“FAR” to “FAIR”: Countering Environmental Damage by Making Transfer Pricing Fairer and More Equitable

Externality factors such as environmental pollution are comparability factors that remain invisible under existing transfer pricing rules. A separate evaluation of these externality factors will enable a more accurate determination of the arm’s length price and may lead to redistribution of intra-group profits to polluting constituent entities, thereby augmenting revenue of jurisdictions that bear the environmental costs.

1. Introduction

In an increasingly homogenous world today, there is high mobility of assets and employees. Digitalization has also enabled engagement by corporations in remote jurisdictions. Multinational enterprises (MNEs) are capitalizing on this mobility and remote engagement by structuring global value chains to exploit location savings in jurisdictions and thereby minimizing their global costs.1 Back-office corporate services and manufacturing are being outsourced to developing countries, while high-end research and development activities along with ownership of key intangibles is being retained in parent jurisdictions.

Aside from location savings, there is evidence that corporate structures also selectively outsource polluting parts of the value chains to developing countries. Many authors have noted that despite the carbon footprint of a particular MNE is decreasing in the parent jurisdiction, the overall carbon footprint of the company is increasing. For example, Zhang et al. (2020) have noted that despite declining carbon footprints of developed-country-based MNEs, there has been a notable increase in carbon trans-

The conditions and economically relevant circumstances (or comparability factors) in relation to the controlled transaction as well as the comparable transaction are thus central to transfer pricing. The OECD Guidelines specify these conditions and economically relevant circumstances as follows:2

- the contractual terms of the transaction;
- the functions performed by each of the parties to the transaction, taking into account assets used and risks assumed, including how those functions relate to the wider generation of value by the MNE group to which the parties belong, the circumstances surrounding

4. OECD. OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations 2020 Ch. 1 sec. D1 1 (2022), Primary Sources IBFD [hereinafter OECD Guidelines].
5. Id.
the transaction and industry practices ("FAR" analysis);
- the characteristics of property transferred or services provided;
- the economic circumstances of the parties and of the market in which the parties operate; and
- the business strategies pursued by the parties.

There is no separate evaluation of the externalities or environmental damage caused by the transacting parties or by the comparable entities in relation to either the controlled or comparable transactions and they remain invisible for transfer pricing purposes.

This article suggests that the existing transfer pricing approach should be modified to account for externalities and that the modified rules should lead to redistribution of group profits to jurisdictions where the polluting entities are situated. There is an inherent justification for this modified approach, since externalities are economically relevant in a business arrangement.

Such an approach will also disincentivize selective outsourcing of pollution and augment revenue for the jurisdictions bearing the brunt of pollution. The additional revenue can be used to mitigate the environmental damage being caused. This will also complement conventional approaches to mitigate environmental damage through taxation such as Pigouvian taxes. To the best of the authors' knowledge, the use of transfer pricing to reallocate additional profits and taxing rights to the location of polluting subsidiary has not been discussed in detail before.

In section 2, the authors discuss how higher profit allocation to polluting entities will complement conventional taxation measures to mitigate environmental damage. Sections 3 and 4 deal with the reasons why externalities must be independently accounted for in transfer pricing and the possible methodologies for implementing this alternate approach. Section 5 summarizes the arguments made in this article.

2. Higher Profit Allocation to Polluting Entities in an MNE Complements Conventional Pigouvian Tax-Based Approaches on Tax and Environment

2.1. The problem with Pigouvian taxes and the Pollution Haven effect

The conventional approach to mitigate negative externalities is through Pigouvian taxes, which essentially manipulate the per-unit costs of a good or service to capture negative externalities. Such taxes serve two purposes: on the one hand, higher transaction costs create an incentive for switching to "cleaner" transactions with a lower carbon footprint, while on the other, such taxes provide additional resources to governments to invest in clean energy projects.

A significant drawback of Pigouvian taxes is that they do not take into account the mobility of negative externalities across jurisdictions through corporate structures. This has led to formulation of the "Pollution Haven" hypothesis by Copeland and Taylor (1994), which states that firms seek to avoid the cost of stringent environmental regulations by relocating their polluting activities to countries where environmental norms are laxer, which are usually developing countries. In other words, levy of Pigouvian taxes in the parent jurisdiction may not provide an economic incentive to switch to cleaner technology but may instead provide an incentive to shift the polluting part of the value chain to a jurisdiction where the norms for levy of Pigouvian taxes are less stringent, or entirely absent.

For example, stricter environmental regulation and Pigouvian taxes in the parent jurisdiction may cause an MNE to outsource the polluting parts of the manufacturing process and all associated externalities to a country where such regulation is lax. While the pollution caused by the MNE in the jurisdiction of the parent will reduce, the total global pollution footprint would remain unaffected and may even increase. From the parent jurisdiction's standpoint, the environmental regulation is successful. However, from a global standpoint, the pollution has just been transferred from the parent jurisdiction to the subsidiary jurisdiction. Further, the incentive to shift to cleaner technology is reduced and the aim that firms' output will be based on a marginal cost that includes the cost of externality will not be achieved.

Though the Pollution Haven hypothesis has not been conclusively proven empirically, recent studies have shown results supporting it. Dennis Dlugoschi and Tomasz Kozluk (2017) have found tentative evidence that the negative effects of rising energy prices on investment can be largely attributed to tightening upstream environmental policies. Xiaoyang Li and Yue M. Zhou (2017) have examined the role of firm strategy in the global effort to combat pollution, they have found that US-based plants release less toxic emissions when their parent firm imports more from low-wage countries. Yuwan Duan, Ting Ji and Tuotuo Yu (2021) have found a Pollution Haven effect in value-added trade by fully considering the global value chains. Their results suggest that global value chains are evolving into "global pollution chains" where high-income countries offshore their emissions to low-income countries by outsourcing only the dirty production stages instead of the entire production process.

References:

6. FAR. Functions performed, assets employed and risks assumed.
2.2. Countering the Pollution Haven effect through intra-group profit allocation

The Pollution Haven problem will be enhanced if we ignore the impact of the externalities in intra-group profit allocation. Since profit distribution is governed by visible comparability factors only and does not take into account the pollution caused, the Pollution Havens will not get any extra compensation for their additional burden on account of negative externalities. Even though the MNE is maintaining its negative externality intensity, it is reducing its burden of Pigouvian taxes in the original jurisdiction and avoiding paying any additional tax in the Pollution Haven as well.

Allocation of a larger share of the global profits of the MNE to such polluting subsidiaries would help to counter the incentive to outsource pollution to developing countries, since the effective tax rate of the MNE group will increase, as Pollution Havens are mostly developing countries which generally have higher corporate tax rates. A higher revenue base in these countries can also be used for environmental damage mitigation.

This is an extension of the "polluter pays" principle. Using externalities in an MNE to redistribute profits and hence taxation rights on these profits to jurisdictions where the polluter is located ensures that the polluter not only pays but pays to the jurisdiction most affected.

To summarize, when externalities are created by companies or entities operating entirely within national borders, Pigouvian taxes can, to an extent, neutralize the impact of such externalities. However, when such externalities are mobile across jurisdictions in an MNE group, Pigouvian taxes may instead create perverse incentives to outsource pollution to developing countries. Thus, to be effective, they need to be complemented by allocation of higher profits and revenue to jurisdictions where pollution has been outsourced.

3. Externalities Are Economically Relevant for the Business and Should Be Considered Independently in Profit Allocation through Transfer Pricing

3.1. Externalities are economically relevant for a business and lead to value creation

As mentioned in section 1., under the existing international taxation framework, profit (and taxing rights on such profit) is allocated within an MNE using transfer pricing and the arm’s length principle. Such an approach is not only used for the purpose of determining taxation rights but is helpful in the internal management framework of MNEs as well. Analysis of all economically relevant characteristics (or comparability factors) of the controlled and comparable transactions and the transacting parties’ forms one of the core components of the entire transfer pricing approach. These characteristics help to delineate different international transactions involved in a business arrangement, characterize the transacting entities and identify comparable uncontrolled transactions.

MNE behaviour reveals that externalities are part of the business strategy in deciding corporate structures. Further, they are generated as a by-product of the functions performed, assets used, and risks assumed in a jurisdiction. Externalities are also independent value generators for an MNE, and it is a settled principle that outcomes of transfer pricing should align with value creation. On this basis, externalities can be said to be economically relevant in a business arrangement.

Thus, analysing externalities for transfer pricing purposes is essential and given their significance, ignoring them would lead to an erroneous determination of the arm’s length price, since the value generated from the environmental costs is ignored.

For example, a manufacturing subsidiary of an MNE may be discharging harmful industrial effluents in the local environment, the value of a product manufactured by such a subsidiary is captured not only by the visible value drivers and costs incurred by the MNE but also by the invisible environmental damage caused by its business process. Ignoring these invisible costs as important comparability factors under transfer pricing will lead to an erroneous calculation of the arm’s length price of the controlled transactions.

3.2. Externalities should form a separate subcategory in the FAR analysis under economically relevant characteristics

While externalities can theoretically be analysed under various categories of comparability factors such as business strategy or economic circumstances in the market of operation, combining them as a separate subcategory of the FAR analysis is the most logical option. This is because externalities are generated from the functions performed, assets used and risks assumed.

At present, the FAR analysis consists of evaluating “the functions performed by each of the parties to the transaction, taking into account assets used and risks assumed, including how those functions relate to the wider generation of value by the MNE group to which the parties belong, the circumstances surrounding the transaction, and industry practices” and externalities remain invisible. For example, in the case of the manufacturing subsidiary polluting the local environment, in the conventional FAR analysis only visible manufacturing functions, assets and risks would be analysed, e.g. functions like procurement of raw materials, production scheduling, assembly line functions, inventory management, freight management, etc. would be considered while functions leading to discharge of effluents would be ignored. Similarly, while analysing tangible and intangible assets utilized, consid-
eration would only be given to the tangible assets utilized in the manufacturing process and the process and product know-how; leverage of the environment by the manufacturing entity will not be considered as assets utilized by the entity. Further, risks associated with externalities will be ignored in favour of the more visible production-related risks.

Thus, a separate subcategory is required to ensure that externalities are considered under the FAR analysis, and perform an analysis of the Functions performed, Assets utilized, Invisibles generated and Risks assumed (FAIR analysis) instead.

A FAIR analysis will lead to a more accurate determination of the arm’s length price. First, the characterization of each transacting party would be more nuanced and accurate. For example, a manufacturing entity utilizing a production process with minimal environmental harm would have a different functional profile compared with a polluting entity, which can only be distinguished using a FAIR analysis. Second, in some cases, externalities may also delineate additional international transactions in a particular business arrangement. For example, in the case significant pollution-related externalities of the manufacturing entity are effectively controlled and managed by its associated enterprise located in another jurisdiction, one may consider this either as a hidden aspect of the existing business arrangement or even as a separate controlled international transaction if the polluting activity is significant. Finally, analysis of externalities will enable an adjustment for material differences due to externalities in comparable uncontrolled transactions. For example, entities in the same business universe may be differentiated on their differential treatment of externalities, i.e. an entity harnessing a production process which does not create significant pollution or damage is not directly comparable to one that is generating negative externalities and the difference in their business profile would be material for their profit margins. An adjustment for the environmental impact would enable more accurate comparison.

4. Methods to Arrive at the Arm’s Length Price while Considering Externalities

In the determination of the arm’s length price, the main role of externalities would be in influencing the transfer pricing method to be used and selection of comparable entities. It will also play a limited role in the delineation of controlled transactions.

4.1. Role of externalities in delineation of separate international transactions

In most cases the authors feel that externalities will be an intrinsic part of the main business activities and will not lead to delineation of separate international transactions. There may be exceptions to this general rule, however, particularly in industries where externalities take primacy. For example, in the case an associated enterprise is importing defunct goods for disposal (like in the ship breaking industry), a careful economic analysis may require that the international transaction of causing pollution in the jurisdiction of the importer be separately delineated.

Although a separate delineation of the international transaction may be required in such cases solely on account of externalities, a decision on whether this transaction needs to be aggregated with other international transactions, or segregated for the purpose of benchmarking, would still need to be taken. Again, the authors do not envision that a segregated benchmarking would be required in most cases. This is because externalities are intricately connected to the main business transaction and thus, they would be difficult to separately benchmark.

4.2. Role of externalities in the selection of the most appropriate transfer pricing method to be used

Externalities are not expected to, by themselves, lead to selection of the profit split method or the controlled uncontrolled price (CUP) method where other conditions for the use of these methods are not being met.

However, presence of significant externalities should lead to choosing the transactional net margin method (TNMM) in situations where conventional methods like the resale price method and cost-plus method were being used earlier. This is because the generation of externalities will not be captured in the gross margins of an entity.

For example, consider the case of a manufacturing subsidiary that is selling all intermediate goods produced by it to its associated enterprises. Under the gross margins, only the costs of goods sold and other direct costs are captured; jurisdictional costs pertaining to externalities will not be considered. Thus, unless independent entities with an exactly similar externalities profile can be identified, the cost-plus method based on gross margin will lead to an erroneous determination of the arm’s length price. In such a case, it would be better to adopt the TNMM as the most appropriate method for analysis.

A similar case can be made for an entity which imports finished goods from its associated enterprise for sale in the local market. The environmental impact of the finished goods imported and sold in the jurisdiction would need to be examined under the FAIR analysis. In the case the finished goods are causing significant environmental damage, the purchase price cannot be tested using the resale price method unless comparable entities with a very similar externalities profile are available. In most cases, the TNMM would need to be used instead.

4.3. Role of externalities in the selection of the comparable entities

Externalities will significantly influence the comparability analysis, particularly in situations where the TNMM is being used, but also in cases where the profit split method or CUP method are being used.

For the TNMM, the comparability analysis would need to account for externalities to ensure that a comparable
entity has an externalities profile very similar to the tested party. For this purpose, the jurisdictional cost of externalities (JCE) would need to be determined both for the tested party as well as for the comparable entities.

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JCE_{jt} = \text{Environmental cost borne by jurisdiction } j \text{ on account of firm } i \text{ in time } t
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This JCE or the environmental cost borne by the jurisdiction on account of the activities of an entity may be estimated using different sources of data. In some jurisdictions the results of environmental impact assessments done by the administration may be available. Independent estimates by non-governmental bodies and peer-reviewed research papers may also provide this information. In the case sources within the same jurisdiction are not available, reasonable estimates may also be made from global data.

After calculation of the jurisdictional cost of externalities, for comparison purposes, the externality intensity ratio (EIR) would need to be determined for the tested party and potential comparable enterprises. Ideally this should be calculated as the ratio of JCE to the total number of goods (n). However, the number of goods sold is seldom available for independent companies. As a compromise, the ratio of jurisdictional costs to the operational revenue (OR) may be used if the related-party transactions being benchmarked are on the cost side and the ratio of jurisdiction costs to the operational costs (in the case revenue is being benchmarked) may be used.

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EIR_{jt} = \frac{JCE_{jt}}{n_{jt}}
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After estimation of the JCE and EIR, the first preference must be to identify comparable enterprises which have a similar EIR and reject entities with significantly different EIR profiles. However, in case such entities cannot be identified, a comparability adjustment would be required to account for material differences, the Environmental Cost Adjustment. This adjustment is discussed in section 4.4.

In the profit split method, externalities would be accounted for in the split ratio and the split would need be skewed in favour of the more polluting entity. In the residual profit split method, externalities would also play a role in the calculation of the routine profits from the transaction and thus in the calculation of quantum of residual profits to be split.

For the CUP method, externalities would need to be considered while evaluating the profile of the transacting entities and would also form a comparability factor for the product being benchmarked.

4.4. Environmental cost adjustment

When comparable entities with an EIR similar to the tested party cannot be identified, an adjustment would be required to minimize the material differences in net margins on this account. This environmental cost adjustment can be carried out in many ways. The simplest way would be to include the JCE while calculating the net operating margins of both the tested party as well as the comparable entities. This way has the advantage in that it is inline with the principle behind Pigouvian taxes.

However, under the legal framework in some countries, an adjustment in the margins of the tested party is not permissible. In such cases, we may adjust the operating margins of the comparable enterprises for the differences in EIR. The operating margins of the comparable entities would be increased (by decreasing operating costs) if they have a lower EIR and vice versa. The arm’s length price can then be calculated using the adjusted comparability margin.

5. Discussion and Conclusion

The arm’s length price of controlled transactions under existing principles is determined based on an evaluation of all relevant economically significant characteristics. However, the detailed rules are restricted to the visible economic factors and do not require a separate evaluation of externalities generated. This is despite firm behaviour revealing that externalities are economically significant characteristics of business strategies.

Listing externalities as a separate category under the comparability factors to be studied in a transfer pricing analysis will correct this flaw. A separate evaluation of externalities will not require a significant modification of the existing transfer pricing documentation and is not expected to increase administrative compliance costs. As per the authors’ reasoning, externalities would influence the transfer pricing method and would necessitate shifting of the methodology towards approaches based on the transactional profit methods, particularly shifting from the resale price method and the cost-plus method to the TNMM. The environmental impact would need to be accounted for in the comparability analysis and if comparable entities with similar environmental impacts are not available, an environmental cost adjustment would be required.

Inclusion of externalities as a comparability factor under transfer pricing will lead to a reallocation of intra-group profit and consequent taxing rights to jurisdictions bearing the brunt of pollution in MNE value chains. Such an approach is desirable since it will complement the use of Pigouvian taxes to mitigate environmental damage.

Since the approach would require some capacity building, it may be tried initially on a pilot basis in the most vulnerable and least developed countries. The response from such a pilot can then be used to expand coverage globally.

The authors envisage that the main difficulty in application of the FAIR approach would be to estimate the JCE. However, this problem is likely to be subside after the initial years of implementation, and once the approach is applied for some time, more data should become available. Wider availability of JCE data will also have other benefits, since it may be used in planning Pigouvian tax rates as well as environmental regulation. Given this, the authors
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feel that further research may be done on the methods to estimate the JCE.

Further work is also required to expand the coverage of externalities beyond the negative externalities of environmental damage, which were the focus of the authors' discussion. The interaction of positive externalities in the health and education industries as well as positive by-products of other industries with transfer pricing may also be studied.