact of BEPS on the Digital Economy", in *BEPS is Broader than Tax: Practical Business Implication of BEPS*, International Tax Review (London: Euromoney Trading Limited, 2016).

21. In the beginning, race-to-the-bottom competition in terms of CIT rate was only purposed to attract real investment. But with the emerging of tax haven jurisdictions, the pressure for such decision is getting stronger to reduce BEPS practices as well. See OECD, *Action Plan on Base Erosion and Profit Shifting* (Paris: OECD Publishing, 2013): 17.

22. OECD, OpCit., 7-8.

23. See OECD, "BEPS Action 11: Improving the Analysis of BEPS", *BEPS Public Discussion Draft* (13 May 2015) 2015): 15-16.

24. See OECD, *Action Plan on Base Erosion and Profit Shifting* (Paris: OECD Publishing, 2013): 8.

25. OECD, *Measuring and Monitoring BEPS, Action 11 – 2015 Final Report* (OECD, 2015): 47.

26. OECD, OpCit., 5.

- The separation of taxable profits from the location of the value creating activity is particularly linked to intangible assets.

Despite the existence of results confirming BEPS existence and magnitude for certain group of countries, assessing the scale of magnitude as well to a specific country would be critically important. It is not obvious whether any measured magnitude should be viewed as being "large" or "small" for policy purposes, but the most crucial necessity for a government is to monitor its development in aggregate or in specific scope to identify the behavior and map countermeasures with a structured strategy and clear priority.[27]

Any policies that are purposed to counter BEPS obviously need framework that can measure the scale of such activities. A measurable magnitude with mapped behavior would help policy makers in formulating framework through which BEPS countermeasures can be designed and developed. Measuring BEPS could be one starting step to acknowledge how much revenue lost caused from such practices. Several efforts have been made only developed countries or European region, while according to Crivelli, de Mooij, and Keen (2015), developing countries are ones who suffered the most.[28] Acknowledging the magnitude of BEPS and the determinants for its each scheme are crucial to plot the behavior and find specific way to counter it.

4. Assessing Data and Research Tool Options

Practically, studies on BEPS are yet to produce solid results that can explain the magnitude of BEPS practices. This could not be separated with the fact that in Indonesia, as in most developing countries[29], data inadequacy is the main obstacle for researcher or policy maker to measure BEPS. Different approaches used in measuring BEPS would generate different results that could elucidate different dimension of BEPS. Relatedly, each of them has their own limitation. For instance, macro perspective approach would generate us result showing aggregate impact caused by BEPS activities. The most usual proxies representing the impact are CIT revenue or CIT base. However,

it cannot give us idea about how MNEs channeled the activities and how they behave in certain or specific condition. Meanwhile, micro approach could give us more information about this, but it does not provide aggregate impact of the practices.

Therefore, to gain maximum knowledge that can be reaped, we should utilize relevant research approach within a structured framework so that every research could produce building blocks that can be used for further research. More importantly, identifying data limitation and the possibility to have the data would be beneficial in determining what set of research could be potentially done in the future and what actions are necessary for government to provide procedure to ensure important data are accessible for research purpose.

4.1. Defining BEPS for Research Purpose

Before measuring BEPS practices, we should first understand the basic technical nature of them. The relationship between MNEs behavior and government as tax policy maker is multifaceted. Decisions of government regarding corporate taxation affect the decisions of multinational firms regarding where to locate economic activity and where to book profits. On the other spectrum, multinational firm decisions also impact governments, affecting the amount of revenue that they receive and ultimately the tax policy design.

Multinational firms then have both financial and real responses to the taxation of corporate income. Financial responses to corporate taxation include efforts to shift income to more lightly taxed locations. For instance, multinational firms may alter the transfer prices assigned to international trade with affiliates, alter the structure of affiliate finance, or change the location of royalties and intangibles.[30] Real responses to international tax incentives include locating more assets, employment, and economic activity in low tax countries. While both financial and real types are likely to affect government tax revenue, they have distinct policy implication.

Most of existing analyses are limited to a single country or MNEs headquartered in a single country, where access to company surveys, corporate tax returns, or company trade data are made available to researchers on a confidential basis, or based on analyses of MNE affiliates in multiple countries from a limited number of financial databases. Unfortunately, similar data is not available for Indonesia, and thus the results from those studies are specific to those countries' MNEs, and would not necessarily be representative

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27. See, for example, Thiess Buettner and Georg Wamser, "Internal Debt and Multinational Profit Shifting: Empirical Evidence from Firm-Level Data", *National Tax Journal* No. 66(1) (2013): 63-96. They found indication that German CFC rule is effective in shifting profit through internal debt.

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

29. GIZ Sector Programme Public Finance, *Addressing Tax Evasion and Tax Avoidance in Developing Countries* (Eschborn: Deutsche Gesellschaft, 2010).

30. Kimberly A. Clausing, "Multinational Firm Tax Avoidance and Tax Policy", *National Tax Journal* Vol. LXII, No. 4 (2009): 703-704.

for other countries due to differences in tax rates and tax rules, differences in the industry mix and other country differences.

In addition, those studies do not provide an estimate of fiscal effects. Fiscal estimates require significantly more information than just the average responsiveness of financial profits to a change in tax rates. Financial statement profits generally differ from taxable income due to differences in accounting and tax rules. Companies with negative taxable income in a given year generally cannot receive a tax refund in that year, but rather carry forward any tax losses to future years. Further, the relationship between income and tax liability is not proportional due to the extensive use of tax credits in many countries.

While academic studies have increasingly focused on individual company data, several international organizations have used macroeconomic data to estimate the effects of BEPS. These studies focus on the effects of "tax haven" countries and FDI through special purpose entities. Although macroeconomic data cannot capture detailed firm-level behavior, it can capture some dimensions of BEPS which may not be reflected in micro data due to its incomplete coverage. One limitation with using macro data, though, is that it is difficult – if not impossible – to completely differentiate the impact of taxes on both real economic activity and BEPS.

This is important, since in macro data, we can only know the outward change of the variables. The real factors driving the movement is unknown, thus lowering the accuracy of the estimation. In most occasions, researchers used control variables to neutralize the significance eroded CIT base caused by other factors. Although adding control variables could be handful, it can never help to reach optimum accuracy and form adequate model that can best explain the BEPS behavior. More explanation about macro approach will be detailed in section 4.3.1.

4.2. Criteria in Assessing the Data

It is indisputable that the results obtained from any analysis are only as robust as the data and methodology underpinning them. This is particularly true in the case of analyzing BEPS, since BEPS involves multinational enterprises (MNEs) that can establish intra-group arrangements that achieve no or low taxation by shifting profits away from jurisdiction where activities creating the profits are taking place.These intra-group cross-border arrangements are often very complex, involving multiple related entities, and related party transactions are typically not separately

identifiable (and available) in tax or financial accounts databases.

Hence, it is vital to establish an understanding of the currently available data – the coverage and representativeness of that data; whether it is tax return or financial account data; whether it is macro or micro-level data; its reliability and robustness (what quality control measures are in place for the data collection); whether it is comparable across jurisdiction; and who has access to it. Such assessment will provide insight on what are the choices than can be utilized.[31]

OECD outlines a set of criteria to be used for evaluating the different types of data with respect to their usefulness for analyzing BEPS. Having a thorough understanding of the available data will provide a solid base for working towards 'best practices' in future data collection to 'fill the gaps' and strive for more comprehensive data and comparability across countries, recognizing the trade-offs between the objectives of improved tax policy analysis and the need to minimize administrative costs for tax administration and businesses. The set of criteria could be considered are as follows:

- Coverage/Representativeness – Determining the scope or length of coverage of the underlying data is key in assessing the results of any analysis with reliability and accuracy. Most databases are limited to individual countries or a region, and there is not truly comprehensive global database of MNE activity.

- Usefulness for separating real economic effects from tax effects – Separating BEPS-related activity from real economic activity is not only important, but also need to be estimated. In this regard, firm-level data provides researchers with more information to attempt to more accurately separate BEPS-related activities from a firm's real economic activities.

- Ability to focus on specific BEPS activity – BEPS is practiced through various practices that artificially segregate taxable income from the real economic activities. A MNE's financial profile can be very different between financial and tax accounts. Moreover, information provided in the country of resided MNE affiliate can differ from the firm's country of incorporation. Utilizing different information in order to identify specific international tax avoidance would generate useful insight in measuring certain BEPS activity.

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31. See Clemens Fuest and Nadine Riedel, "Tax Evasion and Tax Avoidance: The Role of International Profit Shifting", *Oxford University Centre for Business Taxation Working Papers* No. 10/12 (2010).

- Level of detail – As BEPS behaviors involve cross-border transactions, typically between related parties, information on related and unrelated party transactions should be used when available. Affiliate-level information should supplement worldwide consolidated group information when available.
- Timeliness – The provision of most updated data enables policymakers to monitor and evaluate the changes in the BEPS environment and the effects of legislation. If the time lag is too long, empirical analysis may be more of an historical assessment, thus not giving substantial benefit for current necessary action to counter the practice.
- Access – The extent to which access to data is provided to statisticians and economist within government, and potentially outside of government, with strict confidentiality rules, represents would bring advancement to the development of BEPS measurement progress.

Table 1 depicts the OECD's assessment on the practicality of several type of data that can be utilized to measure the magnitude of BEPS.

4.3. Methodology Options for Measuring BEPS

In measuring BEPS in one particular country, it is difficult to produce robust and reliable result due to three points of view. First, from substantive point of view, it is problematic in relating the factors incentivizing BEPS, its pattern and the schemes channeling the profit shifting with the selection of dependent variables into an estimation model. Besides tax rate difference, it is quite challenging to incorporate other determinants into the model. For instance, in the case of hybrid financial instrument that occurred due to the mismatch in tax system

between countries, complexity would arise when incorporating such occassion into the model.

Secondly, from technical perspective, determining the type of data – cross-section, time-series, or panel data – would have each consequence in having appropriate model. Afterwards, selecting appropriate samples to be used in the measurement would be another issue. In every option, researchers have to identify each limitation and recognize how it affect the reliability of the estimation result. Thirdly, regarding data provision, it would define how far BEPS measurement could develop and inform policy makers to formulate effective countermeasures (assessment on data provision in Indonesia will be provided in later section).

Nevertheless, in terms current practicability, there are several methodologies that can be used to measure the magnitude of BEPS. In general, we can differentiate it into two broad approaches: macro and micro approach. The former view BEPS from general outlook, or in aggregate basis, through which the measurement produce aggregate result; the latter takes stand point of view from corporate level, thus more of examining the reported profit changes and financial decision behavior.

This section reviews both approach and examines each strong elements and handicaps in measuring BEPS.

4.3.1. Macroeconomic Approach

In measuring the overall impact of BEPS, macro approach gives holistic idea on how big the magnitude. The major indicators that could be used to represent BEPS activity include current account, trade data, FDI, or CIT revenue. These variables,

Table 1. OECD's Overview on Several Data Sources

	Type of Data	Review
Macro Data	National Accounts (NA)	It measures the economic activity in a country and includes variable such as operating surplus, which may be used in BEPS analysis. It is easily accessible from international organizations, such as the OECD and the IMF. However, the underlying information used to construct the data itself tainted by BEPS behaviors – meaning that even widely used measures such as GDP will be distorted by a BEPS component that is difficult to disentangle. There are significant definitional differences between National Accounts and tax data.
	Balance of Payment (BOP)	BOP statistics include all monetary transactions between a country and the rest of the world, including payments for exports and imports of goods, services, financial capital and financial transfers. This encompasses information on flows widely used to shift profits, such as purchases and sales of trading stocks and services, royalties and interest. The data is accessible from Ministry of Trade or World Bank and IMF, but they do not distinguish between transactions respecting the arm's length principle and manipulated transactions.

Macro Data	Foreign Direct Investment (FDI)	FDI statistics cover all cross-border stocks and flows between enterprises forming part of the same group, including (i) direct investment (equity or debt) positions; (ii) direct investment financial flows (equity, reinvestment of earnings, debt); and (iii) direct investment income flows (dividends, distributed branch profits, interest). The IMF only reports on FDI positions, not flows, and the amount of information available from individual countries differ. The OECD has statistics on FDI positions, income and flows, but there are currently gaps and inconsistencies.
	Trade data	Aggregate data on bilateral trade by product can be used to analyze profit shifting through mispricing.
	Corporate income tax (CIT) revenue	Aggregate tax revenue data is collected by Ministry of Finance, especially the Directorate General of Taxes (DGT). This could be of good source in estimating the aggregate revenue loss representing the magnitude of BEPS activities. It is usually used to represent the tax base existed in a country or region. The main challenge of using this data is to differentiate revenue losses caused by BEPS from real economic and business decisions. In addition, the lack of detail and consistency is an important issue for developing countries and, because BEPS involves cross-border transaction with all countries, comparable data for both developed and developing countries, is essential.
Micro Data	Customs (trade) data	Customs data is a useful force for understanding the mispricing of traded goods and services. This is an important component for understanding transfer pricing behavior by related parties. As noted in the macro-section, the service component of trade flows (which includes royalties and other payments for the use of IP) is likely to be underestimated due to the underreporting and mispricing of IP.
	Company financial information from public/ proprietary databases	This information can be sourced from published financial statements of MNEs, open-access sources such as OpenCorporates, and commercial databases (e.g. Bureau Van Dijk (Bvd) ORBIS and Amadeus, S&P Compustat Global Vantage, Bloomberg, Oriana, Osiris, OneSource, Mergent, Alibaba.com, SPARK, DataGuru.in, Ruslana). Companies (at least public companies) are typically obliged to publsh financial statements (consolidated and/or unconsolidated). Problem with the suitability of this data for BEPS analyses include: different reporting requirements for accounting and tax purposes, no distinction between related party and independent party transactions, coverage that is far from comprehensive, and the heterogeneity of reporting across countries and companies. Databases that consolidate companies' balance sheet and income account data are improving their coverage over time, but still have weak coverage of developing countries, especially Indonesia.
	Company financial information from government databases	This information could be of insightful information to measure tax-motivated profit shifting, but access to such data is usually restricted in certain government institution and needs long bureaucracy process to obtain such data.
	Tax return CIT information	A range of financial and tax information is available to tax authorities as companies are required to file a tax return. The DGT do not report corporate tax revenues separately for MNEs and purely domestic companies from tax returns, and have no systematic data regarding intra-group transactions. Full access to the detailed micro-level company tax data is generally restricted to DGT.
	Tax audit information	Information from audits of tax returns filings, both assessments and settlements, has been cited as a potential source of information about BEPS. However, they are not available for tax policy analysis, even on an aggregated basis.

especially the first three, represent the pool of the whole financial transaction or financial investment flow in which artificial profit shifting take part. The last one – CIT revenue – measures the magnitude of BEPS from the fiscal impact it has produced. In short, macro approach treats every BEPS activities are identical, since what matters is to get insight of the total estimation.

In most cases, the key variable that are mostly used as the multiplier of BEPS activities is CIT rate difference between countries. The reason is that it is more directly related to how much tax burden is reduced due to the practices. It also represents mathematical reasoning from MNEs in making business decision regarding profit maximization choices of action, including the consideration of cost for shifting profits (e.g. paying consultant, more costly tax division, probability of getting punished).[32] However, the consequence is that it does not distinguish CIT rate difference between two countries and between a country with tax haven jurisdiction. This implication is significant, since BEPS behavior could be different if the jurisdiction destination is a tax haven.

Alternative measurement using FDI could be possible without using CIT rate difference, although FDI flow is significantly influenced by taxation.[33] This method was used by UNCTAD (2015), where identifying suspicious movement is the key here to determine whether a flow can be categorized as BEPS substance or not. There might be potential to develop this method to measure the BEPS magnitude.[34] The finding firstly identifies the existence of BEPS by analyzing certain FDI outflow and inflow that are concentrated to tax haven countries. Then the research continues by finding the correlation between magnitude of utilization of offshore investment hubs for FDI and the level of rate of return using OLS model. This method could be promising, but still has limitation in bringing this tool from group of countries level – which uses panel data – to individual-country level – which uses time-series data.

Difficulty arises when we try to differentiate between part that is real investment flow or real business transaction and part that is profit shifting activities. It is plausible, since macro data does not provide the underlying motivation behind the financial decisions represented in the data.

Further economic and statistical assumptions could be made to enable more advance analysis to generate more idea about the magnitude of BEPS. Nevertheless, it does not increase the reliability of the estimation accuracy.

It gets even more difficult when we go from measuring BEPS in a group of countries to do similar purpose in one individual country. The reason is basically two-fold. First, at individual country level, the number of observations are drastically reduced, which brings both technical statistic limitation and lower reliability in the result. Second, the nature of the data is changed from panel data – which comprised of many countries data across a series of time – into time-series data. This change brings us particular complication regarding the determination of which kind of regression to be used.

Econometrically speaking, time-series data regression requires two stages of important examination before any result could be generated. First, we should test whether the data for each variable is stationary or not. There is a probability that stationary data from involved variables could generate a strong significant relation with high R^2. This kind of result would lead us to false conclusion,[35] since such correlation shown does not represent any true relationship between variable. When two unrelated variables have certain similar tendency of non-stationary movement, spurious correlation would appear, while the true correlation between the two is still unknown.[36] Conclusively, seemingly correlated non-stationary data would lead to a misled interpretation. In handling such situation, taking first differentiation – or second differentiation – of each variable is the logical subsequent step. This way, we would get stationary form of each variable and we can continue to proceed the regression process.

Second, having the data stationary, we proceed into selecting which regression method to be used. The possible methods include vector auto regression (VAR), vector error correction model (VECM), and ordinary least square (OLS). Selecting one of them is quite complicated, since each existing regression method has their own boundaries and they are unable to provide ideal measurement. It also depends on the nature of the data. For instance, if we are to use VECM, we have to examine first whether there is co-integration relationship between related variables.

32. Clemens Fuest, Shafik Hebous, dan Nadine Riedel. "International Profit Shifting and Multinational Firms in Developing Countries", *International Growth Centre Working Paper* (2011): 5.

33. OECD, *Tax Effects on Foreign Direct Investment: Revent Evidence and Policy Analysis* (Paris: OECD Publishing, 2007).

34. UNCTAD, "An FDI-driven approach to measuring the scale and economic impact of BEPS", *Technical background paper accompanying the UNCTAD Working Paper on "FDI, Tax, and Development"* (2015).

35. See Simon P. Burke dan John Hunter, *Modelling Non-Stationary Time Series: A Multivariate Approach* (New York: Palgrave Macmillan, 2005), 8-37.

36. Helmut Lutkepohl, "Univariate Time Series Analysis", in *Applied Time Series Econometerics*, Helmut Lutkepohl and Markus Kratzig, eds. (Cambridge: Cambridge University Press, 2004): 11.

VECM is ideal to examine whether selected variables in the model have long-term and stable relationship. It thus enable us to identify the moving relationship during certain period of time and estimate the future relationship along with their determinants.[37] But despite these advantages, VECM is mostly unfeasible due to the characteristic of BEPS. Recall that, in terms of outward characteristic, the attribute of BEPS is similar to other form of real financial activity. In other words, the portion of BEPS is most likely not significant in the total financial activity of a MNE. It then makes us difficult to catch robust relationship between main variables.

For example, if we use CIT revenue as impact-of-BEPS representation and CIT-rate difference as the variable incentivizing MNEs to artificially shift their profit, most likely there would be no co-integration relationship between the two. The reason is basic, which is that the movement of CIT revenue during certain period of time is influenced by many factors, with CIT-rate difference is only one among many other factors. Neutralizing the influence by adding more variables representing the determinants besides CIT-rate difference can be useful, but then another problem would rise again: under time-series scenario, using VECM, we could not add too many variables. This would violate the degree of freedom level, especially if the length of time period is not big enough.

Then, if this is the case, OLS regression would be the realistic approach. It is the method where there is not much data specification requirements and relatively simpler. Using prior example, by using OLS, we can get result indicating the semi-elasticity of CIT revenue due to the change of tax rate differential. However, we should remind that OLS has some limitations in making interpretation. One of the most important underlying assumptions from OLS is that it regards the influence of CIT-rate difference toward CIT revenue to be constant over time, or technically speaking, the relationship is assumed to be linear during the time period. Thus, although using OLS is a useful method of research, it oversimplifies the nature of BEPS.

Overall, by using macro approach, we are limited in determining the main determinant representing the incentive of BEPS activity. We can only use CIT-rate difference to be used as the factor that motivates or gives incentive to BEPS practices, since it is the only available factor that could be quantified. But in fact, financial decision regarding to BEPS practices is very complex. There are many other factors that are very difficult to be utilized in econometric model, like set of opportunities to shift profit through each BEPS scheme, the existence of set of BEPS countermeasures, availability of mismatch corporate tax regulations that can be exploited, advancement of tax planning, tax treaty networks, number of tax-haven jurisdiction, and many others.

Macro approach is also not useful to accurately measure the effectiveness of specific BEPS countermeasures. It can only estimate the influence of BEPS countermeasures in aggregate, without specifying each of its effectiveness and quality of the administrative implementation. Subsequently, it can only take the outcome as the result of the existence of the countermeasures, but it cannot give hints or produce examinations on how specific countermeasure can or cannot perform well to reach the policy objectives.

So far, we can infer that macro approach might give general idea about how big the magnitude of BEPS impact is, but produce low practicability for policy recommendations. Nevertheless, it does not imply that macro approach is not important. Rather, macro approach is ideal as preliminary research which takes role as the basis for further researches. It provide ground for succeeding other approach and gives idea on which studies are necessary and priority to be held.

IMF (2014) and Crivelli de Mooij and Keen (2015) have proceeded such approach giving idea for the significance of BEPS practices among all countries and some group of countries. It does not only support the proof that BEPS exists in every countries, but also hints the difference of its magnitude between countries that have relatively proper anti-tax avoidance rules and those who are not between certain region – Europe and Non-Europe –, and between poor and rich countries. They find that the significance of BEPS is higher among developing countries, especially in those who are not equipped with solid anti-tax avoidance rules.

4.3.2. Micro Approach

Unlike macro approach, the micro one is not a suffice method to measure the aggregate magnitude of BEPS practices. Rather, it is more ideally purposed to comprehend the idea about the BEPS actor behavior, not the magnitude of BEPS itself. The term 'micro' itself hints that the measurement is done in corporate level, while indicating the possibility of targeting certain scheme of BEPS specifically.

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37. Stata Manual. Internet, accessible through: http://www.stata.com/manuals13/tsvecintro.pdf.

Nonetheless, similar to macro approach, this one can also treat CIT-rate difference as the factors motivating BEPS activities. For instance, a research could be designed in a way to examine the relationship between CIT-rate differences to reported profit in MNEs. This way, we can identify the semi-elasticity of profit MNEs due to the changes of CIT-rate differences between the two affiliated countries. On the other hand, we can also add BEPS counter measures – for example, GAAR or SAAR – to see the influence of these policy in countering BEPS. In other words, we put the counter measures representing the factors that create disincentives for MNEs to shift their profit. Similar effort has been done by Kristiaji (2015), using the financial data of affiliated MNEs in developing countries.

Micro approach has plentiful ways in tailoring the methods to measure BEPS activity, depending on the necessities of the research goals. Broadly speaking, we can divide them into three bases: based on certain BEPS scheme, nature of MNEs business structure, and countries destination for shifting the profits. On the first base, depending on which BEPS scheme it tries to refer, relevant research design could be adjusted to incorporate the particularities of attributes related to the BEPS scheme. The right tool for measuring BEPS practices would be different between the ones that done through transfer pricing and the ones that done through debt financing.[38] Particularly, identifying BEPS behavior done through tax treaty shopping also requires different method, as done by Weyzig (2013).[39] This way, we can identify the specific behavior of MNEs in considering certain BEPS scheme.

On the second base, regarding the MNEs sector, research scope can be narrowed to MNEs operating in certain sectors or criteria. Beer and Loeprick (2015) tried this method by investigating firm-specific profit shifting determinants.[40] They find result which may provide insights on the design of anti-avoidance approach. This could be a handful research when government has prior indication about certain sector in which the MNEs have low compliance level or low reported profit that is dubious enough to be presumed that there are profit shifting practices. Having this kind of research would give direct use for policy makers

in prioritizing countermeasures formulation in certain area.

On the third base, which is in terms of country destination for BEPS practices, vital differentiation should be made at least in two aspects: first, adjustment regarding relevant affiliated MNEs existed between destination and home countries. Affiliated MNEs in home country have their affiliated MNEs located in different countries, with each MNEs might have distinct characteristics that are important to the formulation of research design. Therefore, determining the magnitude of profit shifting to specific country require comprehensive knowledge about MNEs corporate structure and their business nature. Second, which is more important, is incorporating the mismatch or loopholes existed between home countries and destination countries' tax system. By considering these two elements, research design could be specifically adjusted to measure specific BEPS scheme to certain destination.

These three basis for differentiating the research design and scope may be of crucially importance. We can get to narrowed BEPS scheme to be mapped and focused BEPS actors to be targeted, and from which we can produce a result that can give insight on what kind of countermeasures that could effectively eradicate the practices. Additionally, it also enable the government to formulate the countermeasures more efficiently. Davies et al (2014) finds that BEPS practices is strongly practiced by certain large MNEs in certain countries.[41] This is in contrast with general presumption which perceive that every MNEs have similar behavior in shifting their profit, thus concluding BEPS is widely practiced by many MNEs. Acknowledging BEPS behavior and decision-makings from certain main actors comprehensively would then potentially give government valuable ideas on benchmarking other actors.[42] This way, the government could produce countermeasures in efficient and effective way. In sum, insightful researches that have been previously done are summed in Table 2.

However, we should keep in mind that certain BEPS scheme could involve more than two countries. We should first define the definition of term 'destination'. It is possible that the country into which profit is shifted could act just as an intermediary country, not the final destination

38. See, for example, Jarle Moen, Dirk Schindler, Guttorm Schjelderup, and Julia Tropina, "International Debt Shifting: Do Multinationals Shift Internal or External Debt?" , *CESifo Working Paper Series* No. 3519 (2011).

39. Francis Weyzig, *Taxation and Development: Effects of Dutch Tax Policy on Taxation of Multinationals in Developing Countries* (Enschede: Ipskamp Drukkers, 2013), 89-115.

40. Sebastian Beer and Jan Loeprick, "Profit Shifting: Drivers of Transfer (Mis)Pricing and the Potential of Countermeasures", *International Tax and Public Finance* No. 22(3) (2014).

41. Lihat Ronald B. Davies, Julien Martin, Mathieu Parenti, and Farid Toubal, "Knocking on Tax Haven's Door: Multinational Firms and Transfer Pricing", *CEPII Working Paper* No. 2014-21 (2014): 10-18.

42. Lihat Peter Egger, Christian Keuschnigg, Valeria Merlo, dan Georg Wamser, "Corporate Taxes and Internal Borrowing within Multinational Firms", *American Economic Journal* No. 6(2) (2014): 26.

Table 2. Summary of Existing BEPS and Counter-BEPS Measurements

	Authors	Scope of Research	Dependent Variable	Results	
				Semi-Elasticity Coefficient toward CIT Rate Difference	Other Form of Coefficient/Result
Macro Approach	UNCTAD (2015)	104 countries before 2013	FDI *Inflow* (% PDB)	- 0,097	-
	IMF (2014)	103 countries, between 1980-2013	CIT Base (% PDB)	- 0,192 (Non-OECD countries) - 0,235 (low and middle income countries)	-
	UNCTAD (2015)	FDI data from IMF Coordinated Direct Investment Survey (CDIF)	FDI rate of return	-	0.115 (developing countries) and 0.054 (developed countries) responding to Offshore Indicator
	Crivelli, De Mooij and Keen (2015)	1980-2013 (173 countries)	CIT Base (% PDB)	- 0,34 (OECD countries) - 0,44 (Non-OECD countries)	-
Micro Approach	Hines and Rice (1994)	1982 (United States MNEs)	Corporate pre-tax reported profit	- 2,3	-
	Huizinga and Laeven (2008)	European countries before 1999	Corporate pre-tax reported profit	- 1,3	-
	De Mooij and Ederveen (2008)	European countries before 2005	Corporate pre-tax reported profit	- 1,2	-
	Clausing (2009)	US MNEs between 1982-2004	Corporate pre-tax profit	- 0.5	
	Dischinger (2010)	Affiliated company located in Europe, between 1995-2005	Corporate pre-tax reported profit	- 0,7	-
	Moen et al (2011)	German MNEs	Internal and external debt-to-asset ratio	Between - 0.294 to - 0.132	-
	Heckemeyer and Overesch (2013)	Various countries based on consensus, before 2013	Corporate pre-tax reported profit	- 0,8	-
	Weyzig (2013)	MNEs in many countries affected by Dutch tax system in 2005	Effective corporate tax abroad	-	5% of missed tax revenues (developing countries)
			Debt-ratio	–	The existence of debt securities increase debt ratio by 0.12%, while the existence of issuing SPEs increase debt ratio by 0.13%

Micro Approach	Dischinger, Knoll, and Riedel (2013)	European MNEs, between 1999-2009	Corporate pre-tax reported profit	- 0,5	-
	Lohse and Riedel (2013)	European MNEs, between 1999-2009	Corporate pre-tax reported profit	- 0,4	-
	B. Bawono Kristiaji (2015)	2005-2013 (developing countries)	Corporate pre-tax reported profit	- 1,2	-
	Blouin et al (2014)	54 countries, between 1982-2004	Debt-to-asset ratio	-	Thin capitalization rules reduce debt-to-asset's ratio between 1,9-6,3%
	Davies et al (2014)	400 MNEs in France	Intra-firm prices in France in 1999	-	Tax Authorities in France loss 3% of total corporate taxes collected
	Beer and Loeprick (2014)	World MNEs using ORBIS database	Corporate pre-tax reported profit	Between- 1.2 to - 0.52 depending on the corporate structure complexity and the existence of intangible asset	-

of the profit. It is reasonable, since advance tax planning could arrange a complex BEPS scheme in a way to allocate the profit of MNEs as efficient as possible across countries. Incorporating this circumstance might require more complex method of measurements.

4.3.3 Measuring BEPS Countermeasures with Micro Approach

Measuring BEPS countermeasures is equally important as measuring the magnitude of BEPS. A number of empirical studies are conducted to examine the effect of existing BEPS countermeasures. Two main characteristics of current existing BEPS countermeasures we should remind is that they are unilateral and distinctive in terms of its impact to every country. The same countermeasure could be effective for several countries and then unavailing in some other countries. Different business and tax landscape may affect the level of influence from similar countermeasure.

Several studies generate results showing that anti-avoidance countermeasures have reduced profit shifting through transfer pricing documentation[43] and interest limitations.[44]

These studies show positive effects of current law unilateral measures, indicating that BEPS behaviors is reduced through anti-avoidance rules implementation. In other occasion, OECD suggest that in G20 economies, countries with higher statutory tax rates do not necessarily have higher fiscal losses from profit-shifting practices if they have solid set of anti-avoidance rules as the countermeasures.[45]

OECD emphasize the importance to take into account the level of enforcement in assessing the effectiveness of BEPS countermeasures. The reason is that tax authorities may differentiate their level of enforcement for each regulation to balance the competitiveness of their tax system.[46] Another reason is that some tax authorities do not have the capacity to enforce their existing laws and regulation to tackle profit shifting practices.[47]

5. Currently-Feasible Options for Measuring BEPS and Its Countermeasures in Indonesia

Both methodology and the existence of data

43. Therese Lohse, Nadine Riedel, and Christoph Spengel, "The Increasing Importance of Transfer Pricing Regulations – A Worldwide Overview", *Oxford Center for Business Taxation Working Paper* No 12/27 (2012).

44. Jennifer Blouin, Harry Huizinga, Luc Laeven, and Gaetan Nicodeme, "Thin Capitalisation Rules and Multinationals Firm Capital Structure",

IMF Working Paper No. 14/12 (2014). See also, B. Bawono Kristiaji, "Incentives and Disincentives of Profit Shifting in Developing Countries", *Master Thesis for Tilburg University* (2015).

45. OECD, Opcit, 110.

46. OECD, *Measuring and Monitoring BEPS: Action 11 – 2015 Final Report* (Paris: OECD Publishing, 2015): 106.

47. *Ibid*.

Table 3. Data Classification Assessment in Indonesia

	Type of Data	Availability	Accessibility
Macro Data	National accounts	Available in Central Bank of Indonesia (BI)	Accessible
	Balance of payment	Available in BI	Accessible
	Trade data	Available in Ministry of Trade	Accessible
	Foreign direct investment (FDI)	Available in IMF	Accessible
	Corporate Income Tax (CIT) revenue	Available in Ministry of Finance	Accessible, but incomplete
Micro Data	Corporate financial information	Available	Available, but costly. There are useful data base including ORBIS, Bloomberg, Oriana and Osiris. However, these databases have different reporting requirements for accounting and tax purposes, and coverage is not extensive, particularly for Indonesia.
	Corporate tax return information	Available (collected and managed by DGT)	Not accessible
	Audit information	Available (collected and managed by DGT)	Not accessible
	Custom and excise data	Available (collected and managed by Directorate General of Customs and Excises (DGCE))	Not accessible

and information are both crucial in developing the feasible research.

5.1. Existing Data and the Relevance

Presently, there are not many options for Indonesia to measure BEPS. Currently available data are mainly macro data, while micro data are still very limited. Corporate tax revenue, FDI, current account, and trade data are the ones that are obtainable. These elementary data can still be utilized to conduct preliminary research, but further effort is certainly required to develop the findings and expand the knowledge. Table 3 summarize data classification assessment in Indonesia.

A well classified data will help policy makers as well as policy researchers to utilize existing tools and develop a structured research plan. Useful relevant recommendations could be made regarding data and monitoring tools for the future may involve matters both within the domain of tax policy and tax administration and the coordination of these units with related institutions who hold and manage databases that are important to the fruitfulness of the research efforts.

Concerning macro data, out of five choices above, CIT revenue is the one that is the most used in measuring BEPS. CIT revenue represents the impact BEPS practices more directly, which allows researcher easier to put effort in differentiating

BEPS practices from real asset allocation. FDI data is also preferable to be used, but researchers would get difficult in distinguishing profit shifting from normal transfers. UNCTAD (2015) identified profit shifting only by limiting the scope of only FDI flow that are using tax haven jurisdictions as the hubs of the FDI flow.

The most useful and practical data source comes from micro data, which provides more detail information which can be adapted to many form of research objectives. Accordingly, the most currently feasible data is corporate financial information data. It could be utilized to measure MNEs behavior in terms of profit reporting, asset-to-debt ratio, intra-firm pricing, or other potential indicators from which researcher can grasp knowledge about BEPS and its countermeasures effectiveness.

Information from corporate tax return and audit store huge potential for research advancement, but allowing such feasibility is complicated and need huge effort. Confidentiality regarding the use of taxpayers' information is regulated in Article 34 in The General Tax Provisions and Procedures Law. It would need comprehensive consideration about opening the possibility to use such information for limited research purpose. The same case also applies to custom and excise data, which contain potential use to identify or measure profit shifting

through trade mispricing[48], but possibly restricted for research purpose.

On the whole, one should note that the utilization effectiveness of these data are reliant to the support of non-tax data provision, such as economic data, financial or business data and governance information. These all are important to segregate BEPS-related practices from usual business activities that are blended in certain datasets, such as FDI, corporate tax base erosion, or reported profit. Classifying those type of data and bridging them to measurement tools would provide more accurate estimation and describe the nature of BEPS in relation with other factors.

5.2. Future Focus: Optimizing the Potential for Future Research

Given the classification described in Table 2, we can infer that the major limitation lies on micro-research data. There are very few MNEs data that publicly open their financial information, and almost none of them provide the data in detail. Some of their necessary data are provided in financial database, such as ORBIS, but only a small number of MNEs.

Furthermore, MNEs who are seeking investment from capital market and openly listed in Indonesia Stock Exchange (IDX) provide their necessary data to IDX and Financial Services Authority (OJK) confidentially and only for limited purpose. In addition, most of MNEs in Indonesia are not openly listed in Indonesian capital market, hence it is not ideal to put effort to open the data.

However, with the enactment of PMK 213, the government should anticipate new information provided by MNEs through transfer pricing documentation in the form of headquarter and country by country reporting documentation – aside from usual local documentation.[49] This availability means new data source is exist to advance BEPS measurement and magnitude. The data can help in in improving research development regarding risk assessment in identifying any transaction that potentially creates transfer pricing activities or other BEPS schemes.[50] But we should remind as well that the effectiveness of BEPS measurement have dependency to certain level on how effective the government could gain data from this regulation.[51] Government should then consider

the possibility to certain extent this valuable information could be obtainable or accessible for research purpose.

Accordingly, the future path of BEPS measurement is clearly dependent on the improvement of quality and relevance of available data to improve indicators and economic analyses of BEPS. In the current state of BEPS analysis, Fiscal Policy Agency (FPA) is still generally utilizing available data, with some data that actually already collected by other government institution – particularly DGT – are not incorporated due to there is no data integration between the two.

Although there are some new and innovative BEPS analysis, they are all significantly constrained by significant data limitations. The academic community has demonstrated its creativity in examining new dimensions of BEPS to explore with currently available data, but still, new data availability will bring huge benefit and extend the length of possible further BEPS analyses.

Hence, it means that improved data and tools are necessary if the global community is to obtain a clearer picture of the scale and impact of BEPS and properly monitor the effectiveness of the measures implemented by the government. The main goal is that in the future, better data would allow new and more refined indicators as well as refined economic analyses of BEPS and the effectiveness of BEPS countermeasures.

Principally, OECD described important features of 'better' data as follows[52]:

1. More relevant BEPS information (i.e. total MNE tax payments by country, tax residence of the entity rather than simply country of incorporation, related party transactions and structures).

2. More coverage of companies, countries, and MNE relationship, which include:

   • More complete set of companies (e.g. fewer missing entities and groups and better coverage across all countries).

   • More complete information from currently available company tax and non-tax records.

   • Clear identification of MNE companies on tax return forms, both domestic companies of foreign MNE parents and domestic parents of foreign affiliates. Improved linkages between related entities and overall MNE group information.

3. Increase access to available data for government

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48. Kimberley A. Clausing, "Tax-Motivated Transfer Pricing and US Intrafirm Trade Prices", *Journal of Public Economics* No. 87(2003).

49. See Minister of Finance Regulation (PMK) 213/03/2016 Chapter 2.

50. See UN, *United Nations Practical Manual on Transfer Pricing for Developing Countries* (New York: UN, 2013), 83-111 as quoted in B. Bawono Kristiaji, "Incentives and Disincentives of Profit Shifting in Developing Countries", *Master Thesis for Tilburg University* (2015): 89.

51. Darussalam and Ganda C. Tobing, "Rencana Aksi Base Erosion Profit

Shifting dan Dampaknya terhadap Peraturan Pajak di Indonesia", *DDTC Working Paper* No. 0714 (2014): 18.

52. OECD, Opcit, 251.

analysts and academic researchers under strict confidentiality and access requirements.

4. Increased data consistency across countries.

5. More timely information with shorter time lags.

Regarding current available data, restricted access – even among between government institutions – is one of the constraint. For instance, the DGT already collect a set of information regarding the tax affairs of MNEs and their affiliates. This kind of information is certainly a useful data source, as it contains rich information about MNEs reported tax payment, assets and other related information.[53] But similar like most countries, these documents are strictly confidential. The information collected is pooled internally for the principal function of tax administration and government tax policy consideration and advice. It could be beneficial if these information utilization could also be expanded for restricted research purpose.

Since policy formulation is formally held by FPA, which is a separated government unit from the DGT, such analyses with proper data provision is rarely done. FPA has access to data held in the DGT, but it should be done through permission granted by the Minister of Finance, causing inefficiency in the data flow and create risk that some simple but crucial data are not shared. Contrariwise, the DGT would also find difficulties to arrange comprehensive BEPS analyses, since they do not have necessary non-tax data that is provided in other government units.

It would give huge benefit if access to those data, particularly detailed tax return data, is automatically granted to FPA without the provision of direct instruction from the Minister of Finance. OECD offers solution that current available data should be compiled into an electronic database that is accessible by other government units. Practically, the DGT is advised to make electronic filing of corporate tax returns within which the provided information is systematically structured and easy to be accessed for research purpose.

Additionally, OECD also suggests that these complied data and documents done to be transformed into aggregated tabulation with anonymous identity that can be used for identifying BEPS practices.[54] Another solution was also proposed by UN (2013), suggested that the government need to develop special unit in international taxation for monitoring BEPS

activity.[55] The same case could also apply for tax audit information. These two sources contain rich information that have potential in enhancing BEPS research advancement.

Besides standardizing the data in the electronic system, the mechanism of collecting data from inside should involve searching for specific data item and then sorting into standardized categories. It would help to assist data processing for government analyst or researcher, and enable them to conduct necessary research. For further betterment, FPA then could make advice or recommendation for the DGT to add information column in the tax return to be filled by MNEs, so that the research and analyses could be preserved to keep developing and generate more insightful analysis about BEPS practices.

Given the large and expectedly soon-to-be expanded data base in the DGT, it is vital for every government units related in policy formulation to work more closely together to make better use of data that is already collected. In particular, statistical analyses based upon data collected under the comprehensive reporting by MNEs under PMK/213/2017 should be utilized as it can boost the economic analyses of BEPS.

5.3. Planning for Comprehensive Set of Researches: A Preliminary Suggestion

Along with the importance of data provision, a systematic plan for conducting sufficient set of researches is equally important. Setting the plan could be done in many ways. But taking aside consideration on how the most ideal plan should be, the essence is for policy makers to map a directed and proactive framework that could provide tactical platform, through which both insightful and applied knowledge about BEPS can be continuously generated to help BEPS countermeasures advancement. This prerequisite is vital, since BEPS behavior is not a static field, whose embodiments are already given and only need to be explored. On the contrary, since BEPS behavior is basically cultivated by profit motive, it will continually adapt and modify its forms depending on how related determinants are fused in forming the future business landscape.

What we could at least expect is that the complexity of current BEPS behavior will only get even more compound and multifaceted with the increasing integration of business across countries and the role of technology. In addition, changes in tax system abroad due to tax reform implementation

53. Michael McDonald, "Income Shifting from Transfer Pricing: Further Evidence from Tax Return Data", *OTA Technical Working Paper* No. 2 (2008): 11.

54. OECD, *Measuring and Monitoring BEPS: Action 11 – 2015 Final Report* (Paris: OECD Publishing, 2015): 249-260.

55. See UN, *United Nations Practical Manual on Transfer Pricing for Developing Countries* (New York: UN, 2013), 83-111 as quoted in B. Bawono Kristiaji, "Incentives and Disincentives of Profit Shifting in Developing Countries", *Master Thesis for Tilburg University* (2015): 89.

Figure 1. Suggested Path for Set of Researches Plan
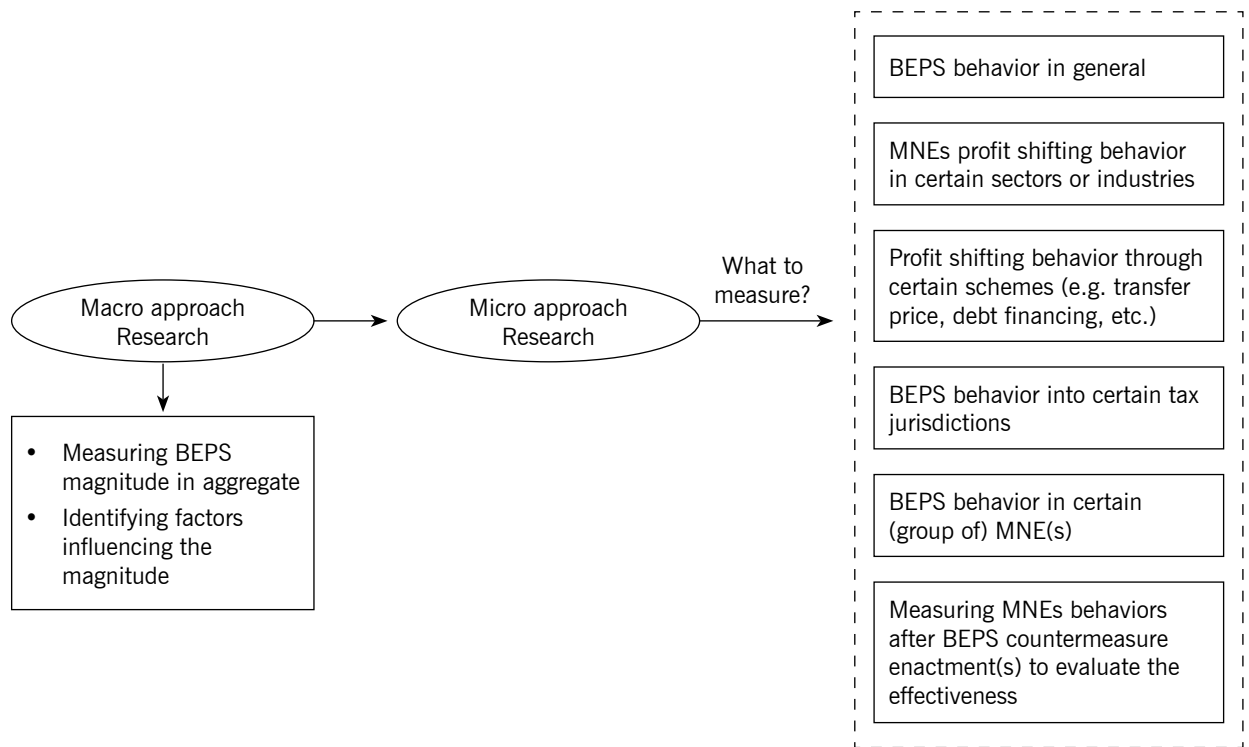
would potentially create new loopholes and may create further source of legitimate knowledge by shaping the existing epistemology of fiscal researchers.[56]

Thus, a long-term systematic research plan for measuring and monitoring BEPS along with the countermeasures in Indonesia is of crucial necessity. The urgency for policy makers is to be intellectually prepared in anticipating the evolvement of BEPS schemes and MNEs behavior in the future. Not only that it would help in guiding researchers to have link one research with another, it also indicate the data requirement that need to be provided in the future. It thus improves the efficiency and prevent data insufficiency when the research needs to be conducted. A useful principle describing path for research plan is depicted by Figure 1.

Having the various currently available methods reviewed with promising potential innovation in the future, several preliminary principles that could be valuable to guide the research plan. Basically, macro-approach research is a good epitome as a preliminary study before followed by micro-approach studies. It first confirms the existence of BEPS in the country, then it also gives general hint about how BEPS reacts against the

major determinants. It also gives idea on what kind of circumstance that would make such practices nourished and sustained. Overall, it gives the sense of urgency for policy makers to counteract it. These approach can utilize two kind of data: CIT revenue and FDI. Doing these research, nonetheless, should make extensive technical effort to differentiate the data movement caused by artificial financial practices and real business decision.

Built upon the groundwork set by macro-approach study, micro-approach ones could set a number of measurements that could be made in way to reinforce each other findings or results. They could start examining the dimensions of BEPS magnitude by measuring the scale of semi-elasticities due to the changes of factors providing incentives and disincentives for MNEs to artificially shift their profits. Afterwards, the research scope could be more narrowed into specific BEPS behavior in specific context and specific scheme as well. The deliberation could be based on necessities or presumption on areas where such practices might be heavily concentrated.

These studies then could be used to give insight in evaluating existing countermeasures or making ones. Taking it further, micro approach could be used to monitor the development of BEPS behavior, particularly on how it behaves against the countermeasures. In other words, micro approach gives us advantage when it comes

56. David E. Gray, *Doing Research in the Real World* (London: SAGE publications, 2004): 18-20.

to examine the effectiveness of countermeasures. Each countermeasure might require different research technique, moreover if the related BEPS practices is directly linked to hybrid mismatch, which heavily depends on changes of tax system of the associated countries.

The mixture between macro and micro approach should be mapped in a way to have constructed instruments that could illuminate BEPS behavior that currently is still conundrum. The objective of the explained plot above is first to provide first step in gaining profound knowledge about the spread of BEPS among various sectors and to examine the diverse behaviors along with the determinants. Second, which is also crucial, is to have early anticipation about necessary data and actions to be taken to make it feasible, including government institution data and information coordination and improving access to data, as explained in section 5.3.

6. Conclusion

The existence of BEPS is convincingly evident, but yet to be followed by the knowledge of its magnitude in a specific country, particularly Indonesia. Empirical literatures so far are yet to accurately measure the scale of the practices. The reason is basically three folds. First, substantively, it is difficult to incorporate all factors incentivizing BEPS practices into estimation model. Second, technically, it becomes problematic in determining the right sample and appropriate data type to be used. Third, data provision is still limited in Indonesia.

From current assessment on data and tools availability, it is identified that several important data for research purpose are available, but not accessible. For instance, information from corporate tax return, corporate financial report, tax audit are all available but strongly restricted with confidentiality protection. If related bodies who collect those information could reform it into anonymous information or loose the confidentiality for restricted research purpose, it would potentially bring huge contribution to the development of BEPS and counter-BEPS measurement.

In relation to that, a set of research plan is thus essential to ensure that the knowledge development would be built in a structured framework. It enables government (or external) researchers to anticipate necessary data that are currently not available or not accessible. But more importantly, such plan would contribute to the formulation process of effective countermeasures in tackling BEPS. It could potentially support the

government strategy in monitoring specific rules that are needed and also which regulation becomes the loophole exploited by MNEs to artificially shift their profit.

This paper provides introductory guide or basic principle that could be of consideration in setting the research plan. Preliminarily, macro-approach research is useful to measure the magnitude of BEPS in overall. Currently available data that can be used include CIT revenue as the basis to measure the government loss due to BEPS practices. Other variables can be utilized to help distinguishing BEPS practices from usual investment flow. Subsequently, micro-approach research is ideal to narrow the knowledge of BEPS behavior, particularly in identifying specific BEPS scheme or MNEs in certain sector. Research with this methodology is also favorable to measure the effectiveness of BEPS countermeasures, since each of them usually have their own specific purpose.

More-specific plan is clearly needed to produce clearer set of research plan. This paper provides ground clearance as a opening step for policy makers in collecting scattered research with various data and methodology that might help developing research methodologies and build a set of research plan that can provide insightful knowledge not only to provide effective BEPS countermeasures, but also to help research methodologies advancement into the next stage.

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