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Base Erosion and Profit Shifting: A Simple Conceptual Framework

Dhammika Dharmapala

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Dhammika Dharmapala*
University of Chicago Law School and CESifo
(dharmap@uchicago.edu)

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1) Introduction

The taxation of multinational corporations (MNCs) is an arcane topic that has traditionally been of interest only to a small coterie of specialists. Recently, however, it has attracted an unprecedented level of political attention and public interest. The leaders of the G-20 group of nations issued a communiqué following their meeting in Los Cabos, Mexico in June 2012, 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 [Organization for Economic Cooperation and Development] in this area."[1] This "ongoing work" – the OECD's initiative on "base erosion and profit shifting" (BEPS) – has led to a major report issued in February 2013 (OECD, 2013a) and to an action plan produced in July 2013 (OECD, 2013b). The latter consists of fifteen specific action items that are intended to facilitate multilateral cooperation among governments with regard to the taxation of MNCs, with the general objective of seeking to "better align rights to tax with economic activity" (OECD, 2013b, p. 11). In September 2014, the OECD released a set of recommendations to address seven of these action items (OECD, 2014).

The aim of this paper is to present a simple conceptual framework that illuminates aspects of the BEPS phenomenon and governments' responses. In particular, the paper seeks to clarify the types of circumstances in which multilateral initiatives - such as that currently being pursued by the OECD - may enhance the welfare of nations. A companion paper (Dharmapala, 2014) surveys the empirical literature seeking to estimate the magnitude of tax-motivated income-shifting (i.e. BEPS) within multinational firms. A major conclusion from this survey is

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[1] The full text of the G-20 communiqué is available at:
http://www.telegraph.co.uk/finance/g20-summit/9343250/G20-Summit-communique-full-text.html

that the more recent empirical literature uses new and richer sources of data to find a magnitude of BEPS that is much smaller than that found in earlier studies. A representative "consensus" estimate from the recent literature is a semi-elasticity of reported income with respect to the tax rate differential across countries of 0.8. This implies that a 10 percentage point increase in the tax rate difference between an affiliate and its parent (for example, 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). Dharmapala (2014) also provides a framework for interpreting the implications of these findings for policy towards BEPS, and highlights the importance of existing legal and economic frictions as constraints on BEPS.

Perhaps the most fundamental of the conceptual issues raised by the BEPS initiative are the questions of *why* and *for whom* BEPS constitutes a problem. The G-20 communiqué noted above takes as self-evident the "need to prevent BEPS." Yet, national governments (have available a wide variety of legal instruments to reduce or prevent BEPS. If the "need to prevent BEPS" is so pressing, some explanation is required as to why governments have not unilaterally taken more extensive steps in this direction. The OECD's (2013a, b) answer is that BEPS arises primarily because of inconsistencies between the tax laws of different jurisdictions; these inconsistencies create (largely unintended) opportunities for firms to reduce tax liabilities. This is a variant of the "double nontaxation" problem – i.e. that MNCs may generate income that is not taxable under the laws of any jurisdiction – that has long exercised the minds of international tax scholars. This perspective certainly captures a significant element of the BEPS phenomenon, but arguably it underemphasizes the role of governments' strategic incentives in favor of stressing the limitations of governments' technical and legal capacities.

With regard to the question of *for whom* BEPS is a problem, the OECD (2013a) points, unsurprisingly, to governments and to other taxpayers, including purely domestic firms that lack access to the BEPS opportunities open to MNCs. It is worth noting, however, that the impact on other taxpayers of greater tax burdens on MNCs depends in part on the incidence of the corporate tax – i.e. whether workers bear a substantial share of the burden in the form of reduced wages. This issue is the subject of an ongoing debate in the empirical literature (e.g. Arulampalam, Devereux and Maffini, 2012) that is unlikely to be resolved within the timeframe of the BEPS action plan. It is also important to clarify that the asymmetries between MNCs and purely domestic firms are harmful only to the extent that they give rise to distortions in ownership patterns that reduce productivity. It is difficult to argue that these asymmetries have any implications for fairness, as shareholders can generally purchase shares in MNCs as well as in purely domestic firms. More surprisingly, the OECD (2013a) also claims that MNCs themselves may be harmed by BEPS, for instance, if there are reputational costs to tax avoidance. However, it is not entirely clear why MNCs would fail to internalize purely private costs of tax planning, such as reputational losses.[3]

Section 2 presents a simple framework that addresses some of these conceptual issues. Its implications for understanding the potential gains from the BEPS initiative are discussed in Section 3, while Section 4 concludes.

2) A Simple Conceptual Framework

The OECD's (2013b) proposed solutions to BEPS focus on various forms of multilateral coordination and cooperation. Implicitly, it takes the view that multilateral cooperation can make countries collectively better off. It is thus helpful to seek to understand more precisely the circumstances in which multilateral cooperation can enhance countries' welfare. This paper presents a simple example that illustrates one such set of circumstances. It emphasizes countries' incentives to maximize national welfare, rather than unintended interactions between different countries' tax laws (important though such interactions may be in many respects).

The distinction between "residence" (or "home") countries and "source" (or "host") countries is fundamental to international taxation. The former are countries in which MNC parents are headquartered. The precise criteria for determining the residence country of an MNC vary depending on the laws of the relevant jurisdiction. Most commonly, MNC residence is based on the jurisdiction in which the MNC parent is incorporated, or on the location of its management activities. Source countries are those in which MNC affiliates (including the parent as well as its subsidiaries) undertake business activity. The income generated by normal business operations in the source country is referred to as "active" business income, whereas income received from other sources unconnected to normal business operations (such as interest income) is referred to as "passive" income. In general, both residence and source countries may claim the

[3] In principle, MNCs may become trapped in a tax avoidance "arms race", but it seems likely that reputational losses would depend on a firm's behavior *relative* to other firms, and so would not be incurred in these circumstances.

power to tax the same income, and many of the principles of international taxation have the aim of avoiding or mitigating such “double taxation”.

Residence countries with “worldwide” tax systems impose tax on the active foreign business income of resident MNCs (generally with a credit for taxes paid to the source country). It is more common, however, for residence countries to use “territorial” (or “exemption”) systems, in which the “active” foreign income derived by resident MNCs from foreign business operations is exempt from residence country taxation (so that this income is only taxed by the source country). Even territorial residence countries may, however, tax the passive foreign income earned by their resident MNCs in low-tax foreign jurisdictions. The tax law provisions that impose such taxes are known as “controlled foreign company” (CFC) rules, because they pertain to foreign affiliates in which the resident MNC parent holds an ownership stake that exceeds some specified level (such as 50%).

In general, corporate tax systems permit deductions for interest payments on debt, and this principle applies to source countries’ treatment of interest payments made by local affiliates of MNCs. However, these deductions may be limited in certain circumstances, for example if the ratio of the local affiliate’s debt to assets exceeds some specified threshold. Source countries often impose limitations of this type, which are known as “earnings stripping” (ES) rules because they are intended to prevent the shifting (or “stripping”) of income from the source country to a tax haven through the use of debt. In the absence of ES rules, a local affiliate in a high-tax country could borrow from a haven affiliate of the same MNC group, thereby generating interest deductions that reduce its taxable income in the high-tax country. ES rules pertain especially to inter-affiliate debt (within the same MNC group) but may also apply more generally.

Assume a world with four countries. Two of these - countries A and B - are residence countries of MNCs, and also serve as source countries for MNC operations. One of the countries (C) is purely a source country with no resident MNCs, while the fourth country is a tax haven (H). However, only the governments of countries A and B and the MNCs resident in those countries are assumed to make strategic choices; countries C and H play only a passive role. There are two assets located in country A (denoted a1 and a2), and two assets located in country B (denoted b1 and b2). There are two MNCs – Firm A (resident in country A) and Firm B (resident in country B); MNC residence is assumed to be fixed.

Firm A can generate $50 of (pretax) profits in each of countries A and B by owning both a1 and b1, while Firm B can generate $50 of (pretax) profits in each of countries A and B by owning both a2 and b2. Each asset generates zero profit if owned by any other owner. These assumptions reflect the ownership effects on productivity that are strongly emphasized in the general literature on MNCs, and that have been introduced into the literature on international taxation by Devereux (1990) and Desai and Hines (2003). There is a supply of assets in C that (for the same cost of acquisition as each of a1, a2, b1 and b2) generate pretax profits of $45 each; assume these are domestically owned by country C firms as the default scenario. There are no "real" assets located in H, but H can be used (if the relevant tax laws permit) to shift income from any of the other jurisdictions,[4] at a cost of $2 (incurred for each affiliate that shifts income out). Countries A, B and C all have a (fixed) corporate tax rate of 20%, while H has a zero tax rate. All countries are assumed to have territorial tax systems.

A natural characterization of national welfare for countries A and B in this framework is that it is the sum of the after-tax profits of the resident MNC and tax revenue from all sources. For example:

National welfare of country A = After-tax profit of Firm A + Tax revenue of country A

The government may care about its resident MNC's after-tax profits because the firm's ownership is primarily by domestic shareholders, consistent with the familiar "home bias" in equity holdings. For simplicity, the weight placed by the government on revenue is assumed to be the same as that on the after-tax profits of the resident MNC. More generally, the government could place, for instance, greater weight on tax revenue.

The policy choices available to governments in this example are the following. Residence countries (A and B) can impose controlled foreign corporation (CFC) rules that pertain to their resident MNCs, while source countries (A, B and C) can impose earnings stripping (ES) rules on local affiliates (including parents' domestic operations). As discussed above, CFC rules impose residence country taxation on passive foreign income earned in low-tax foreign jurisdictions, while ES rules limit the deductibility of interest payments.

[4] For discussions of the role of tax havens, see e.g. Dharmapala (2008) and Dharmapala and Hines (2009).

First, consider a scenario in which there are no CFC rules or ES rules. An efficient pattern of ownership will prevail, where Firm A owns a1 and b1 and generates $100 of pretax profit, while Firm B owns a2 and b2 and generates $100 of pretax profit. Each affiliate shifts all income out to H (for instance, by injecting equity into its H affiliate, which then lends the money to the A and B affiliates, with the latter receiving interest deductions that eliminate taxable income in A and B). As shown in Table 1, each firm has after-tax profit of $96 ($100 minus the $2 cost of profit-shifting at each affiliate), while revenue is zero for each country.

Now, suppose that country A unilaterally introduces a CFC rule. This entails that country A taxes interest income earned by Firm A in its H affiliate. Firm A will no longer shift income, so it generates $100 of pretax profit, incurs zero tax planning costs, and pays tax of $10 to A and $10 to B. Note that ownership patterns are not distorted here. An alternative possibility for Firm A is to invest in country C. However, country A's CFC rule eliminates any incentive for Firm A to shift income out of C; thus, investing in C would generate pretax income of $90 and after-tax income of $72, which is less than the $80 earned after tax by owning assets a1 and b1.

Country A's payoff from unilaterally introducing a CFC rule is $90 - the sum of the after-tax profit of Firm A ($80) and the $10 in revenue that it collects from Firm A's domestic operations - whereas its payoff from not doing so is $96 (see Table 1), so it is clear that countries do not have any incentive to unilaterally introduce CFC rules. Country B's payoff increases to $106 (the after-tax profit of Firm B is still $96, while country B now receives $10 of revenue from Firm A's affiliate in country B). By unilaterally imposing a CFC rule, country A is in effect transferring revenue to a foreign treasury (thereby reducing national welfare), without any offsetting increase in the revenue it derives from the local affiliates of foreign MNCs. Moreover, the CFC rule does not result in revenue for the residence country from taxing foreign income, as its firm (Firm A) prefers to forego tax planning and pay tax to the foreign treasury (rather than shifting income from country B to H and then paying tax to A under the CFC rule). This is because tax planning entails a positive cost, and it is assumed that Firm A cares only about its after-tax profits and not about which government receives its tax payments. As the CFC rule generates no revenue from taxing foreign income, country A will not unilaterally introduce a CFC rule even if it places somewhat greater weight on tax revenues than on Firm A's after-tax profits (although for a sufficiently large weight on tax revenue, a CFC rule may become unilaterally optimal).

Suppose that countries A and B find some mechanism through which to cooperate, and that both countries simultaneously impose CFC rules of the type described above. Then, ownership patterns will continue to be efficient. Firm A will earn $100 of pretax profit, incur zero tax planning costs, and pay $10 tax to each of countries A and B. Firm B will do likewise. Thus:

Country A's payoff = Firm A's after-tax payoff (80) + Revenue (10 + 10) = 100

Country B's payoff = Firm B's after-tax payoff (80) + Revenue (10 + 10) = 100

As shown in Table 1, both countries are better off if they can each commit to introducing a CFC rule.

This conclusion may seem to be in tension with the well-established notion that countries seeking to maximize national welfare should encourage their resident MNCs to avoid foreign taxes, as tax payments to foreign governments reduce national welfare. Indeed, Shaviro (2011) has recently developed a critique of the foreign tax credit in US tax law, partly on the grounds that it disincentivizes US MNCs' avoidance of foreign taxes. However, the crucial difference here is that multilateral cooperation entails that the CFC rules generate revenue from the local affiliates of foreign MNCs at the same time that they entail higher tax payments by resident MNCs to foreign governments. Thus, this simple example takes account of the contemporary reality that most large economies are *both* residence and source countries. Multilateral adoption of CFC rules transfers money from a country's MNCs to foreign treasuries, but also from foreign-owned MNCs to its treasury. In the example, these effects balance out exactly, with the savings in tax planning costs generating a global surplus from multilateral cooperation.[5]

The reasoning for why unilaterally introducing an ES rule is not in each country's interest is more complex, though also intuitively straightforward. Suppose that country A were to unilaterally impose an ES rule that is sufficiently strong to preclude all earning stripping (for instance, by completely denying deductions for interest payments to the H affiliate). This affects all affiliates located in country A (i.e. the owners of a1 and a2). If Firm A continues to own a1

[5] This outcome can be viewed as an example of Shaviro's (2006) general argument that global welfare norms may sometimes promote national welfare if adopted multilaterally.

and b1, then it will earn $48 after-tax (as before) from b1. However, it will not be able to shift earnings out of a1, so its after-tax profit from a1 is $40 (paying $10 tax to country A, but incurring no tax planning cost). Instead, if it were to buy an asset in country C, it would earn $45 pretax, incur $2 in tax planning costs, and shift all income to H, so that its after-tax profit is $43. Thus, Firm A will choose to buy assets in country C, and will have only a notional presence in its country of residence (A). Similarly, Firm B will buy an asset in country C instead of buying asset b1 in country A, earn $45 pretax, incur $2 in tax planning costs, and shift all income to H, earning an after-tax profit of $43. This represents an inefficient pattern of ownership from a global perspective, as Firms A and B are the most productive owners of assets a1 and b1, respectively. Country A's payoff from unilaterally introducing an ES rule is $91 (the after-tax profit of Firm A (48 + 43), with revenue of zero), whereas it receives a payoff of $96 from not unilaterally introducing an ES rule. Thus, countries do not have any incentive to unilaterally introduce ES rules.

If countries A, B and C were all to cooperate in imposing (source-based) ES rules, it would be possible to replicate the "good" outcome in Table 1. However, this would require that country C is also part of the multilateral agreement, entailing broader international cooperation than required for (residence-based) CFC rules. The OECD (2013b) appears to favor a combination of residence-based and source-based solutions. For example, action item 3 of the BEPS action plan is for residence countries to strengthen CFC rules (OECD, 2013b, p. 16). On the other hand, Fuest *et al*. (2013) point to difficulties with residence-based taxation and instead argue for extending source-based taxation to reduce BEPS.

This example, of course, is purely illustrative, and a number of important caveats are in order. First, it is intended not as a description of reality, but as an illustration of a set of circumstances that would explain the BEPS phenomenon and the current BEPS initiative in a coherent way. Whether or not conditions in the real world correspond to the assumptions required to render multilateral cooperation beneficial remains very much an open question.[6] Second, the optimality of CFC rules in the example depicted in Table 1 is not intended to serve as an argument for worldwide rather than territorial taxation. There may well be compelling

[6] An alternative perspective on BEPS is that it may be optimal for governments to permit BEPS activities as a way of differentially taxing firms that are more and less mobile or tax-sensitive, where this characteristic is unobservable to governments (see Hines (2007) and Dharmapala (2008) for discussions of this possibility, and Hong and Smart (2010) for a formal theoretical model). Within this perspective, it is less clear than in the example above whether there would be substantial gains from multilateral cooperation.

reasons for exempting active foreign income from residence-based taxation (see e.g. Desai and Hines (2003)) that do not necessarily apply to the types of passive foreign income that are subject to the CFC rules contemplated in the example above.

3) The Potential Gains from the BEPS Initiative

It is clear from the political discourse surrounding BEPS that much of the public concern about this issue stems from the perceived potential revenue losses from BEPS activity,[7] from concerns about how BEPS activity affects the distribution of tax base and tax revenue across countries, and from perceptions regarding fairness across different taxpayers. While these concerns are understandable, for economists the primary potential gains from the BEPS initiative arise instead from the prospect that it may reduce deadweight costs associated with MNCs' tax planning and compliance activities.

Two types of inefficiencies are especially relevant. The first relates to the real resources expended in tax planning and compliance. These represent a source of deadweight costs that perhaps should be understood primarily as a misallocation of talent - for example, where someone who could have been another Mozart or could have found a cure for cancer instead toils away producing transfer pricing documentation. Reducing these deadweight costs can generate gains for all countries; in the example above, this is the source of the potential benefits from the BEPS initiative.

In addition, when MNCs have differential access to BEPS opportunities, it is possible that the ownership of assets by MNCs may be distorted by tax considerations (see e.g. Devereux (1990); Desai and Hines (2003)). One such possibility – involving one country imposing ES rules while the other does not (albeit off the equilibrium path) – has already been discussed above. In circumstances more complex than those in the example above, it is possible that some residence countries may unilaterally impose CFC rules while others do not. Then, MNCs resident in the former countries may be at a competitive disadvantage in acquiring assets relative to those resident in the latter countries; this may in turn lead to ownership of assets by firms that are not (in pretax terms) their most productive owners. Harmonizing tax rules (so that, for

[7] Consider, for example, the statement that: "In a context of severe fiscal consolidation, the G20 leaders have identified the need to address BEPS as one of their priorities." (OECD, 2014, p. 4).

instance, all residence countries adopt similar CFC rules) may eliminate the inefficiencies from differential access to BEPS opportunities and so enhance global welfare.

Compared to these unambiguous potential gains from reducing deadweight costs, the benefits of increasing or redistributing tax revenues *via* the BEPS initiative are much less clear. Corporate tax revenues represent a relatively small fraction of total revenues for the governments of most developed countries - for instance, 7.4% of total revenue for the UK in 2012.[8] Moreover, this has been true for a substantial period of time, with corporate tax revenue measured as a fraction of GDP being relatively stable over time (see e.g. Hines, 2007; Dharmapala, 2008; OECD, 2013a, p. 16). Thus, it is unlikely that BEPS activity by MNCs is a major factor in determining the overall level of tax revenue in developed economies.[9] Alternative sources of revenue that are much less mobile than the income of MNC affiliates - such as the personal income tax and the VAT - are readily available. While there may be distributional consequences of switching to different sources of revenue, these depend in part on the still empirically unresolved issue of corporate tax incidence (e.g. Arulampalam, Devereux and Maffini, 2012).

For similar reasons, it is unlikely that BEPS activity substantially affects the distribution of tax revenue across the governments of (nonhaven) developed countries. On the other hand, developing countries typically derive a substantially larger fraction of tax revenue from the corporate tax, and may have limited ability to switch to other forms of taxation. Indeed, it is sometimes claimed that developing countries are especially vulnerable to BEPS activity. This situation may give rise to a distribution across countries of tax base and tax revenues that could be viewed as being normatively undesirable. In a context characterized by bilateral and multilateral aid flows across countries, however, there may be rather more direct solutions than the BEPS initiative. If the perceived problem is that OECD governments end up with "too much" tax revenue, then increasing aid flows can directly address this. If the perceived problem is instead that MNCs (with shareholders residing predominantly in developed countries) end up with "too much" after-tax profit, this can be addressed by the governments of developed countries imposing higher personal taxes on these shareholders and transferring the proceeds in

[8] See "A Survey of the UK Tax System" IFS Briefing Note BN09, p. 5, at: http://www.ifs.org.uk/bns/bn09.pdf

[9] It is possible that the counterfactual pattern of corporate tax revenues (in the absence of BEPS activity) may involve a rising fraction of corporate tax revenue to GDP. However, given the stability of this fraction over a fairly long period of time, it is difficult to argue that such a counterfactual increase would have been so large as to make a dramatic difference to overall tax revenue.

the form of aid.[10] One might doubt the political feasibility of such increases in direct transfers. However, it is then unclear why achieving similar redistribution *via* the BEPS initiative should be viewed as being politically more feasible.

In the stylized example above, the cooperative imposition of CFC rules results in higher tax revenues. However, it is important to emphasize that the cooperative surplus is due *not* to this increase in revenue (as MNCs' after-tax profits are assumed to be just as socially valuable as tax revenue), but rather from the reduction in deadweight costs that occurs because MNCs no longer incur costs of tax planning. This underlines the point that the potential gains from the BEPS initiative should be viewed as arising primarily from the reduction of deadweight costs.

4) Conclusion

The unprecedented attention being paid to the issue of base erosion and profit shifting creates opportunities for important reforms. This paper provides a simple conceptual framework that helps to clarify aspects of governments' responses to the BEPS phenomenon and the potential role of the OECD initiative. An important implication of this framework is that multilateral cooperation of the type envisaged in the BEPS initiative has the potential to reduce the deadweight costs of MNCs' tax planning and compliance activities, thereby enhancing global welfare.

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[10] For example, suppose that Firm A (resident in developed country A) generates $50 in developing country D, all of which is shifted to a haven. Then, assume that country A introduces a CFC rule that leads Firm A to pay $10 of tax to country D. There will be an increase in global welfare due to reduced tax planning costs, but the inter-country distributional consequences – the extra $10 of revenue to country D – could be replicated by an increase in bilateral aid from country A to country D of $10 (assuming that Firm A's shareholders all reside in country A and that they bear the full incidence of the tax). Thus, the BEPS initiative seems an unnecessarily complicated mechanism through which to achieve this distributional objective.

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Table 1: Payoffs of Countries A and B

		Country B	
		CFC Rule	No CFC Rule
Country A	CFC Rule	100, 100	90, 106
	No CFC Rule	106, 90	96, 96

Readers with comments should address them to:

Professor Dhammika Dharmapala
dharmap@uchicago.edu

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