

UNIVERSIDAD DEL ROSARIO



HOW ARE TRANSFER PRICES AND ROYALTY PAYMENTS
USED FOR TAX AVOIDANCE?

Tesis

Eder Germán Torres Preciado

Bogotá, Colombia

2019

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Maestría en Dirección

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2019

ABSTRACT

This paper analyses how multinational enterprises (MNEs) use transfer pricing methods and royalty payments for tax avoidance. A description of the transfer pricing methods is given to respond to the research aim, evaluating its application in the manufacturing industry and analysing its potential applicability in the internet business to finally assess potential alternative rules.

Due to the outdated tax codes created for traditional manufacturing industries, the actual framework requires evolution to digital economy aspects. Globalisation gives to MNEs the tools to shift profits within its subsidiaries between jurisdictions to those with the lower tax rates to take advantage and maximise after-tax profits.

Despite the OECD actions to fight against base erosion and profit shifting (BEPS), individual countries are taxing MNEs in a different way addressing mainly the digital economy challenges (no physical presence and reliance on intangibles, among others).

The European Union is, in percentage, the main loser due to tax avoidance payments. Although, the developing countries sacrifice by this practice a larger share of its revenue. Alternative rules on the short and long run appear as a country response and multilateral response, respectively.

DECLARATION

I hereby confirm that I have written this thesis

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on my own and without help from other persons. I have not used other sources than those indicated in the thesis.

Moreover, I confirm that I have not submitted and will not submit this thesis or other pieces of work with similar contents as part of any examinations at the Hochschule Mainz – University of Applied Sciences or at another institution of higher education.

MAINZ, GERMANY / 29.08.2019
(Place, Date)

EDER GERMÁN TORRES PRECIADO
(Signature)

ACKNOWLEDGEMENTS

Thanks to the Erasmus + Programme, the European Union, and staff from Hochschule Mainz and Rosario University for its support.

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ABBREVIATIONS AND ACRONYMS

ALP	Arm's Length Principle
BEPS	Base erosion and profit shifting
CbCR	Country by Country Report
DST	Digital Services Taxes
FDI	Foreign Direct Investment
G20	The group of twenty
G7	The group of seven
GDP	Gross Domestic Product
ICT	Information and Communication Technology
IFRS	International Financial Reporting Standards
MNE	Multinational Enterprise (s)
OECD	Organisation for Economic Cooperation and Development
R&D	Research and Development
SME	Small and medium-sized enterprise
UN	United Nations

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CHAPTER I

1. INTRODUCTION

This paper intends to analyse how transfer pricing and royalty payments are used by Multinational Enterprises (MNEs) as vehicles for shifting profits across country borders from high tax rates countries to countries with lower tax rates. It will focus on the analysis of legal methods and its acceptance by tax administrations, going through manufacturing companies and internet-based companies, to finally discuss potential plans regarding the practical application of the Arm's Length Principle.

MNEs now represent a significant share of global economic activity. Some of these big companies have an economic power comparable to a middle-income country¹. As stated by Stiglitz (2007, p. 187), for many people, MNE is the symbol of what is wrong with globalisation, even the primary cause of its problems. *“these companies are richer than most countries in the developing world. In 2004, the revenues of the U.S. car company General Motors were USD 191,4 billion, greater than the GDP of more than 148 countries. In its fiscal year ending 2005, U.S. retailer Walmart's revenues were USD 285,2 billion, larger than the combined GDP of sub-Saharan Africa. These corporations are not only rich but politically powerful. If governments decide to tax or regulate them in ways they do not like, they threaten to move elsewhere. There is always another country that will welcome their tax revenues, jobs, and foreign investment.”*

Scandals involving high-profile companies and global accounting firms attracted attention to the growth of tax-avoidance mechanisms such as **transfer-pricing**, re-invoicing, offshore ‘special purpose vehicles’, corporate inversions, dubious charitable trusts and other vehicles for tax (ab)use. (Christensen & Murphy, 2004)

1.1. Background

In recent years, large multinationals have been criticised for (ab)using transfer prices and royalty payments to avoid paying taxes in the country where generated profits. In earlier periods, multinationals in the manufacturing sector were the focus of such debates, and governments reacted by developing rules for the pricing of goods imported from or exported to subsidiaries.

¹ E.g. General Electric, which is active in over 100 countries, earned revenues of 182 billion US-Dollars in 2008, more than the GDP of a medium-sized economy like Chile. (Bauer & Langenmayr, 2011, p. 1)

In MNE corporate strategy transfer pricing has two leading roles, fiscal compliance and management control; the latter implies to enhance goal congruence and to measure and evaluate the performance (Cooper, Fox, Loeprick, & Mohindra, 2016, p. 5). According to Tørsløv et al. (2018), an estimated 40% of the MNEs profits² are shifted to tax-havens globally each year.

More recent debates have focused on Internet “giants” like Amazon, Apple, Google, and Facebook. In this sector, internationally accepted rules do not exist, even though individual countries seem to establish some pressure.

The Organisation for Economic Cooperation and Development (OECD) (2017b), regulates the international tax laws, and auditing firms within each global location audit financial statements accordingly (Kenton, 2019).

This regulation aims to control the sales operations and cession of use of all kind of products and services in national and international markets, between related economic units³, pursuing the use of market prices to prevent potential tax evasion and fraud.

Under the OECD guidelines, and based on the “arm’s length principle”, almost all countries (members and non-members) have general or specific domestic tax provisions ratifying this standard and which allow the tax authorities to adjust transfer prices that deviate from this principle.

Tax professionals have an advisory role in at least four primary areas for MNEs (Holtzman & Nagel, 2014):

- i) planning – to assist in developing sustainable transfer pricing policies,
- ii) compliance and documentation – to deal with detailed transfer pricing regulations and documentation requirements,
- iii) implementation – to advise the policy administration by setting, monitoring, and documenting systems,
- iv) transfer pricing disputes – to help MNE through advice for advance pricing agreements (APAs), competent authority negotiations, arbitration, and litigation support

However, as stated by Sika & Willmott (2010) taxation is targeted by financial engineers who regard it as an avoidable cost, rather than a return to society on the investment of social capital (education, security, healthcare, the legal system, among others) and a contribution to society for investment in social infrastructure.

² Defined as profits made by multinational companies outside of the country where their parent is located in 2015. (Tørsløv, Wier, & Zucman, 2018, p. 3)

³ According to the International Financial Reporting Standards (WILEY, 2017, pp. 371, 999, 1063) this relationship can be described as subsidiaries (with control, IFRS 10), joint ventures (with joint control, IFRS 11) and associates (with significant influence, IAS 28).

1.2.Problem discussion

Following this arm's length principle, the OECD's Base Erosion and Profit Shifting ("BEPS") initiative (2015) appeared as a response to the G20 call to greater transparency and profit taxation where economic activities occur. It is usually in developing countries appearing as a tool to finance their development.

In today's global market, some MNEs use production facilities for industrial processes through associates, subsidiaries and joint ventures. Once the company generated the profits from the core activity, the payment of transfer prices and royalties to headquarters, a parent company or other subsidiaries, diminishes the taxable profit and avoids the payment of regular tax amounts in the production country to move the profits to, in most cases, developed countries with known tax benefits (tax havens⁴). In some cases, the everyday goods physically leave from country A (producer) to country B (consumer), and contracts route through tax havens

In recent years transfer pricing became one of the most controversial topics in the global tax avoidance debate. Increasing attention of the news media, politicians and social justice groups points to suspects of MNEs using transfer pricing to pay less than a fair share of tax (Ernst & Young, 2018).

BEPS has introduced the country by country reporting of profits and taxes paid by MNEs but is still missing the core cause which is the transfer pricing system itself, and which allows companies to shift profits wherever they want to benefit from meagre tax rates.

For some experts analysing the phenomena, the most shocking aspect of multinational tax avoidance is the fact that it is legal. Not caused by, but permitted in part under the actual BEPS model, allowing MNEs to fix the prices of transactions between their subsidiaries to guarantee to pay taxes in countries with lower tax rates (ICRICT, 2019a, 2019b). Profit shifting and tax planning – even if considered as aggressive – are not violations of the law, even if they conflict with the initially intended (Fuest, Spengel, Finke, Heckemeyer, & Nusser, 2013, p. 19).

In most cases, it is difficult to define a fair transfer price considering that every transaction is almost unique, due to the specificity of product, service, and logistics, making harder to have an only transaction model applicable to all parent-subsidiaries commercial relationship measurement.

According to the OECD (2018a, p. 6), MNEs are responsible for almost one-third of global production, and account for half of the global exports, one-third of global GDP (Figure 1) and about one-fourth of employment.

⁴ The OECD in any case defines four criteria that a tax haven fundamentally fulfils: i)The tax system in the respective country provides for zero or low nominal tax rates, ii)There is no effective information exchange with other countries, iii)There is a lack of or inadequate transparency with regard to disclosure requirements. Basic regulations and their implementation are not clearly defined and regulated, and iv)Economic activity is not a necessary precondition. This concludes that investments or transactions are carried out purely for taxation reasons.(Otto et al., 2015, p. 3)

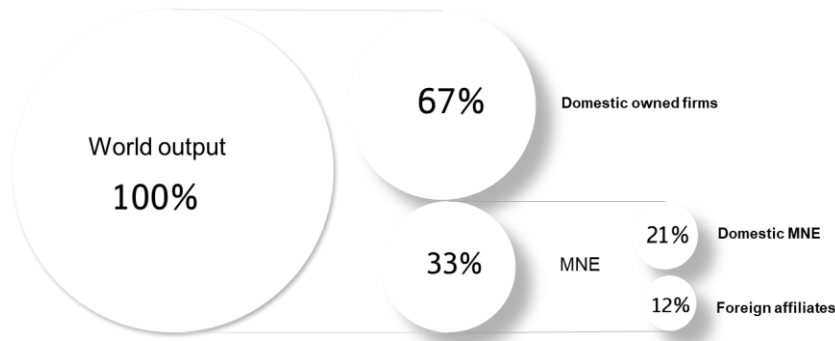


Figure 1. Decomposition of global gross output by ownership status, 2014.
Adapted from (OECD, 2018a)

MNEs look to reallocate assets to wherever the after-tax return is greatest (Crivelli, De Mooij, & Keen, 2015, p. 7), and IMF's Fiscal Affairs Department estimates that around USD 500 billion annually of corporate tax losses are linked to profit shifting (Crivelli et al., 2015, p. 21). Similar data to corporate tax losses amount reported by Cobham & Janský (2017, p. 21) United Nations University World Institute for Development researchers, due to profit shifting.

Additionally, the European Parliamentary Research Service carried out a study, which estimated the loss of tax revenue to the EU through aggressive corporate tax planning to be around €50-70 billion per annum (European Parliament, 2015).

The use of transfer pricing and royalties tools as a systematic tax planning method has risen over the last few years. Numerous international investigations have revealed the use in some industries of tax havens avoiding tax payments in countries where benefit from the infrastructure. This procedure shifts their local profits to the foreign parent company or other subsidiaries located in countries that provide them with the ability to use them as tax havens.

The top three most frequently cited nations, where transfer pricing policies have faced official examinations, are 29% Germany, 25% United States, and 25% India. (Ernst & Young, 2018)

Some examples of tax avoidance by MNEs include pharmaceutical corporations (Abbott, Johnson & Johnson, Merck & CO, and Pfizer), and coffee shops (Starbucks), as well as internet-based companies (Facebook, Amazon & Google), with most of them (ab) using known tax haven countries with almost null tax rates.

Furthermore, some international scandals have appeared in the blurred edge between tax avoidance and tax evasion. For example, in the last six years,⁵ five huge cases emerge:

⁵ According to information from BBC and DW around 4,3 terabytes of information, including tax avoidance schemes and tax evasion have been released. (Kitchener, 2017; VanOpdorp, 2017)

- *Offshore leaks* (2013), revealed documents detailing how some wealthy people and companies use tax havens, including Panama, the British Virgin Islands and the Cook Islands, to hide money from tax authorities;
- *Luxembourg leaks* (2014) revealed that hundreds of companies worldwide had signed secret deals with Luxembourg to save billions in taxes;
- *Swiss leaks* (2015) showed that British bank HSBC Holdings PLC had helped wealthy customers hide millions of dollars in its Swiss subsidiary;
- *Panama Papers* (2016) leaked documents from Panama-based law firm Mossack Fonseca detailing how the firm boosted its clients to hide money from tax authorities and launder money; finally
- *Paradise Papers* (2017) exposing tax avoidance schemes related to how corporations, high-ranking politicians and the super-wealthy avoid paying taxes (VanOpdorp, 2017).

1.3. Research Gap and Research Objectives

In the latest research, the focus of the discussion is three main aspects: the suitability of the OECD to guide the BEPS actions instead of the UN, the completeness and accuracy of transfer pricing methods, and the relationship between tax avoidance and standstill in development. Just a few authors refer to the transfer pricing and royalties method as a core issue (Finke, Fuest, Nusser, & Spengel, 2014; Juranek, Schindler, & Schjelderup, 2016, 2018), and even fewer discuss how MNEs use the transfer pricing and royalties in order to diminish the applicable tax rates to revenue (Barker, Asare, & Brickman, 2017; Duhigg & Kocieniewski, 2012).

The research gap is in analysing how transfer pricing and royalties are used to shift profits internally in MNEs between geographic locations, in order to gain benefits from lower tax rates. This research will also go through case analysis in manufacturing and internet-based business, assessing potential tax alternatives to this (ab)use of the existent tools.

The research aims to analyse how the *transfer pricing methods* and *royalty payments* are used for tax avoidance purposes by MNEs.

In particular, the objectives of the research are as follows:

- To describe different methods of transfer pricing of goods and royalties and their acceptance by tax authorities.
- To evaluate their application in the manufacturing sector – based on the analysis of previous empirical studies.
- To analyse their applicability in the “Internet” business – based on theoretical deduction as well as on an analysis of first empirical studies.
- To assess potential tax alternatives based on theoretical deduction.

1.4.Methodology

To achieve the research aim, the author will apply a literature analysis methodology as a scope to systematically analyse the published literature on this topic. This analysis includes theoretical as well as empirical literature published in the last five years (2014-2019) by independent researchers, multilateral organisations and, when relevant, the press.

This methodology implies a comprehensive and detailed analysis of different sources in order to find common points, transversal areas and opposite points of view.

1.5.Structure

The paper's structure follows a logical step-by-step process, having a starting point in the general concepts of Tax Avoidance, Arm's Length Principle, Base Erosion and Profit Shifting actions, Transfer pricing and Royalties, followed by an overview of accepted transfer pricing methods and a systematic comparison of these methods.

As an application of theory on transfer pricing, a traditional manufacturing sector and the web-based sector will be examined to determine the mechanisms used by MNEs to avoid tax payment. Pointing in the web-based sector, the challenges of a recently emerged industry and for which is not yet a clear way of measurement.

After the application analysis takes place, an assessment of potential tax alternatives is given, exploring supranational and local rules, ways of tax avoidance and statements of empirical and theoretical publications.

A conclusion will summarise the main findings looking forward to potential new approaches or solutions to the tax avoidance situation based on theoretical analysis and own tax-related experience.

CHAPTER II

2. CONCEPTUAL FRAMEWORK: TRANSFER PRICING, BEPS, AND TRANSFER PRICING GUIDELINES

2.1.General Concepts

The concept of Transnational Corporations, or Multinationals Enterprises - MNE, is embedded in Global Production Networks (Dicken, 2015, p. 54), the latter described as a “*circuit of interconnected functions, operations and transactions through which a specific commodity, good or service is produced, distributed and consumed*”, a perfect match to the description of Porter’s Value Chain for Companies. Global does not mean spread all around the world but suggests the integration of processes functionally and geographically across boundaries.

The Transnational Corporations can be defined as “*firms with the power to coordinate and control operations in more than one country, even if they do not own them*” (Dicken, 2015, p. 58).

Exist a wide range of Transnational Corporations depending on their size and geographical spread. However, they all share at least three essential characteristics: i) The ability to coordinate and control various processes and transactions within Global Production Networks (within and between different countries), ii) Their capacity to benefit from geographical differences and policies, iii) The inherent geographical. It is the ability to switch between locations to optimise the resources’ use.

2.1.1. Tax Avoidance and Tax Evasion via Transfer Prices and Royalties

Some general concepts are necessary in order to clarify the framework of analysis, such as the avoidance notion, the transfer pricing core, the arm’s length principle, the transfer price itself, and the level of control in MNEs.

When discussing taxes and profit shifting, to clarify the blurred line between “avoidance” and “evasion” becomes relevant⁶.

According to the OECD (2019d), the term “avoidance”⁷ is generally used to describe the

⁶ A line defined by Dennis Healey, a former UK Chancellor of the Exchequer as being “*the width of a prison wall*” (Christensen & Murphy, 2004, p. 38).

⁷ The term aggressive tax avoidance is used by revenue officials in the US and UK to describe transactions whose primary or whole purpose is the avoidance of tax (Christensen & Murphy, 2004, p. 43).

arrangement of a taxpayer's affairs that is intended to reduce his tax liability and that although the arrangement could be strictly legal, it is usually in contradiction with the intent of the law it purports to follow. In contrast, the term “evasion” is generally used to mean illegal arrangements where liability for tax is hidden or ignored.

This paper will focus on the former only, in order to analyse legal methods used by Multinational Enterprises for profit shifting and their acceptance by taxes authorities.

The OECD Model Tax Convention on Income and on Capital (2017a) in its Article 9 states the following regarding associated enterprises:

“Where:

- a) *an enterprise of a Contracting State participates directly or indirectly in the management, control or capital of an enterprise of the other Contracting State; or*
- b) *the same persons participate directly or indirectly in the management, control or capital of an enterprise of a Contracting State and an enterprise of the other Contracting State,*

and in either case conditions are made or imposed between the two enterprises in their commercial or financial relations which differ from those which would be made between independent enterprises, then any profits which would, but for those conditions, have accrued to one of the enterprises, but, by reason of those conditions, have not so accrued, may be included in the profits of that enterprise and taxed accordingly.”

Regarding the relationship between economic units for the analysis, some descriptions are included in IFRS guides as follows, depending on the level of control, as a controlled group of companies (Multinational Enterprise – MNE) in three ways:

- Associates: Investors with joint control of, or significant influence⁸ over an investee.
- Subsidiaries: Investors control an investee when it is exposed, or has rights, to variable returns from its involvement with the investee and can affect those returns through its power⁹ over the investee.
- Joint ventures: a joint arrangement is an arrangement of which two or more parties have joint control¹⁰.

⁸ The influence if an entity holds directly or indirectly 20 per cent or more of the voting power of the investee. (WILEY, 2017, p. 369 IAS 28)

⁹ The investor has existing rights that give it the current ability to direct the *relevant activities*. (WILEY, 2017, p. 999 IFRS 10)

¹⁰ Parties agree sharing control of an arrangement, which exists only when decisions about the *relevant activities* require the unanimous consent of the parties sharing control. (WILEY, 2017, p. 1063 IFRS 11)

Research on transfer pricing aggressiveness¹¹ shows that MNEs with operations located across variable-tax jurisdictions has more significant opportunities and resources to shift income to low-tax jurisdictions and to allocate tax-deductible expenses to high-tax jurisdictions. As concluded by Bauer & Langenmayr (2011), the base for the determination of transfer prices is market prices¹². Therefore, the arm's length principle, which prescribes the use of market prices, implies transfer prices that systematically exceed the marginal cost, thus allowing MNEs to shift profits abroad. (Bauer & Langenmayr, 2011; Taylor, Richardson, & Lanis, 2015).

Nation-states and transnational agencies have developed joint frameworks, treaties and international guidelines on the formulation of transfer prices (Sikka & Willmott, 2010, p. 343).

José Ángel Gurria¹³ stated that *“basically the principle is very straightforward: where you generate the profits you pay taxes, at the local rate in the countries. Moreover, then, of course, there are certain arrangements having to do with intellectual property, the arm's length principle, transfer pricing, and brands, which is legitimate, but the question is, it has been used now in many cases to pay zero taxes?”* (Associated Press (Producer), 2017).

A common related concept is the aggressive tax-planning, defined by Otto et al. (2015) based on the European Commission¹⁴ as follows *“Aggressive tax planning consists in taking advantage of the technicalities of a tax system or of mismatches between two or more tax systems to reduce tax liability. Aggressive tax planning can take a multitude of forms. Its consequences include double deductions (e.g. the same loss is deducted both in the state of source and residence) and double non-taxation (e.g. income not taxed in the source state is exempt in the state of residence).”*

The evolution of information and communication technologies (ICT) and its incorporation in the digital economy and e-commerce arrangements represent a challenge to tax systems. Royalty payments are often linked to the digital economy as they represent compensation of intellectual ideas in the form of intangible assets (Juranek et al., 2016, p. 2).

The royalty taxation is not (directly) part of the OECD action plan against Base Erosion and Profit Shifting (BEPS), but with the recent attention on the digital economy, it becomes a high-value topic. (Juranek et al., 2016, p. 4)

¹¹ Defined as the downward management of tax paid by allocating profits (or losses) among group members located in different tax jurisdictions through the intentional manipulation of intragroup transfer prices (Taylor, Richardson, & Lanis, 2015, p. 25).

¹² Even though these firms have chosen to become multinationals precisely because they are better at input production than the market (Bauer & Langenmayr, 2011, p. 19).

¹³ Secretary-General of the Organisation for Economic Co-operation and Development – OECD.

¹⁴ C(2012) 8806 final, 6.12.2012: Commission Recommendation of 6.12.2012

2.1.2. The Arm's Length Principle

The arm's length principle¹⁵ is the international transfer pricing standard that OECD member countries, and an increasing number of non-member countries, follow. They have agreed it should be used for tax purposes by MNE groups and tax administrations (OECD, 2017b, p. 35). It is a rule against manipulating transfer prices (and the volume of the tax base), represent the core of transfer pricing rules and a standard used in international tax field since 1933¹⁶.

Every country issues a series of guidelines to approach the transfer pricing in its territory. As an example, the Kingdom of Saudi Arabia says: *"Since related persons are generally not subject to market forces and do not necessarily undertake Arm's Length negotiations, they are potentially able to structure their controlled transactions in a non-Arm's length way"* (General Authority of Zakat and Tax, 2019).

The term "dealing at arm's length" implies a transaction that would be fair and reasonable to two unrelated parties dealing on the open market (Stone, 1960). Cazacu (2015) explains this principle in this way: *"implies the following situation: when two close people (affiliates) meet, there is a natural tendency for them to hug each other. The theory requires that the relationship between these people be the same as between two strangers (independents) that shake hands. When they conclude a transaction, and so they remain at an arm's length"*.

According to Cottani (2018, pp. 7–9), the arm's length principle is the internationally accepted standard for the allocation of taxable income to associated enterprises. It refers typically to prices set for transactions between group entities that should be, for tax purposes, like prices which would have been applied by unrelated parties in similar transactions under similar conditions on the open market.

Transfer pricing legislation that prescribes the arm's-length principle as the applicable standard should be neutral in its applicability: that is, the legislation and the authority to make adjustments should apply regardless of the intentions or motivations of the taxpayer. (Cooper et al., 2016, p. 73)

For Matsui (2011), the uniform imposition of the arm's length principle on transfer pricing leads to coordination failure among countries in terms of economic welfare if the countries trade products in the form of intra-firm transactions by MNEs.

Finally, Lassman & Zoller-Rydzek (2019) state that more productive multinational firms deviate less from the arms' length price and trade lower quantities, compared to MNEs with lower productivity.

¹⁵ As described in article 9 of The OECD Model Tax Convention on Income and on Capital (2017a, p. 34)

¹⁶ The arm's length principle was implemented in the U.S-France treaty of 1932 for the first time. (Solilova & Nerudova, 2017, p. 85)

2.1.3. The OECD Action Plan on Base Erosion and Profit Shifting (BEPS)

Due to the abuse of tax loopholes in international taxation, the Group of Twenty and the OECD issued an action plan to prevent the *Base Erosion and Profit Shifting (BEPS)*¹⁷. The OECD/G20 BEPS Project trigger was the growing concern of many countries, especially the G20 member countries, on how many MNEs set their structures to minimise or avoid taxes (Kerschner & Somare, 2017, p. 258). As Pun (2017, p. 2) sets, BEPS refers to the harmful effects of multinational companies' efforts to avoid taxation by moving profits to low or no-tax locations.

This 15-point action plan includes four specific actions related to transfer pricing: Actions 8-10 focus on Transfer Pricing (Intangibles, Risks & Capital, and High-Risk Transactions), and Action 13 focuses on Transfer Pricing documentation (OECD, 2019c). Both include the Transfer Pricing Guidelines (OECD, 2017b) as the base document.

The transfer price is defined as “The price charged between two divisions of an organisation in transferring goods and services between each other” (United Nations Secretariat, 2001, p. 3; Weetman, 2013, p. G17).

In the case of intangibles, the figure of a license agreement with royalties payment usually applies. A royalty is a recurring payment based on the users' output, sales or (rarely) profit. The rate may vary depending on the volume. It may stipulate that variation in circumstances lead to a revision of the conditions. (United Nations Secretariat, 2001, p. 29).

According to the Ernst & Young 2016-17 survey (2018) as of October 2016, 44 countries had implemented all or some of the BEPS recommendations, creating the conditions for some conflicting interpretations. In all, more than 80 countries are committed to implementation.

This survey shows that just 21% of respondents say they are fully compliant in every country. Over half of respondents have yet to implement global documentation to fulfil requirements related to the country by country reports (CbCR). 67% of companies' processes align with BEPS formatting on a limited basis, for critical countries and transactions only.

To summarise, the fifteen actions provide governments with domestic and international rules and instruments to deal with tax avoidance, pointing to ensure taxation where the MNEs create economic profits and value. The actions are as follows (OECD, 2019b):

- **Action 1. Tax challenges arising from digitalisation.** *To deal with the broad range of tax challenges arising from the digitalisation of the economy to develop a consensus-based solution by the end of 2020.* Addressing the tax challenges raised by

¹⁷ Base erosion and profit shifting (BEPS) refers to tax avoidance strategies that exploit gaps and mismatches in tax rules to artificially shift profits to low or no-tax locations. Under the OECD/G20 Inclusive Framework on BEPS, over 125 countries and jurisdictions are collaborating to implement the BEPS measures and tackle BEPS. (OECD, 2019b)

digitalisation is currently the top priority for the OECD/G20 Inclusive Framework, and has been a critical area of focus of the BEPS Project since its inception. This work has delivered several essential outputs covering both direct and indirect tax issues.

- **Action 2. Neutralising the effects of hybrid mismatch arrangements.** *To prevent hybrid mismatch arrangements from being used for BEPS while minimising the impact on cross-border trade and investment.* Hybrid mismatch arrangements are used in aggressive tax planning to exploit differences in the tax treatment of an entity or instrument under the laws of two or more tax jurisdictions to achieve double non-taxation, including long-term taxation deferral.
- **Action 3. Controlled foreign company.** *To reduce the incentives of taxpayers to shift income from a market country into foreign subsidiaries in a low-tax jurisdiction.* The recommendations outline approaches to attribute specific categories of income of foreign companies to the shareholder(s) in order to counter offshore structures that shift income from the shareholder jurisdiction.
- **Action 4. Limitation on Interest Deductions.** *To establish rules that link an entity's net interest deductions to its level of economic activity within the jurisdiction.* The recommendations aim to limit base erosion through the use of interest expense to achieve excessive interest deductions or to finance the production of exempt or deferred income. The work by the Inclusive Framework member jurisdictions on Action 4 resulted in the 2015 OECD report Limiting Base Erosion Involving Interest Deductions and Other Financial Payments.
- **Action 5. Harmful tax practices.** *To counter harmful tax practices with a focus on improving transparency.* The action is subject to peer review in order to ensure timely and accurate implementation and thus safeguard the level playing field. All members of the Inclusive Framework on BEPS commit to implementing the Action 5 minimum standard and commit to participating in the peer review.
- **Action 6. Prevention of tax treaty abuse.** *To develop model tax treaty provisions and recommendations to prevent treaty abuse.* The action includes specific rules and recommendations to address other forms of treaty abuse. Action 6 identifies tax policy considerations jurisdictions should address before deciding to enter into a tax agreement.
- **Action 7. Permanent establishment status.** *To prevent the artificial avoidance of permanent establishment status in tax treaties through commissionaire structures and more.* The action Action 7 provides changes to the definition of a permanent establishment in the OECD Model Tax Convention to address strategies used to avoid having a taxable presence in a jurisdiction under tax treaties.
- **Action 8 – 10. Transfer pricing.** *Guidance for the appliance of the arm's length principle.* The actions address transfer pricing guidance to ensure those transfer pricing outcomes align with the value creation of the MNE group. In this regard, Actions 8-10 clarify and strengthen the existing standards, including the guidance on the

application of the arm's length principle and an approach for appropriate pricing of hard-to-value-intangibles within the arm's length principle.

- **Action 8. Intangibles.** This action addresses transfer pricing issues relating to controlled transactions involving intangibles since intangibles are, by definition mobile, and they are often hard-to-value. Misallocation of the profits generated by valuable intangibles has heavily contributed to base erosion and profit shifting.
- **Action 9. Risk & capital.** Work under this action considers the contractual allocation of risks, and the resulting allocation of profits to these risks, which may not correspond with the activities carried out. Moreover, Action 9 addresses the level of returns to funding provided by a capital-rich MNE group member, where those returns do not correspond to the level of activity undertaken by the funding company.
- **Action 10. High-risk transactions.** This action focuses on other high-risk areas, including the scope for addressing profit allocations resulting from controlled transactions. Includes as well the scope for targeting the use of transfer pricing methods in a way which results in diverting profits from the most economically significant activities of the MNE group. Finally includes the use of a particular type of payments between members of the MNE group to erode the tax base in the absence of alignment with the value-creation.
- **Action 11. BEPS data analysis.** *To collect and analyse data on the economic and fiscal effects of tax avoidance behaviours and the impact of measures proposed under the BEPS project.* The action report Measuring and Monitoring BEPS established methodologies to collect and analyse data on the economic and fiscal effects of tax avoidance behaviours and the impact of measures proposed under the BEPS Project.
- **Action 12. Mandatory disclosure rules.** *To require taxpayers and advisors to disclose aggressive tax planning arrangements to tax authorities.* The action provides recommendations for the design of rules to require taxpayers and advisors to disclose aggressive tax planning arrangements. These recommendations seek a balance between the need for information on aggressive tax planning schemes with a requirement that disclosure is appropriately targeted, enforceable and avoids placing undue compliance burden on taxpayers.
- **Action 13. Country by Country reporting.** *To improve tax transparency with the country by country reporting.* All MNEs are required to prepare a country-by-country (CbC) report with aggregate data on the global allocation of income, profit, taxes paid, and economic activity among tax jurisdictions in which it operates. This CbC report is shared with tax administrations in these jurisdictions, for use in high-level transfer pricing and BEPS risk assessments.
- **Action 14. Mutual agreement procedure.** *To make dispute resolution between jurisdictions more timely, effective and efficient.* The action seeks to improve the

resolution of tax-related disputes between jurisdictions. Inclusive Framework jurisdictions have committed to having their compliance with the minimum standard reviewed and monitored by its peers through a robust peer review process that seeks to increase efficiencies and improve the timeliness of the resolution of double taxation disputes.

- **Action 15. Multilateral instrument.** *To implement the tax treaty-related BEPS recommendations to address vulnerabilities in existing tax treaties.* The Multilateral Instrument (MLI) offers concrete solutions for governments to close loopholes in international tax treaties by transposing results from the BEPS Project into bilateral tax treaties worldwide. The MLI allows governments to implement agreed minimum standards counter treaty abuse and to improve dispute resolution mechanisms while providing flexibility to accommodate specific tax treaty policies.

Four of these actions are considered ‘BEPS minimum standards’, referring to an implementation duty as a commitment by all members of the Inclusive Framework on BEPS. These are action 5, action 6, action 13 and action 14.

The BEPS Project pursues to ensure all MNEs pay proper taxes to the government of each country in which they operate by addressing issues presented by transfer pricing and profit reporting. As the world's significant economies developed the plan, difficulties arise for developing countries that may not have the resources to implement the plan successfully. (Pun, 2017, p. 1)

2.2. Accepted Transfer Pricing Methods

The OECD Transfer Pricing Guidelines for MNEs and Tax Administrations (2017b) describe, in Chapter II, the “traditional transaction methods” and “transactional profit methods” used to establish whether the conditions imposed in the commercial or financial relations between associated enterprises are consistent with the arm’s length principle (Kamanjiri, 2017; OECD, 2010).

The choice of a transfer price method points to find the most appropriate for every case (see Table 1 and Figure 2). For a final selection, it is essential to take into account the strengths and weaknesses of every single method (see Table 2 and Table 3). These methods represent the international consensus on the manner of applying the arm's length principle.

2.2.1. Traditional transaction methods

Traditional transaction methods examine the prices of transactions among associated enterprises. The most common transfer pricing methods are the cost-plus method and the resale-price method, with 78% of MNEs using these two methods (Wu & Lu, 2018).

2.2.1.1. The Comparable Uncontrolled Price Method (CUP)

This method compares the price charged for property or services transferred in a controlled transaction to the price charged for property or services transferred in a comparable uncontrolled transaction in comparable circumstances.

If there is any difference between the two prices, this may indicate that the conditions of the commercial and financial relations of the associated enterprises are not arm's length and that the price in the uncontrolled transaction may need to shift for the price in the controlled transaction. (OECD, 2017b, pp. 101–104)

2.2.1.2. The Resale Price Method (RPM)

The resale price method begins with the price at which a product, purchased from an associated enterprise, resale to an independent enterprise. This price (the resale price) is then reduced by an appropriate gross margin on this price (the “resale price margin”) representing the amount out of which the reseller would seek to cover its selling and other operating expenses and, in the light of the functions performed (taking into account assets used and risks assumed), make an appropriate profit.

The remaining after subtracting the gross margin can be regarded, after adjustment for other costs associated with the purchase of the product (e.g. customs duties), as an arm's length price for the original transfer of property between the associated enterprises. This method is probably most useful for marketing operations. (OECD, 2017b, pp. 105–110)

2.2.1.3. The Cost Plus Method

The cost-plus method begins with the costs incurred by the supplier of property (or services) in a controlled transaction for property transferred or services provided to an associated purchaser. An appropriate mark-up is then added to this cost, to make an appropriate profit in light of the functions performed and the market conditions.

The result after adding the mark up to the overhead costs may be an arm's length price of the original controlled transaction. This method is probably most useful where selling semi-finished goods between associated parties, where associated parties have concluded joint facility agreements or long-term buy-and-supply arrangements, or where the controlled transaction is the provision of services. (OECD, 2017b, pp. 111–115)

2.2.2. Transactional profit methods

Transactional profit methods examine the profits that arise from particular transactions among associated enterprises.

2.2.2.1. The Transactional Net Margin Method (TNMM)

The transactional net margin method examines the net profit relative to an appropriate base (e.g. costs, sales, assets) that a taxpayer realises from a controlled transaction. Thus, a transactional

net margin method operates like the cost plus and resale price methods. This similarity means that in order for it to be applied reliably, the application of the transactional net margin method must be consistent with how the resale price or cost-plus method is applied.

It means in particular that the net profit indicator of the taxpayer from the controlled transaction should ideally set by reference to the net profit indicator that the same taxpayer earns in comparable uncontrolled transactions, e.g. by reference to “internal comparable”.

Where this is not possible, the net margin that would have been earned in comparable transactions by an independent enterprise (“external comparable”) may serve as a guide. Functional analysis of the controlled and uncontrolled transactions is required to determine whether the transactions are comparable and what adjustments may be necessary to obtain reliable results. (OECD, 2017b, pp. 117–118)

2.2.2.2. The Transactional Profit Split Method

The transactional profit split method seeks to eliminate the effect on profits of special conditions made or imposed in a controlled transaction by determining the division of profits that independent enterprises would have expected to realise from engaging in the transaction or transactions.

The transactional profit split method first identifies the profits to be split for the associated enterprises from the controlled transactions in which the associated enterprises are engaged (the “combined profits”). References to “profits” apply equally to losses. It then splits those combined profits between the associated enterprises on an economically valid basis that approximates the division of profits that would have been anticipated and reflected in an agreement made at arm’s length.

2.2.3. A Systematic Comparison of the Transaction Methods

OECD describes the selection process of the most appropriate method according to the circumstances of the case (2017b), analysed by Cottani (2016, 2018) and compiled by Solilova & Nerudova (2017) as shown in Table 1.

Table 1. Selection of appropriate transfer pricing method

If the CUP and another method are equally reliable	– CUP
If not:	
Where one party to the transaction performs benchmarkable functions (e.g. manufacturing, distribution, services) with no valuable, unique intangible asset/risk	<ul style="list-style-type: none"> – One-sided method – Choice of the tested party (seller/purchaser)

The tested party is the seller (e.g. contract manufacturing or provision of services)	<ul style="list-style-type: none"> – Cost-plus – Cost-based TNMM – Asset-based TNMM 	<ul style="list-style-type: none"> – If cost-plus and TNMM are equally reliable: cost-plus
The tested party is the buyer (e.g. marketing/distribution)	<ul style="list-style-type: none"> – Resale price – Sales-based TNMM 	<ul style="list-style-type: none"> – If the resale price and TNMM are equally reliable: resale price
Where each of the parties to the transaction contributes valuable unique intangibles/risks	<ul style="list-style-type: none"> – Two-sided method – Profit split 	

Source: (Cottani, 2018; OECD, 2010; Solilova & Nerudova, 2017, p. 36)

In summary, the flow chart in Figure 2 shows the logical process to select the most appropriate transfer pricing method.

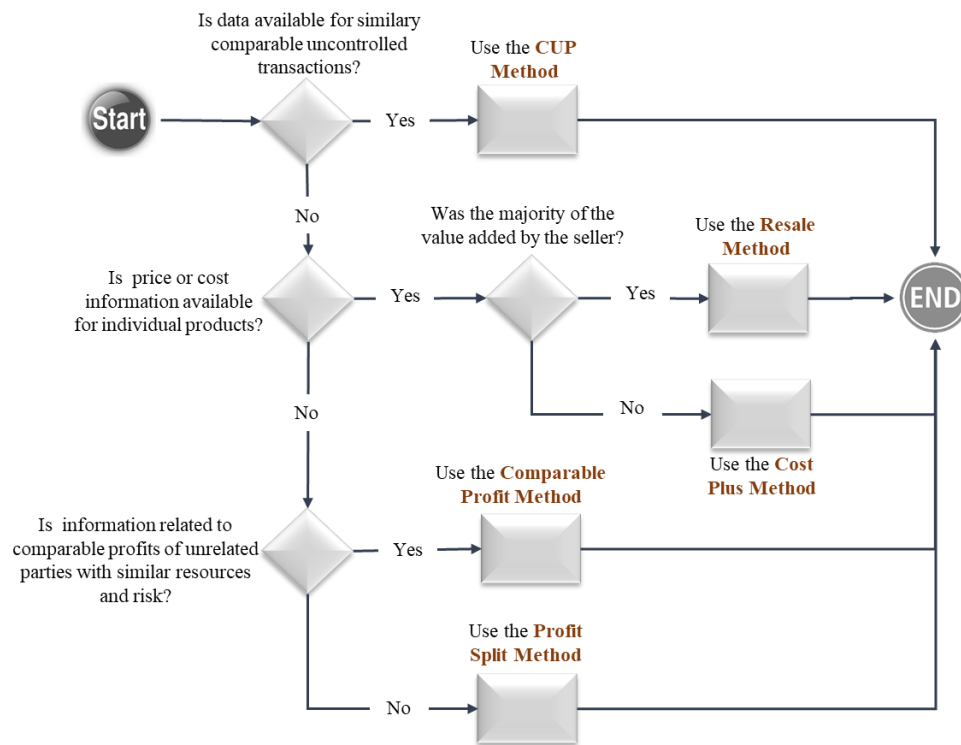


Figure 2. Transfer pricing method selection. Flow chart.

Source: Adapted from (Kumar & Sosnoski, 2011; OECD, 2010)

Note: the resale method commonly includes industries such as distributors who buy finished goods and the cost-plus method commonly includes the sale of semi-finished goods.

OECD (2017b) and Solilova & Nerudova (2017) highlight the main strengths and weaknesses for every single method, a useful tool to select the most appropriate method for each transaction analysed. Table 2 shows the core for traditional transaction methods, and Table 3 shows the relevant elements for transactional profit methods.

Table 2. Strengths and weaknesses of transfer pricing in traditional transactions methods

Traditional Transaction Methods		
	Strengths	Weaknesses
CUP	<ul style="list-style-type: none"> – Simple application if all conditions met – The most direct and reliable way to apply the arm's length principle – Relatively independent of the internal information system. Can verify the price on the market. – Moreover, the method requires neither the identification of a tested party nor the use of commercial databases – Preferable method over all other methods under specific condition – The method is probably most useful where an associated enterprise sells the same product as is sold to an independent enterprise to an associated enterprise 	<ul style="list-style-type: none"> – The method requires very high comparability; therefore, it requires to eliminate all material differences through reasonably accurate adjustments. Reliability of the method depends on the accuracy of the necessary adjustments – Based on the practical experience, it is difficult to find comparable uncontrolled transactions among independent entities without material differences affecting the price. Therefore, the use of the CUP method is not habitual.
RPM	<ul style="list-style-type: none"> – Is based partly on information found on the market (independent price), supplemented with internal company information (margin) – More accurate where it is within a short time of reseller's purchase of the goods – Is the most natural to determine where the reseller does not add substantially to the value of the product – Probably most useful where it is marketing operations, sales organisations such as reseller, or vertical integration 	<ul style="list-style-type: none"> – The more time elapses between the original purpose and resale, the more likely it is that other factors, such as changes in the market, in rates of exchange, and costs will take into account in any comparison of gross margin – The reliability of the RPM may be affected if there are material differences in the ways the associated enterprises and independent enterprises carry out their businesses, such as those that affect the level of costs, which may well have an impact on the profitability but which may not necessarily affect the price – The method is difficult to use where before resale the goods are further processed or incorporated into a more complicated product so that their identity is lost or transformed, or the reseller contributes substantially to the creation or maintenance of intangible property associated with the product that is owned by an associated enterprise.

Traditional Transaction Methods		
	Strengths	Weaknesses
		<ul style="list-style-type: none"> – Faces differences in accounting practices, mainly concerning the costs of goods sold and the resale price margin.
COST+	<ul style="list-style-type: none"> – Requires fewer adjustments for differences in product comparability than the CUP method – Probably most useful in case of long-term buy-and-supply agreements, pricing of semi-finished goods, toll or contract manufacturing, services of purchasing agents, contract research and developments, where associated parties have concluded joint facility agreements, or where the controlled transaction is the provision of services (e.g. consultancy, IT support, management services, and accounting). – Probably most useful in case of low or no-adding value service activities 	<ul style="list-style-type: none"> – There is no discernible link between the level of costs incurred and a market price – It may be difficult to allocate some costs between suppliers and purchasers. – Requires extensive information about the cost base used in comparing the mark-up of the controlled and uncontrolled transactions – Where there are material differences that affect the cost-plus mark-ups earned in the controlled and uncontrolled transactions, require reasonably accurate adjustments. The reasonable accurate adjustments may not be possible when looking at external comparable due to lack of data – It is based only on the data from the internal information system. – It requires a greater emphasis on other comparability factors, namely, on the comparability of the cost base – To ensure comparability of uncontrolled and controlled transactions, reasonably accurate adjustments are required if there are differences in the amount and type of costs used in respect of functions performed, risks assumed, and assets used – Faces differences in accounting consistency. Where the accounting practices differ, accurate adjustments should be made to ensure the use of the same type of costs in each case for the determination of gross profit mark-ups

Source: Adapted from (OECD, 2017b; Solilova & Nerudova, 2017, pp. 26–31)

Table 3. Strengths and weaknesses of transfer pricing in transactional profit methods.

Transactional profit methods		
	Strengths	Weaknesses
TNMM	<ul style="list-style-type: none"> – When no comparable internal data are available, the method TNMM may be the only possible transfer pricing method – It is not often necessary to state the books and records of all participants in the business activity on a common-basis or to allocate costs for all participants as in the case of profit split method – This approach enables one to compare transactions that cannot be at the level of absolute amounts – Calculation of net profit margins involves the use of the interquartile range or other statistical methods – Is relatively feasible (due to the access to databases) and reasonable from a cost-benefit perspective – Is frequently used in practice due to the data from an external database – Probably most useful for the case when the costs of services or performances cannot be accurately determined, or it is not possible to identify the respective costs of controlled transactions for which that need accurate adjustments or is challenging to identify the costs of transactions. 	<ul style="list-style-type: none"> – The method is unlikely to be reliable if each party to transactions makes unique and valuable contributions – The method is not appropriate in the case where differences in the characteristics of the compared enterprises have a material effect on the net profit indicators unless accurate adjustments. – The net profit margins may have been influenced by factors that do not have a direct impact on prices or gross margins, because of the potential for variation of operating expenses across enterprises – Requires information about independent transactions that may not be available at the controlled transaction – Identifying comparable transactions and obtaining the required level of information, mainly on factors affecting comparable external transactions, is often limited in practice – The impossibility of taxpayer access to specific information about profits of controlled transactions may make the application the TNMM less reliability – It may be challenging to identify the revenue and operating costs of controlled transactions – The application on one associated party may result in an inconsistent profit allocation among associated enterprises.

Transactional profit methods		
	Strengths	Weaknesses
Profit Split	<ul style="list-style-type: none"> – The application of the method when other transfer pricing methods fail, namely, when does not exist comparable uncontrolled transactions among independent enterprises – Is based on the internal company information and the allocation of profits is determined through the division of functions performed, risks assumed, and assets used among associated enterprises by the way how independent enterprises would have expected to realise it – The flexibility of the method, as it enables the specificities of the industry and of the group, possibly unique, facts and circumstances to consider – Allows to consider the returns associated with valuable intangible – Probably most useful for highly integrated operations, for complex and closely interrelated business transactions, for which one-sided method would not be appropriate 	<ul style="list-style-type: none"> – Is based on the internal company information, and it relies less on information about independent enterprises. Therefore, the reliability of the method is lower than others due to the possibility of more subjective results – Difficult access to information from associated foreign enterprises. The necessity of financial data and other information may be a critical issue in the context of tax audits – Is not used for independent enterprises, except joint ventures – Complexity and data requirements in respect to practical application—determination of combined revenue and costs for all associated enterprises involved in the controlled transactions requires the keeping books and records on a common-basis and adjusting in accounting practices and currencies – When used for operating profit, it is difficult to identify the operating costs associated with the controlled transactions and to divide those costs between the transactions and other activities of the associated enterprises – Reliability of the method should be considered, mainly when performing the accurate adjustments, and the appropriate allocation key for the division of combined profit is determined

Source: Adapted from (OECD, 2017b; Solilova & Nerudova, 2017, pp. 26–31)

According to Sikka (2009), globalisation has enabled the opportunity for MNEs to relocate formerly unified processes in foreign places. E.g. to design its products in country A, manufacture in B, test in C, hold patents in D and assign marketing rights to a subsidiary in country E. Such a structure gives corporations broad discretion in allocating costs to each country and shifting profits through internal trade.

Gravelle (2015) establishes five (5) methods of corporate tax avoidance: 1.) allocation of debt and earnings stripping, 2.) contract manufacturing, 3.) check-the-box, hybrid entities, and hybrid instruments, 4.) cross-crediting and sourcing rules for foreign tax credits, and 5.) transfer pricing.

Regarding the fifth method, Barker et al. (2017), referring to US MNEs¹⁸, describes four mechanisms of transfer pricing and royalties used for tax avoidance:

i) The Arm's Length Principle

The arm's length principle can be applied quite easy for the tax authorities and regulatory agencies when related to essential goods and services, with transactions almost entirely identical.

It is not the same when trading intellectual property or patents developed locally and licensed to a subsidiary abroad, with low royalties for the local company and high profit for abroad subsidiary (in a country with lower tax rate), thereby shifting income. The specificity of this kind of traded goods or services makes it challenging to find comparable transactions.

ii) Research and Development for Intangible Assets

During the research period (exploration phase), the IRS¹⁹ allows companies to expense R&D costs immediately since it is not clear that the expenses will have any future benefit to meet the criteria for capitalisation.

Under this framework, an MNE could save in taxes for the R&D costs expensed. Then, after the R&D period, when the MNE expects to start earning income and pay taxes over that income, the company licenses its intellectual property rights to a subsidiary abroad, in a country with lower tax rates, and with a low transfer price (royalty). Finally, if the local company decides to buy the manufactured product from the overseas subsidiary at a very high price, to resell it in the local market, the local company has artificially increased their expenses, eroding the taxable income in the home country.

¹⁸ Due to the aligning of the US Internal Revenue Code with OECD transfer pricing guidelines, this described four ways for tax avoidance can be used to explain the global phenomenon.

¹⁹ "Since the United States Internal Revenue Service allows companies to expense R&D and advertising costs incurred to establish brand names, many corporations use the United States as the base for their research and development of intangibles assets e.g. intellectual property and technology. The tax effect during the development stage is more favourable in the U.S. compared to many other countries." (Barker, Asare, & Brickman, 2017, p. 11)

iii) Cost Sharing Agreements (CSA)

It is where two or more subsidiaries in the same multinational group share the cost and the risks of researching and developing an intangible asset (e.g. Intellectual Property). From this agreement, they share cost and risks as well as the future economic benefit derived from the intangible asset. This shared interest gives each party the right to also share in the income derived from the intangible asset.

In this case, parties usually describe ownership interests and may incorporate a predetermined transfer pricing agreement. These tax planning tools are used by some MNEs to erode taxable income. It is difficult for CSAs to guarantee the arm's length principle due to the lack of appropriate tools to measure fair value in such a shared risk transfer pricing transaction, including technology partially developed.

iv) The "Double Irish"

The base of this mechanism is shifting income to a lower or even to a no-tax jurisdiction²⁰. Firms have developed techniques to take advantage of tax laws in other countries to achieve both a productive operation while shifting profits to no-tax jurisdictions. Gravelle (2015) describes the *Double Irish*, *Dutch Sandwich*, as follows:

"An example is the double Irish, Dutch sandwich method that has been used by some U.S. firms, including Google. In this arrangement, the U.S. firm transfers its intangible asset to an Irish holding company. This company has a subsidiary sales company that sells advertising (the source of Google's revenues) to Europe. However, sandwiched between the Irish holding company and the Irish sales subsidiary is a Dutch subsidiary, which collects royalties from the sales subsidiary and transfers them to the Irish holding company. The Irish holding company claims company management (and tax home) in Bermuda, with a 0% tax rate, for purposes of the corporate income tax. This strategy allows the Irish operation to avoid even the low Irish tax of 12.5% and, by using the Dutch sandwich, to avoid Irish withholding taxes (which are not due on payments to European Union companies)."

More recently, European countries have complained about companies such as Google, Apple, Amazon, Facebook, and Starbucks using this strategy in some cases (Fuest et al., 2013).

²⁰ Multinationals report vast profits in tax havens like the Cayman Islands, Luxembourg, Switzerland and Ireland. Sheppard (2010) states that "economists have documented massive shifts of multinational corporations' profits to tax havens, in amounts wildly out of proportion to any economic activity taking place there. Some income is not taxed anywhere. Americans call it "nowhere income." Europeans call it "white income.""

2.3.Theoretical and Empirical Studies on Transfer Pricing and BEPS

Literature from the following research platforms was used to explore the transfer pricing phenomena in MNE's tax avoidance strategies:

- ZBW - Leibniz Information Centre for Economics (Leibniz-Informationszentrum Wirtschaft).²¹
- Universidad del Rosario's Resources for Learning and Research Centre – (CRAI)²² including multiple databases such as Business Source Complete, RePEc - Research Papers in Economics, Scopus®, Directory of Open Access Journals, EconLit - American Economic Association, Emerald Insight, World Bank eLibrary, EMIS University
- Web of Science (a tool from Clarivate Analytics)²³.

In order to have recent information and a comprehensive analysis simultaneously, the period includes publications between 2014 and 2019.

As a first general outline, a query of *tax avoidance* publications showed 337 documents fitting the search²⁴. In this search, the increasing trend to publish about this topic is clear²⁵, with 2018 being the year with most publications (79).

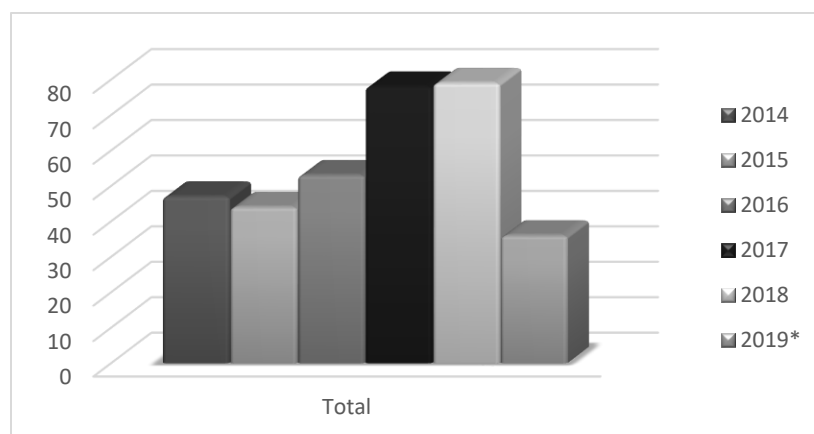


Figure 3. Publications per year about tax avoidance.

Source: Own elaboration based on information from (Clarivate Analytics, 2019)

*Note: * The 2019 period that includes documents from January to May.*

²¹ For further information and search ZBW is available online at <https://lhzbw.gbv.de>

²² Access available for University's Professors students and researchers at <https://www.urosario.edu.co/crai/inicio/>

²³ Available with subscription at <https://clarivate.com/products/web-of-science/>

²⁴ Results for the query: ALL=("tax avoidance") AND (TF>=(2014) AND TF<=(2019));

²⁵ Except for the 2019 period that includes documents only from January to May publications.

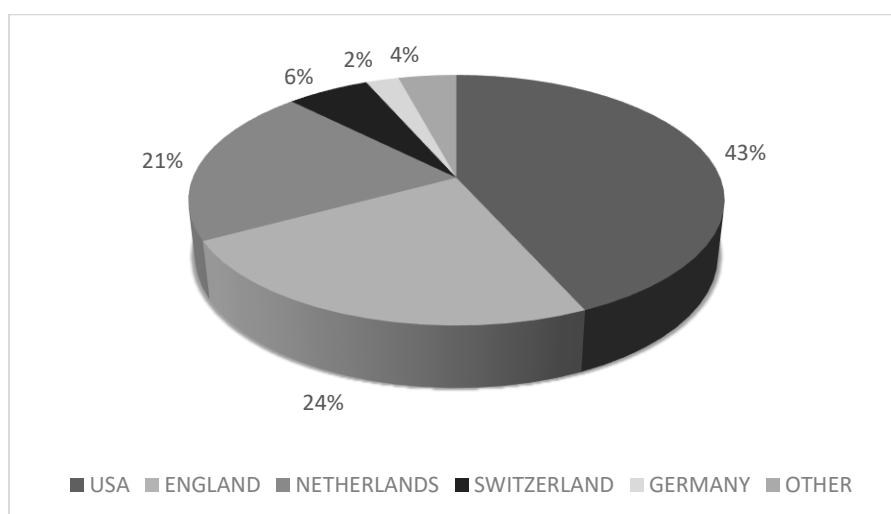


Figure 4. Percentage of publications by country. 2014-2019.

Source: Own elaboration based on information from (Clarivate Analytics, 2019)

These are the most relevant topics when analysing the corpus for the tax avoidance search: haven, country, international (40) / cash, managerial, firm(35) / debt, cost, aggressiveness(34) / cigarette, price, tobacco(33) / financial, offshore (31) / CSR, social responsibility (25) / income, elasticity, top (23) / account, case, ethics (23) / family, tie, director (18) / rate, tax rate, profit (16) / trust, reform, law (13) / taxpayer, disclosure, IRS (12).

This information highlights the concern about the international (ab)use of tax havens, the tax avoidance as a result of aggressive financial planning, the need for regulation reform, the inverse relationship with corporate social responsibility and its direct link to ethics in business.

A three-level query based on *transfer pricing* was made to analyse the results:

- i) a first search of the term *transfer pricing* with publications between 2014 and 2019,
- ii) a search “quoting” the exact term *transfer pricing*, and finally
- iii) a search “quoting” the exact term *transfer pricing*, and restricting the result to those with *tax avoidance* references

Table 4 shows the results of the queries in the three research platforms. Eliminating duplicate results and those corresponding to physical documents (books, reports and diaries) without electronic access to assess the content, results from ZBW and DERWENT sources were entirely accurate and showed results with around 80% of coincidence.

Due to the appearance in the first level of non-related results referring mainly to pricing methods in cigarettes, energy, natural resources and oil-derivatives, that had no link to the core of the analysis, a depuration of the search was required, so the quoted search looked for specific publications as an exact match.

Table 4. Results by the query.

Query	Number of results		
	ZBW	CRAI	DERWENT
ALL=(transfer ADJ pricing) AND (TF>=(2014) AND TF<=(2019));	225	1.535	1.730
ALL=("transfer pricing") AND (TF>=(2014) AND TF<=(2019));	216	1.045	89
ALL=("transfer pricing") AND ALL=(tax ADJ avoidance) AND (TF>=(2014) AND TF<=(2019));	30	127	22

Source: Own elaboration based on information from (Clarivate Analytics, 2019; Leibniz Information Centre for Economics, 2019; Universidad del Rosario, 2019)

Based on the specific search of “transfer pricing” with 87 results, excluding two with no direct relation, these are the main findings:

- The most used concepts in selected literature are: supply, division, chain (30), tax, shift, avoidance (28), risk, evaluation, exploratory (11), royalty, related, method (9), disclosure, account, WTO (8), process, valuation, variable(2).
- As shown in Figure 5, the top 4 organisations publishing about transfer pricing and tax avoidance are universities. However, two research centres appear on the list as well. Regarding the country of publication, the distribution is as follows: USA – 37%, England – 24%, Netherlands – 23%. 93% of documents are written in English, 4% in Czech and 2% in Portuguese.
- More than 50% of publications come from business and economics journals, 15% from management publications, and 5% from law journals.
- The number of publications has increased from 2014 (13 documents) to 2018 (26 documents). For 2019 the value is not comparable because of the reporting period (Jan-May).

During the chapters, III to V, specific information from retrieved literature related to each point of analysis will appear in order to describe the specific situations and support the author’s position in each case.

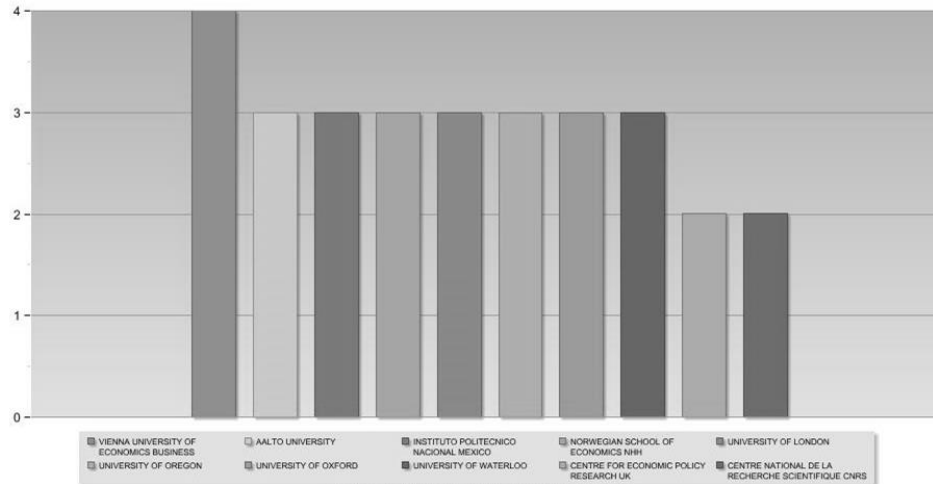


Figure 5. Top organisations. 2014-2019.

Source: (Clarivate Analytics, 2019)

Based on the most accurate results, the following map of concepts (Figure 6), shows the focus of publications on Multinational Enterprises and their dynamic relationship with the group's companies network. Taxable base erosion and the shift of taxpayer are also relevant notions. Finally, some articles refer to the Nash bargaining game theory approach as a solution to the transfer pricing issue.

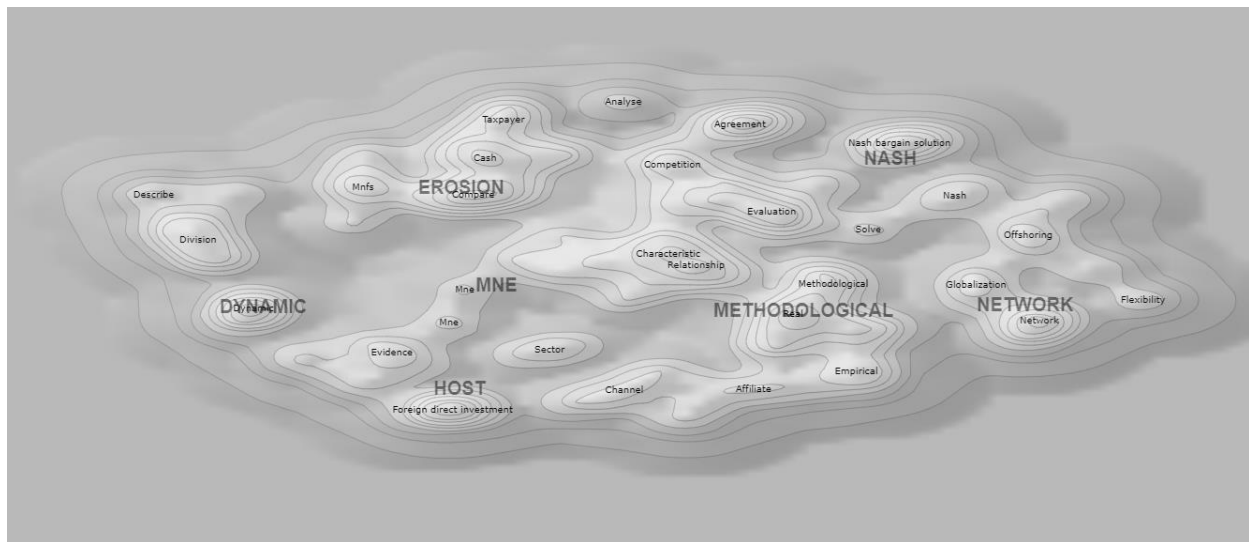


Figure 6. Map of concepts in transfer pricing research.

Source: (Clarivate Analytics, 2019)

For the analysis carried out in chapters 3, 4 and 5, besides information from journals, were gathered some reports and recommendations from multilateral organisations, and consultancy groups reports regarding the tax systems and the Base Erosion and Profit Shifting (BEPS) actions.

CHAPTER III

3. THE APPLICATION OF TRANSFER PRICING METHODS IN MANUFACTURING INDUSTRIES

Although the literature analysed in the previous chapter includes the last five years of academic publications is the base, some specific studies since 2000 will appear to support the point of view. Very relevant information related to specific manufacturing cases is part of these two past decades of research, including analysis of manufacturing models and its use of transfer pricing strategies as a vehicle for tax avoidance.

Transfer pricing and royalties used as a vehicle to shift profits in MNEs is not a new topic when analysing tax avoidance strategies, and literature referring methods is found since 1955. Discussing manufacturing companies' decentralisation and its relation to the evaluation of managers performance (in terms of profit) leading these "profit centres", has stressed the relevance of the topic.

Because of its impact on the level of activity within divisions, the traditional measurement factors are the rate of return on investment for each division, and the total profit achieved by the firm as a whole. (Cook, 1955; Hirshleifer, 1956; Bierman, 1959). Afterwards, the inclusion of tax analysis in the discussion, is a work by Stone (1960), examining the United States regulations and the potential avoidance ways regarding the U.S. Internal Revenue Code.

Sikka and Willmott (2010) stress that "*in conventional accounting literature 'transfer pricing' is portrayed as a technique for optimal allocation of costs and revenues among divisions, subsidiaries and joint ventures within a group of related entities*". In other words, it means a mechanism to avoid taxes and facilitate the flight of capital.

The manufacturing sector is going through a challenging transformation driven by globalisation, shifts in demand (and consumers itself), and rapid innovations. This sector continues to be the leader of the global economy and includes a vast amount of cross-border transactions between divisions and related companies. The MNE is called to adapt to the transformation of the sector in two ways, first, by adapting its value chain (including supply chain), and second, developing new business models. (Deloitte, 2014, p. 37)

This race looking forward increased productivity pushed companies to shift all or part of their manufacturing process to cheaper offshore locations. E.g., as mentioned by Bauer & Langenmayr (2011) in 2008, the car manufacturer BMW, who has split production among various facilities in and outside Europe, effectively paid 6% tax on its income in Germany, where are its

headquarters. In the same year, on average, German corporations paid 30% of their earnings as profit taxes.

3.1. Operating structures in the manufacturing sector

As stated by Deloitte (2014), manufacturers' operating structures are in four categories according to their risk profile and economic characterisation: i) entrepreneur; ii) licensed manufacturer; iii) contract manufacturer; and iv) toll manufacturer. Table 5 shows details of the functional profile, associated risk and earnings for each.

Although the blurred line between these terms and its oversimplification of complex manufacturing profiles, it becomes useful to summarise manufacturer risk and functional profiles to describe typical transfer pricing issues.

Table 5. Common operating structures in the manufacturing sector

Functional profile	Associated risk	Earnings
<i>Entrepreneur / Full-fledged manufacturer</i>		
Is responsible for production planning, input procurement, supply chain management, quality control, long-term capacity utilisation planning, and potentially selling to third-party customers.	Product liability, warranty, capacity utilisation, market demand and pricing risks HIGH RISK	Receives all residual profits or losses from the value chain
Research and development activities (R&D)	Development, maintenance and protection of valuable intangible property HIGH RISK	
<i>Licensed manufacturer</i>		
Produces goods under a licence agreement, using manufacturing intangibles owned by the licensor, such as patents, product designs, manufacturing process and know-how. Pays royalties for the use of the licenced intangibles Typically buys raw materials and semi-finished goods and holds inventories of the raw materials and finished goods	Holding inventories Selling products Demand and pricing risks MEDIUM RISK	Are driven by the value derived from tangible property, licenced intangible property and services

Functional profile	Associated risk	Earnings
Typically owns plant and equipment necessary for manufacturing operations and invests in training its labour force		
<i>Contract manufacturer</i>		
<p>Produces goods for a manufacturing principal that directly bears demand and final customer pricing risk</p> <p>Provided the products made by the contract manufacturer comply with the principal's product and quality specifications, the principal may guarantee to purchase the goods</p> <p>Typically owns plant and equipment and procures/own raw materials</p>	<p>Holding inventories (lower than the licensed manufacturer)</p> <p>Selling products (lower than the licensed manufacturer)</p> <p>Holding fixed assets and raw material inventory</p> <p>MEDIUM RISK</p>	<p>Typically an arm's-length mark-up on total costs (a return on value-added manufacturing services reflecting a return on its capital investments and investments in raw material inventory)</p>
<i>Toll manufacturer</i>		
<p>The principal retains title to the raw materials (makes them available to the toll manufacturer for processing), work-in-process and final products during the manufacturing process</p> <p>Performs processing services</p>	<p>Holding raw materials</p> <p>Holding finished goods inventory</p> <p>Final demand and price risks</p> <p>LIMITED RISK UNITS</p>	<p>Toll manufacturing fee, typically calculated as a mark-up on processing costs, paid by the principal.</p>

Source: Adapted from (Corlaci, 2013, p. 1183; Deloitte, 2014, pp. 41–42; OECD, 2017b, pp. 365–366)

An MNE may have on its structure a full combination of these operating buildings blocks. The existence of such models requires a fine-tuned transfer pricing strategy in order to balance expectations from every echelon.

Transfer pricing and royalties challenges are specific depending on the level of analysis and could be different from each point of view, e.g. the approach will be different if an entrepreneur or licensed manufacturer define the strategy.

3.2. Supply chain optimisation

For the sake of simplicity of analysis, we assume in this paper, the supply chain as content in the value chain and vice-versa. A value chain was defined initially by Porter & Millar (1985, p. 150) as a structure of interdependent “value activities” (technologic and economic) that a

company performs to do business and create value that exceeds the cost of performing the activities.

These value activities are i) primary activities, those related to the physical creation of the products, including the marketing and delivery of them, and ii) support activities, those that provide inputs and infrastructure to allow the primary activities to take place (Porter & Millar, 1985).

Combined value chains from providers, the company, and the buyers compound the “value system”, where the results of a chain are the inputs for the next and so on, comparable in scale to the Global Production Networks concept.

When discussing global manufacturing optimisation, there are three main approaches: *transfer pricing*, strategic sourcing strategy and logistics networks design. (Kristianto, Gunasekaran, & Helo, 2017, p. 607).

Due to the world’s demographic and political changes, the growth of developing countries and the power shift from the Atlantic to the Pacific, manufacturing industries shaped a new global supply chain. This development pushed manufacturers to produce nearer to the end market in order to reduce costs, to simplify logistics processes and to avoid potential operational disruptions (Kristianto et al., 2017).

At this point, the presence of resilience, robustness and responsiveness (the “Triple R”) provides global manufacturing with a sustainable competitive advantage (Kristianto et al., 2017). Summarising the characteristics of the global manufacturing optimisation model (Kristianto et al., 2017, p. 612), five main appear to cluster features: i) objectives (of subsidiaries as profit centres or cost centres), ii) networks strategy and settings, iii) constraints, iv) decision parameters, and v) decision. In this context, royalties are a decision parameter, and transfer prices are a decision.

Supply chain activities design is traditionally done independently of tax-planning activities (Shunko, Debo, & Gavirneni, 2014, p. 2043). One of the most relevant aspects when redesigning manufacturing supply chains is to capitalise on the tax advantages in each country. It requires to considerate tax rates in each location and the transfer pricing strategy that provides companies with the ability to shift profits to lower-tax countries while optimising the supply chain (Hammami & Frein, 2014, p. 268).

This link between supply chain design and tax-planning strategies allow manufacturing companies to establish global structures that accomplish tax and legal requirements, with considerable savings.

With the globalisation, it is increasingly common the exchange of intermediate and final products between the different subsidiaries of an MNE. If subsidiaries are in different countries, the transfer pricing is a tool for shifting income to subsidiaries in lower-tax countries with the consequent increase of the after-tax profit of the supply chain (Hammami & Frein, 2014).

Transfer pricing is considered relevant in two categories according to the supply chain literature (Hammami & Frein, 2014, p. 268), first, as the fundamental decision of the model. In this category, the focus is on the impacts of transfer pricing on some supply chain decisions or the comparison of different transfer pricing policies. The second category, as coupled with many other supply chain decisions. The last, aiming to optimise large scale supply chain, models.

Regarding the existence of different responsibility centres in a decentralised organisation that pursues the local benefits, in some cases, there may be a conflict between the global tax planning and the local economic performance evaluation (Fernandes, Pinho, & Gouveia, 2015, p. 130).

The value chain's goal is to maximise their (divisions / related companies) combined value. Thus, the issue for MNE is where to locate the global resources for production in order to exploit market imperfections and maximise the organisation's value chain (Cecchini, Leitch, & Strobel, 2013).

Cecchini et al. (2013) propose two theories to approach the link between transfer pricing and the organisation's supply (value) chains:

- Transaction cost economics (TCE): that focuses on minimising risks associated with transaction costs through cooperation among entities. The main risks considered are those associated with the exchange of goods and services among entities (performance risk), and concerns of opportunism on the part of some entities (relational risks)
- The resource-based view (RBV): that focuses on the strategic benefits of cooperating among entities

A company have units based on its' activities, business processes, legal entities, product line entities, and resources. Each unit interacts (buy and sell) with other units. Likewise, each division has management aims, such as product line profit, overall company profit, cost reduction and risk minimisation. This relationship implies a set of balanced transfer prices to coordinate the value chain and govern transfers among activities, resources, and business processes (Cecchini et al., 2013).

The intra-firm trade of resources, goods and services (between divisions) requires the set of transfer prices to manage their supply chains. These represent a tool to accomplish internal markets, to coordinate decisions of decentralised companies and to keep track of the division's performance (Villegas & Ouenniche, 2008).

Conflicts may arise from different fundamental aims of business and governments. While the first looks for profitability, the second looks for broad national welfare.

When governments impose various taxes as well as commercial and regulatory policies, the MNE can, to a certain degree, reallocate resources and redistribute profits between countries by using transfer prices. As a result, governments start having exceptional attention to the transfer pricing to prevent their distorted use (Villegas & Ouenniche, 2008, p. 830).

A decentralised model can include corporate goals (by headquarters) and divisional goals (by a division), and these may be different and even have conflict. The former includes prices, minimum profit, and level of production, among others — the latter aims to maximise profits and minimise costs mainly (Villegas & Ouenniche, 2008).

Finally, regarding the supply chain is relevant to highlight the role of procurement processes in maximising profits taking advantage of a differential in taxation. According to Wu & Lu (2018, p. 209), the key to a procurement centre's success is transfer pricing.

3.3. Business models

Business models are closely linked to the operating structure of the manufacturing MNEs and also include, in most cases, a supply chain optimisation analysis. For Sikka and Willmott (2010) the transfer pricing is at the joint between the MNE interests, the social responsibility and the states' right to tax.

OECD guidelines (OECD, 2017b, pp. 365–413) refer to the changes in business models as business restructurings²⁶. These industrial and commercial restructurings have complex and significant impacts on international tax for MNEs, although tax considerations by themselves are generally not the principal driver for the reorganisation, as stated by Corlaciuc (2013, p. 1183).

Commonly, a business model reorganisation consists of transferring assets (tangible and intangible), risks and functions to specialised units. These units can be regional or global subsidiaries within the MNE group.

Four primary forms appear in the literature (Corlaciuc, 2013; OECD, 2017b) as follows:

- Conversion of a full-fledged distributor into limited risks distributors, marketers, sales agents, or commissionaires for a foreign associated enterprise that may operate as a principal;
- Conversion of a full-fledged manufacturer into contract manufacturers or toll manufacturers for a foreign associated enterprise that may operate as a principal;
- Transfers of intangibles or rights in intangibles to a central entity within the group.
- The concentration of functions in a regional or central entity, with a corresponding reduction in scope or scale of functions, carried out locally; examples may include procurement, sales support, supply chain logistics.

Independent of these business restructurings motivations and the forms in which they settle,

²⁶ Business restructuring refers to the cross-border reorganisation of the commercial or financial relations between associated enterprises, including the termination or substantial renegotiation of existing arrangements. (OECD, 2017b, p. 365)

frequent transfers involve a shift²⁷ in i) tangible assets, ii) intangible assets, and iii) activities.

Finally, the expected outcome of the business model restructuring is, in the short or long run, the reallocation of profit potential that goes linked to the shifted assets or activities.

Is often common than traditional businesses (currently considered non-digital) are increasingly adopting digital business models (Olbert & Spengel, 2019, p. 2), merging in a digital economy based on physical products.

3.4. Transfer pricing and development

Some researchers (Asongu, 2015; Cooper et al., 2016; Sikka & Willmott, 2010; Tørsløv et al., 2018) analyses the relationship between tax-evasion and poverty growth in developing countries.

As stated by Cooper et al. (2016) abusive transfer pricing practices are considered to pose a significant risk to the direct tax base of many countries, and developing countries are particularly vulnerable because corporate tax tends to account for a larger share of its revenue.

As said by Sika and Willmott (2010), referring to manufacturing mainly, transfer pricing strategies are enhancing private gains and contributing to relative social impoverishment.

The MNEs engage in transfer mispricing due to two principal incentives, first, to maximise the present value of the group overall profits²⁸, and second, to minimise the present and future risks of uncertainty regarding the value of profits²⁹ (Cooper et al., 2016, p. 6).

According to NGO studies³⁰, the tax revenues foregone by developing economies from transfer mispricing were close to US\$50 billion by 2000 (Oxfam) and US\$121,8 billion by 2009 (Christian Aid).

Tørsløv et al. (2018) found that about 35% of the shifted profits come from the European Union (non-haven) countries, close to 30% from developing countries and about 25% from the United States. Thus, the governments of the (non-heaven) European countries appear to be the primary losers of this profit-shifting. Moreover, regarding the location of headquarters of

²⁷ Centralisation, decentralisation, rationalisation, specialisation or de-specialisation of operations, creation of new markets, development of go-to-market initiatives, innovation and development of new value propositions. (Corlaci, 2013, p. 1184; OECD, 2017b, p. 366)

²⁸ Some examples showed by Cooper et al. based on Muchlinks 2007 (p. 269) and Lall 1980 are: Reduce tax liabilities by taking advantage of differences in national tax rates. Reduce customs duties on imports and exports. Avoid profit remittance or foreign exchange restrictions; avoid withholding taxes on dividends or royalties. Engage in exchange rate speculation to move profits from a devaluing currency into a stronger one. Reduce profits of an entity that must be shared with minority (or state) shareholders.

²⁹ Some examples showed by Cooper et al. based on Muchlinks 2007 (p. 269) and Lall 1980 are: Minimize the exposure of the firm's profits to governmental threats of expropriation or trade union activism. Reduce apparent profitability of a subsidiary to deter competitors from entering the subsidiary's market.

³⁰ The measurement approaches used in these studies have drawbacks that make the results difficult to interpret (Cooper, Fox, Loeprick, & Mohindra, 2016, p. 10 Box 1.2)

companies that shift profits, United States MNEs shifts comparatively more profits than MNEs from other countries. In this context, the shareholders of U.S. multinationals appear to be the main winners from global profit shifting.

As reported by CBS News (2011), US MNEs have billions trapped overseas in tax havens where companies have no more than a postal box or a small office with no high-level decision-makers and managers residing. John Chambers, former CISCO's CEO said that the tax high rates are forcing companies into these manoeuvres, and declares that shareholders measure him as a CEO on things like taxes.

These tax-avoidance strategies deprive countries of transferring wealth and social benefits to its citizens, such as financing education, health, transport infrastructure, defence expenditure, and all the other services that the community requires of a dynamic market economy. Historically, the developing countries produce mainly agricultural products, raw materials and minerals, and the tax revenues represent a substantial share of countries' GDP (PWC, 2011).

As a result of the tax competition process developing countries have eroded their potential tax base, which is socially regressive, and represents a net reduction in the revenues available to the state to invest in social and physical infrastructure (Christensen, Coleman, & Kapoor, 2004). This strategy deprives national governments of the proper tax-bill owed and makes it more difficult for smaller businesses to compete (Pun, 2017, p. 7).

For manufacturing industries, the criticism is broader because of the globalisation strategies, including being closer to raw materials and closer to target markets. The global presence of Manufacturing MNEs and the required work-intensive processes abroad make visible it intends to minimise the tax burden.

As remarked by the Independent Commission for the Reform of International Corporate Taxation – ICRIT (2019b), by not collecting the revenue lost through tax avoidance schemes of MNEs, governments are failing in their obligation to mobilise all available resources towards the realisation of economic, social and cultural rights.

To conclude, the result of the MNEs' aggressive tax avoidance practices for countries, and its citizens is that governments end up with less money to invest in the hospitals, clinics, nurses, and prioritised medicines (OXFAM, 2018, p. 22). The weaker a country is, the more likely corporations will shift their profits out of it and into tax havens. Developing countries lose around USD 100 billion annually as a result of corporate tax avoidance schemes. That is more than enough to pay for the health interventions needed to save the lives of six million children (OXFAM, 2018, p. 52).

3.5. Some cases

In a long list of cases, Sikka and Willmott (2010) highlight some evidence of the use of transfer pricing in emerging and transitional economies, and developed and advanced economies.

On the one hand, in emerging and transitional economies. E.g. China has sought to attract Foreign Direct Investments (FDI) by offering tax incentives and concessions to MNEs. By 2004 the number of foreign investments enterprises operating in China rose to 490,000. By 2005 around 55% of the foreign-invested enterprises reported negative taxable profits and paid no taxes.

Additionally, the Chinese government stated that “tax evasion through transfer pricing accounts for 60% of total tax evasion by multinational companies”. A 2007 survey by the National Bureau of Statistics claimed that almost two-thirds of apparently loss-making foreign enterprises had deliberately made false reports and used transfer pricing to avoid paying US\$4.39 billion in taxation. The (ab)use of transfer pricing was based mainly on the adjustment of import and export prices³¹ that shift profits from China to lower tax jurisdictions.

In the case of Russia, by 2004, oil and gas exports accounted for 25% of the country’s GDP³². Corporations exploited tax loopholes by creating offshore shell companies³³ to purchase oil at low cost from production sites and then sell it back again through intermediaries.

On the other hand, in developed and advanced economies, the landscape is similar to the (ab)use of import and export prices as the primary tool. E.g. Pharmaceutical companies “*were invoicing as much as ten times or more for the same product sold to one subsidiary out of which profits were drawn as compared to another subsidiary where profits were permitted to remain*”(Sikka & Willmott, 2010, p. 349). Another known strategies in developed economies are the transfer of valuable intangibles to related foreign entities and cost-sharing arrangements.

The WorldCom case, a US-based company, revealed the (ab)use of transfer pricing for a variety of trademarks, trade names, trade secrets, brands, service marks and intellectual property. KPMG advised the company to establish an intangible asset program in order to increase its post-tax earnings. The parent company registered these in low-tax jurisdictions and licensed it to its subsidiaries in exchange for annual royalty payments³⁴.

As stated in chapter 1, some examples of tax avoidance by MNEs include pharmaceutical corporations. Concerning to this industry, OXFAM report (2018) unveils the sophisticated tax planning methods used by Pharmaceutical MNEs to take advantage of the system and avoid tax payments (Figure 7). OXFAM analysed the four largest US drug companies and found a pattern in profits average (7% in developed and 5% in developing countries (OXFAM, 2018, pp. 4–7))

³¹ One study estimates that Chinese exports by multinational corporations are underpriced by an average of 17% and imports are overpriced by an average of 9% (Sikka & Willmott, 2010, p. 347).

³² Russian official data reported 9% rather than 25% (Sikka & Willmott, 2010, p. 347)

³³ Trading companies that simply disappear as soon as possible after concluding as many transactions with end customers as possible.

³⁴ According to Sikka & Willmott, the insolvency examiner found that in some cases the royalties charged exceeded the company’s consolidated net income (1998-2001), and for some subsidiaries represented 80-90% of net income.

that does not match with the annual global profits reported of up to 30%. In countries that charge low or no corporate tax rates, these companies reported 31% of profit margins.

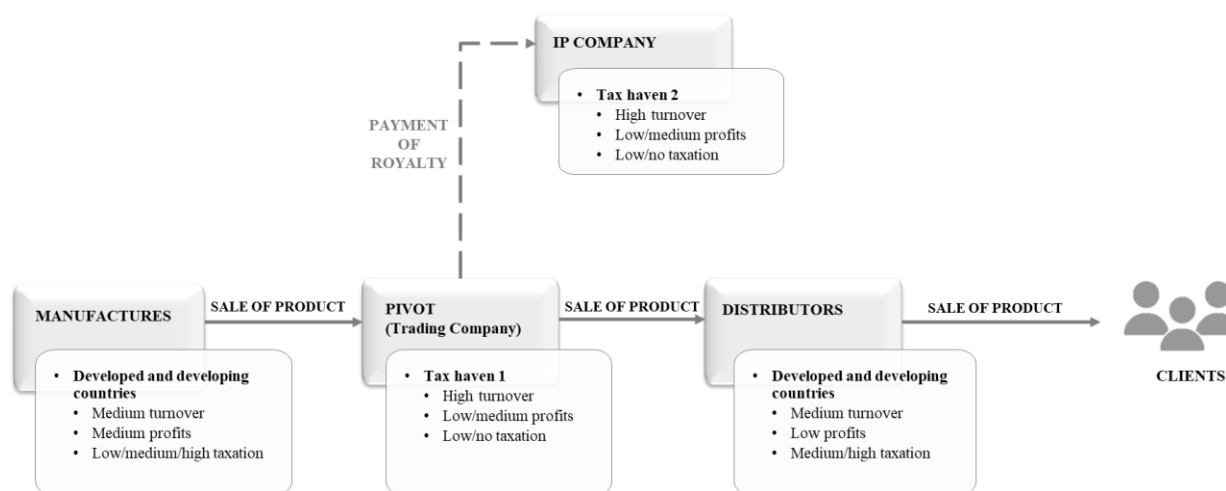


Figure 7. Structure of a pharma company

Source: adapted from (OXFAM, 2018)

Besides, OFXAM calculated an underpayment of nearly USD 112 million in taxes annually³⁵ in developing countries and USD 3,7 billion³⁶ in advanced economies.

In the case of pharmaceutical corporations, and its taxes practices, two facts become relevant. The first, pharmaceutical companies spent more on marketing than on research and development³⁷. These marketing costs are tax-deductible in the US. The second, countries with advanced economies provide substantial funding for health research³⁸. Patients in advanced economies thus often pay twice for medicines through the taxes and at the pharmacy or even three times counting on the extra money in taxes avoided by pharmaceuticals.

The profit-shifting in pharmaceutical corporations may involve domiciling a patent in a subsidiary not in the home country but a tax haven. This subsidiary charges licensing fees to other subsidiaries around the globe. The fees payment is a tax-deductible expense in the typical

³⁵ In seven developing countries (Chile, Colombia, Ecuador, India, Pakistan, Peru and Thailand) between 2013 and 2015 for the small sampling of subsidiaries OXFAM was able to access. (OXFAM, 2018, pp. 18–20)

³⁶ Between 2013 and 2015 in 9 countries considered advanced economies (Australia, Denmark, France, Germany, Italy, New Zealand, Spain, UK and US). (OXFAM, 2018, pp. 29–31)

³⁷ Between 20% and 50% more. (OXFAM, 2018, p. 13)

³⁸ All 210 drugs approved in the United States between 2010 and 2016 benefited from publicly funded research, either directly or indirectly. (Galkina Cleary, Beierlein, Khanuja, McNamee, & Ledley, 2018, p. 2330; OXFAM, 2018, p. 13)

jurisdictions, while receiving the fees income by the subsidiary in a tax haven at low or not tax rates. This pivot strategy is also known as “double Irish” and “Dutch sandwich” tax planning structures (see Figure 8).

Figure 7 shows the stylised structure of a pharmaceutical corporation, including four subsidiaries links organised to minimise tax payment through artificially shifted profits using the royalties tool to transfer profit to an *Intellectual Property company* (with high profit and low or no taxation).

CHAPTER IV

4. THE APPLICATION OF TRANSFER PRICING METHODS IN INTERNET-BASED BUSINESSES

The concept of the digital economy refers to an economy based on digital technologies³⁹ what includes internet-based business. It means the convergence of computing and communication technologies through the internet and the resulting flow of information and technology.

The digitalisation is considered the most crucial development of the economy since the industrial revolution and one of the significant drivers of growth and innovation. In digital business models, the central tax challenges appear from the decreasing relevance of a physical presence in the market of the customers, the increasing importance and mobility of intangibles and the high degree of integration of the value chain (Olbert & Spengel, 2017, p. 4).

The use of information and communication technologies (ICT) reshaped the way people interact with each other and how MNEs do business. Firms across all industries are implementing internet-based digitalisation strategies to expand or improve their business (OECD, 2015, p. 52). Teece & Linden (2017) states that a well-designed business model balances the provision of value to customers with the capture of value by the provider.

Traditional definitions of “an industry” are becoming outdated as digitisation and networking drive convergence across numerous formerly separate areas of activity including banking, IT, advertising, social media, print, broadcasting, timekeeping, mapping, and insurance (Teece & Linden, 2017).

According to Juranek et al. (2018), the digital economy characterises by the use of intellectual property such as software, patents, and trademarks and the pricing of such intangibles is widely used to shift profits to low-tax countries.

This profit shifting is the base of the growing concern on how many MNEs set their structures to minimise or avoid taxes. Even if the digital economy itself and the new business models do not generate specific BEPS issues, some of its main features exacerbate BEPS risks. (Kerschner & Somare, 2017, p. 259; OECD, 2015, p. 11; Olbert & Spengel, 2017, p. 8)

Due to the technology development, MNEs utilise the digital economy to sell goods in places where they have no physical presence, which often means profits from such sales do not pay taxes in that country (Pun, 2017, p. 2).

³⁹ Including digital communications networks, computers, software, and other related information technologies (Kerschner & Somare, 2017, p. 258)

The digital business models' characteristics differ, compared to conventional businesses in regards to the high dependency on intangibles, the massive use of data, the development of a multisided business model, the mobilisation of core functions, and the difficulty of determining the location where the MNE created the value of the business (Kerschner & Somare, 2017, p. 260).

Some key features are more relevant in the digital economy from a tax perspective and characterise the modern economy as follow (OECD, 2015, pp. 64–73):

- ***Mobility.*** Decrease of required local personnel and flexibility in the location and other resources regarding three aspects the intangibles, the users and the business functions.
- ***Reliance on data.*** Data management including information about customers, users, suppliers and operations. Implies big data when datasets are large enough.
- ***Network effects.*** It refers to the impact of users' decisions on the benefit perceived by other users.
- ***Use of multi-sided business models.*** A feature that allows multiple groups of persons to interact through an intermediary or platform and the decisions of each group of persons affects the outcome for the other groups by a positive or negative externality.
- ***Tendency toward monopoly or oligopoly.*** Due to the novelty, in some markets can arise companies (usually the first actor) with a dominant position in the short-term.
- ***Volatility.*** The rapid technological advance and its impact in lowering costs of computing power and the use of network reduce barriers to entry for a new internet-based business.

The OECD stresses that the three main characteristics of digital business models are *scale without mass* (low marginal costs of serving a large number of customers), *reliance on intangible assets*, and the *collection of data from user participation*. (OECD, 2018b, pp. 51–59; Olbert & Spengel, 2019, p. 8)

4.1.Digital economy challenges

Perhaps the main challenge arising from the digital transformation of the economy is that, as stated by researchers (Duhigg & Kocieniewski, 2012; Holtzblatt, Geekie, & Tschakert, 2016, p. 133) multinational technology companies are exploiting tax codes that were written for an industrial age and are unsuitable for the modern world's digital economy.

The European parliament based on the digital economy key features stated by OECD (2015, pp. 64–73) highlight the main tax challenges of the digital economy. These include lack of nexus (or taxable presence in a jurisdiction), the reliance of intangibles, data and user-generated content, income characterisation, the spread of new business models, in which the buyer and seller are in different jurisdictions, and the expansion of e-commerce (Hadzhieva, 2019, p. 16)

The OECD identified four risks for current tax systems in the digital economy (Kerschner & Somare, 2017, p. 259; OECD, 2015, p. 12,79; Olbert & Spengel, 2017, p. 8, 2019, p. 3):

- *Arising from direct taxation*

- The attempt to eliminate or reduce tax in the market country as the result of either avoiding a taxable presence or minimising income in the market country. Digital firms can access foreign markets without incurring a taxable nexus according to prevailing, traditional standards.
- The existence of intangible transactions to reduce taxes in the country of residence, in particular, if there is a transfer of intangibles to affiliates in low-tax regimes. The digital firms presumably engage in more aggressive profit shifting activities since they rely on mobile and intangible assets to a greater extent than traditional firms.
- *Arising from indirect taxation*
 - The avoidance of withholding taxes.
 - The elimination or reduction of taxes, through the use of specific contractual payments and the imposition of holding companies. The highly digitalised businesses can locate their point of sales in low-tax consumption jurisdictions to minimise their VAT (or GST) whenever consumption taxes are levied based on the origin principle.

The OECD stresses the determination as a challenge in the area of transfer pricing and intends to align profit taxation with economic activity and value creation. Nevertheless, there is no common understanding of the term “value creation” concerning the digital economy, which would be a prerequisite for a consistent profit allocation within digital business models (Olbert & Spengel, 2017, p. 5).

The digital economy enables non-resident MNEs to operate in some markets without a physical presence. Advances in business practices and ICT, combined with trade liberalisation, led businesses to concentrate many activities abroad where prior was required a local presence.

Different investigations on tax evasion schemes (LuxLeaks, Panama Papers and Paradise Papers) including digital tech giants generated public debate on the need to develop a fair taxation model. At least for the European countries, where digital companies pay an average of 9% effective tax rate compared to other firms that pay 21%. (Hadzhieva, 2019, p. 16)

4.2. The new business models in the digital economy

The organisational form chosen by an enterprise to create value is known as a business model. A business model is a system regarding the inputs, output, business activities, and outcomes that are chosen by an enterprise to create value over a short, medium, or long term. (Ernst & Young, 2014, p. 2; Kerschner & Somare, 2017, p. 262)

The top value drivers in the MNEs consists of *organisation, resources, activities*, and a *strategic decision to take risks* (Kerschner & Somare, 2017, p. 262). Research and macroeconomic statistics confirm that data is an increasingly important value driver (Olbert & Spengel, 2019, p. 15).

The adoption of ICT combined with the rapid decline in price and increase in performance of these technologies expanded market reach, and lowered costs, enabling the development of new products and services. Technologies changed the production and delivery processes of products and services and in consequence, the business models (OECD, 2015, p. 52).

Some of the new business models identified by Kershner & Somare and the OECD (Kerschner & Somare, 2017, p. 263; OECD, 2015, p. 54) as a result of ICT growth or incorporation are among others, electronic commerce, payment services, application stores, online advertising, cloud computing, electronic trading, and participative network platforms.

Every business model comprises its way to generate profits and create value interacting with the MNEs' value drivers. The advances in ICT promoted different types of business at a substantially more extensive scale and over longer distances than was previously possible. (OECD, 2015, pp. 54–64)

4.2.1. Electronic commerce

Also known as e-commerce, is defined by OECD as *“the sale or purchase of goods or services conducted over computer networks by methods specifically designed for the purpose of receiving or placing of orders. The goods or services are ordered by those methods, but the payment and ultimate delivery of the goods or service do not have to be conducted online. An e-commerce transaction can be between enterprises, households, individuals, governments, and other public or private organisations.”* (OECD, 2011, p. 72)

Electronic commerce covers a broad kind of businesses models with three primaries, such as business-to-business (B2B), business-to-consumer (B2C), and consumer-to-consumer (C2C).

4.2.2. Payment services

Provides a secure way to enable payments online without requiring the parties to share financial information. The provider of payment services acts typically as an intermediary between online sellers and purchasers⁴⁰. The intermediaries receive payment from different sources including credit and debit cards or bank transfers and deposit the funds in seller's account, charging a fee for each transaction, fixed or as a percentage of transaction's value.

4.2.3. App stores

Consists of a digital distribution platform for software often provided as a component of an operating system. Usually, are linked to a consumer's device and allows the purchase,

⁴⁰ Usually through software-as-a-service (SaaS) model. (OECD, 2015, p. 57)

download and installation in such a device. The platform can include both applications developed by the operating system developer or by a third-party developer.

4.2.4. Online advertising

Online advertising providers use the internet as an intermediate to target and deliver marketing messages to customers. Many internet advertisers developed specific methods for segmenting consumers in order to allow more precise targeting of ads. These methods include ways to monitor ads performance and track interaction with brands.

The monetising method includes the payment for some time but besides, the cost-per-click (CPC), cost-per-mille (CPM) and cost-per-action (CPA). The latter implies a specific action by the target customer, e.g. the purchase of a product.

4.2.5. Cloud computing

Cloud computing is the provision of standardised, configurable, on-demand, online computer services, which can include computing, storage, software, and data management, using shared physical and virtual resources⁴¹. Due to the characteristics of the resources, customers have granted access from a variety of devices (pc, mobile, laptops and tablets) independent of their physical location, accessing the computer resources in the amount and time needed.

This type of business provides customers with a cost-effective alternative to purchasing and maintaining their own IT infrastructure. The most common service levels of cloud computing are infrastructure-as-a-service (IaaS), platform-as-a-service (PaaS), software-as-a-service (SaaS), content-as-a-service (CaaS) and data-as-a-service (DaaS).

4.2.6. High-frequency trading

It is a business model that uses sophisticated technology, including complex computer algorithms and advanced hardware, in order to trade securities at high speed. This kind of transactions implies execution times measured in microseconds and exploit small price variations or opportunities for market arbitrage that may occur for only milliseconds.

⁴¹ Cloud computing is defined in the report of the US National Institute of Standards and Technology (NIST) as “ a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g. networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction”. (OECD, 2015, p. 73)

4.2.7. Participative networked platforms

A participative networking platform is an intermediary that enables users to collaborate and contribute to developing, extending rating, commenting on and distributing user-created content⁴². The most common practice is to involve customers via social media and through feedback.

The revenue models in the digital economy are diverse as well. The most common include a variety of ways in which businesses turn value in revenue as follows (OECD, 2015, p. 64):

- ***Advertising-based revenues.*** Offers free or discounted access to content in exchange for requiring viewing advertisements.
- ***Digital content purchases or rentals.*** Users pay per item downloaded (e.g. e-books, videos, apps, games and music).
- ***Selling of goods.*** Include online retailers of tangible goods.
- ***Subscription-based revenues.*** This model includes a regular-base payment for accessing digital content.
- ***Selling of services.*** Comprise traditional services that can be delivered online such as legal services, financial services, consultancy services and travel agency.
- ***Licensing of content and technology.*** Typically includes access to specific online content such as algorithms, software, cloud-based operating systems and specialist technology.
- ***Selling of user data and customised market research.*** Trade with data for marketing purposes, e.g. internet service providers (ISPs), data brokers, data analytics firms, telemetrics and data gained from non-personal sources.

The interim report on tax challenges arising from digitalisation (OECD, 2018b, pp. 60–72) groups the business models based on value creation in the digital economy into three. *Value chain: the reseller of tangible goods*, create value by selling goods to final customers through an online store. *Value network: the ride-for-hire company*, a digital platform that creates value by matching vendors and consumers. *Value shop: Cloud computing*, take care of users or customers with a technology-intensive application need and is fundamental in accelerating the digitalisation of other business and the whole economy.

4.3. Tax measures targeting digital activity

As noticed in chapters 2 and 3, although when discussion about the arm's length principle, transfer pricing and tax avoidance started in the early '30s, loopholes still appearing as an

⁴² User created content (UCC) includes various forms of media and creative works (written, audio, visual, and combined) created by users. (OECD, 2015, p. 62)

externality of globalisation processes and the overlapping of multilateral and local tax jurisdictions and laws. An even more difficult issue arises from digitalisation changing the traditional brick and mortar model to the omnipresence of MNEs and its services.

While the OECD tends to avoid any tax-related ring-fencing, by the lack of international consensus the European Commission in a clear ring-fencing initiative proposes a solution in the short-run, a digital services tax (DST) bordering on a blurred line with double taxation and legal uncertainty. Moreover, in the long-run, the proposal is a significant digital presence (SDP), more aligned with the OECD BEPS actions. (Olbert & Spengel, 2019, p. 2)

Regarding the significant digital presence, if the data obtained are site-specific, this could justify the tax nexus. In that case, a permanent virtual establishment would be recognised domestically, which would make the company liable to tax at that location. (Becker & Englisch, 2017)

As stated by Becker & Englisch (2017, p. 808), the European Union proposal for a compensation tax has a political symbolism pointing to start negotiations of extensive reform. At the end of the process, the expected result is a general reform of withholding tax that fits into the current tax system.

“Everyone is aware there is a new business model that profits from the collection and selling of data. We have to have a fair tax system for this new model”, said Bruno Le Maire, the French finance minister (Wintour, 2019).

As many as 11 EU countries already introduced direct tax measures targeting digital activity (Hadzhieva, 2019, p. 39). Table 6 lists the leading five European countries (including tax rate and effective date) which started the deployment of the digital services tax after the European Commission issued two proposals for Council Directives on 21 March 2018⁴³, regarding a fair taxation system that fit for the digital economy.

Table 6. European digital services taxes.

	France	Austria	Italy	Spain	UK
Tax rate	Up to 5%	3%	3%	3%	2%
Effective	1 January 2019	2020 (at the latest)	30 June 2019	To be defined (Approved in January 2019)	1 April 2020

Source: (KPMG, 2019; KPMG International, 2019, p. 9; PWC, 2019)

⁴³ (1) Taxation of profits based on a corporation's Significant Digital Presence (SDP) (European Commission, 2018b) and (2) a standard system for a Digital Services Tax (DST) (European Commission, 2018a). While the latter (2) option should serve as an interim solution until definite rules on the first (1) option can be established as a comprehensive solution, both proposals ultimately aim at the attribution of taxing rights to the jurisdiction where users are located (Olbert & Spengel, 2019, p. 8).

Concerning the digital services taxes, the French finance minister announced, previous to G7 meeting, the approval by the French parliament on July 2019 of a pioneering digital tax. The GAFA tax – an acronym for Google, Apple, Facebook and Amazon-, will impose a 3% levy on the total annual revenues of the largest technology firms providing services to French consumers (Chrisafis, 2019).

In the same line, the United Kingdom tax authorities are planning as well a similar digital services tax of 2% on the revenues of search engines, social media platforms and online marketplaces, and include revenues from associated advertising businesses, serving the UK customers. The tax would become effective in April 2020 to companies with global revenues more than £500m and revenue of at least £25m from UK activities. (PWC, 2019)

But not only the European Union started the unilateral measures to tax the digital activities. Table 7 shows other global initiatives pointing to the fair and effective taxation to the digital economy MNEs.

Table 7. Unilateral measures introduced globally

Country	Unilateral measure
Australia	Multinational Anti-Avoidance Law (MAAL)
New Zealand	Digital Services Tax
Israel	New Nexus and Significant Economic Presence Test
India	New Nexus and Equalisation Levy
Saudi Arabia and Kuwait	Virtual PE (Permanent Establishment)
Taiwan	New Nexus
Turkey	Withholding Tax on E-payments

Source: adapted from (Hadzhieva, 2019, pp. 41–43)

The detail on the type of applicable tax measures stands in chapter 5.

4.4. Some cases

In contrast to the manufacturing industries, in which the transfer pricing is the main issue, in the digital economy, the focus is on royalty management and the licensing (and sublicensing) of intellectual property.

As stated in section 2.1.1, royalties are often linked to the digital economy as they represent compensation of intellectual ideas in the form of intangible assets. In this manner, one of the most used methods to avoid tax payment is the “Double Irish With a Dutch Sandwich” (see Figure 8) in which the payment of royalties goes to a tax haven. E.g. Google its affiliates royalties for the use

of its search engine and the income of such arrangements are paid to Bermuda (Juranek et al., 2016, p. 2).

Holtzblatt, Geekie, & Tschakert (2016) analysed the Apple case and how the company exploited the US transfer pricing rules⁴⁴ which allow earning royalties in low-tax jurisdictions to support its global tax minimisation strategy.

As mentioned in section 4.1, one of the challenges in the digital economy is the existence of intangible transactions. The big digital MNEs use the intangibles as a mechanism because some corporation's earnings are not created from tangible products, but rather from intellectual property, such as the patents on the software that makes electronic equipment operate. In other cases, the merchandise items themselves are digital, such as downloadable music⁴⁵. (Duhigg & Kocieniewski, 2012; Holtzblatt et al., 2016, p. 133)

This activity was a big scale strategy. As highlighted by Duhigg & Kocieniewski and Holtzblatt et al. (2012; 2016) *“even though 54 per cent of Apple’s long-term assets, 69 per cent of its retail stores, and 39 per cent of its sales are in the United States, Apple’s accountants have found legal ways to allocate about 70 percent of its profits overseas, where tax rates are often much lower”*.

Martin Sullivan, the Chief Economist at Tax Analysts, said it was the standard operating procedure for the US MNEs. The US MNEs are shifting their research facilities, manufacturing facilities, and switching some regional headquarters into Switzerland and Ireland. Sullivan remarks that if companies have a 35% rate in the US and 12,5% in Ireland, there is an incentive to move their factories to Ireland. *“In other words, the US Treasury is subsidising investment in Ireland”*. He emphasises that almost everybody is in Ireland, all the pharmaceutical companies and the high-tech companies. *“you are stupid if you are not in Ireland”*. (CBS News, 2011)

Figure 8 shows the process used in the “Double Irish With a Dutch Sandwich” for a US-based MNE (Holtzblatt et al., 2016; Khan, 2012), in which:

- An MNE - MOTHER COMPANY- (e.g., Apple, Google Inc., or other company based on the US) transfers intellectual property (IP) such as a patent to a company incorporated in Ireland that has its tax residency in an offshore jurisdiction – COMPANY A - (e.g., Bermuda).
- This COMPANY A sublicenses the intellectual property to a company with a tax residency in The Netherlands – COMPANY B -.

⁴⁴ It applies as well for MNEs based in other home countries (ab) using their own tax legislations.

⁴⁵ It takes far less effort for companies with revenue earned primarily from royalties and digital merchandise to transfer earnings to tax haven nations than for companies in other industries, such as retail or automotive. (Holtzblatt, Geekie, & Tschakert, 2016)

- COMPANY B sublicenses the intellectual property to a company with a tax residency in Ireland – COMPANY C -. On this way, COMPANY C is a wholly-owned subsidiary of COMPANY A.
- COMPANY C sublicenses the intellectual property to corporations with locations in various countries external to the United States, such as Asia or Europe. It is a recipient of royalties from the various corporations in the non-U.S. countries to which it has granted sub-licenses.

In the way back

- COMPANY C keeps a small amount of these royalties (e.g. 5–10 per cent) and forwards the residual to COMPANY B.
- COMPANY B keeps a small amount of the royalties it gets from COMPANY C and forwards the residual to COMPANY A.

Referring to the Apple case (among others) the Secretary-General of the Organisation for Economic Co-operation and Development – OECD said such arrangements could no longer exist. Ireland is dismantling the system allowed such “anomalies”, as well did the Netherlands and the UK governments. (Associated Press (Producer), 2017)

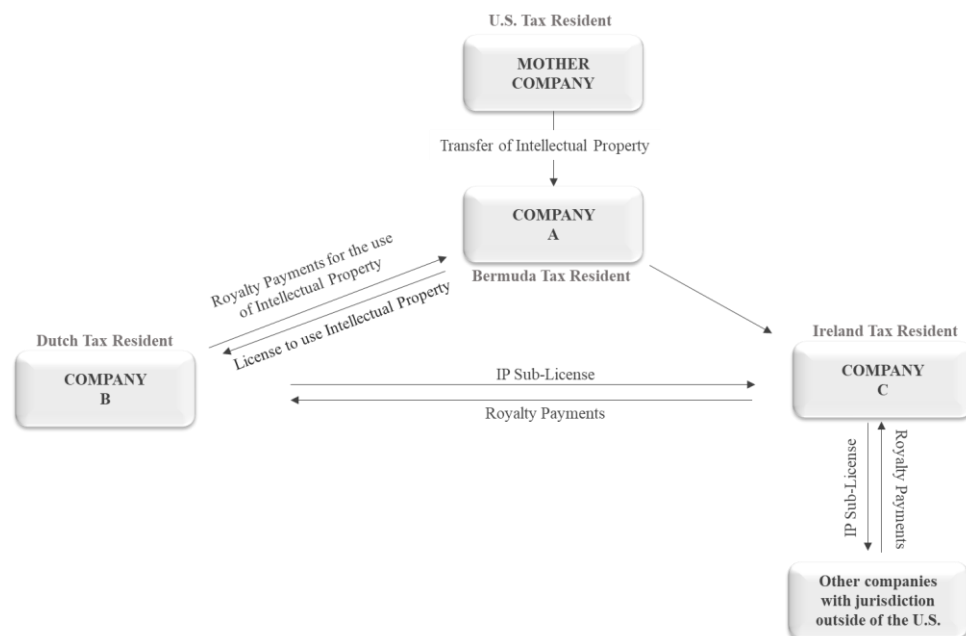


Figure 8. Overview of the "Double Irish With a Dutch Sandwich"

Source: adapted from (Fuest et al., 2013, pp. 3–7; Holtzblatt et al., 2016, p. 136)

The process described in Figure 8 applies as well to MNEs based on other countries with a high tax rate, relative to the Ireland and Netherlands tax rates, in which the regulation allows this kind of procedures.

CHAPTER V

5. ALTERNATIVE RULES

As mentioned in previous chapters, the actual tax regulations were developed based on the manufacturing industry and appear like a challenging topic for the digital economy. For the former, there are more widespread and accepted rules than for the latter. It is a new challenge from a continuously changing environment of information technologies incorporation and changes in business models.

Two kinds of rules appear to control the transfer pricing and royalty payment strategies for profit shifting, the first a country strategy, and second, a multilateral one. The primary multilateral rules come from the OECD and the European Commission. Country rules are mostly in line with this multilateral guidance and must take into account the existence of specific international agreements on investments and double taxation.

As seen, the transfer pricing as a tool of the arm's length principle is the base of the OECD rules. Although, is not a legal instrument per se (Cooper et al., 2016, p. 44). The transfer pricing policy is particularly tricky for an MNE because they need to determine not only a transfer price that is in the best interest of the organisation and the individual entities in the value chain but also one that will satisfy the regulatory requirements of host countries where different divisions are (Cecchini et al., 2013, p. 32).

Moreover, the overlapping of global, regional and local regulations sets a challenge not only for MNEs but for countries' tax legislation. If multilateral mechanisms as the OECD Action Plan on Base Erosion and Profit Shifting (BEPS) do not establish a set of clearly broad accepted rules, every country has the sovereignty on tax matters to define this set of rules. The expected result is an accomplished and coordinated system that makes easier for MNEs, to comply with the tax requirements avoiding double taxation issues.

OECD states about double taxation as follows: *“Where two or more tax administrations take different positions in determining arm's length conditions, double taxation may occur. Double taxation means the inclusion of the same income in the tax base by more than one tax administration, when either the income is in the hands of different taxpayers (economic double-taxation, for associated enterprises) or the income is in the hands of the same juridical entity (juridical double taxation, for permanent establishments). Double taxation is undesirable and should be eliminated whenever possible because it constitutes a potential barrier to the development of international trade and investment flows. The double inclusion of income in the*

tax base of more than one jurisdiction does not always mean that the income will be taxed twice” (OECD, 2017b, p. 171).

In countries with few or no attention on transfer pricing, the transfer mispricing incidents may generate tax revenue impact (loses) unlikely to be recoverable. Nevertheless, the introduction and effective administration of a transfer pricing regime can assist in reestablishing and securing the tax base for future years. (Cooper et al., 2016, p. 11)

Cooper et al. (2016) state that transfer pricing documentation rules play a significant role in mitigating observable profit shifting. country experiences suggest that the introduction and administration of transfer pricing legislation based on the arm’s-length principle can result in significant revenue collection

United Nations concluded that *“Tax revenues are insufficient, and tax rules are inadequate given digitalisation”* and *“small and developing countries are not included correctly in international tax architecture reform efforts.”* (ICRICT, 2019a; United Nations, 2019)

Is therefore required a multilateral framework that will balance the need for sovereign states to protect their tax revenues from aggressive tax avoidance with respect for the right of democratic governments to determine a tax rate appropriate to their circumstances. At the same time, requires measures, that will empower governments to stem their tax losses and to resist pressure from transnational corporations to degrade their tax regimes. (Christensen et al., 2004)

According to ICRICT, the BEPS inclusive framework reported helpful solutions for some tax avoidance mechanisms. Within these, it introduced country-by-country reporting of profits and taxes paid by the largest MNEs and exchange of information among countries. However, still missing to address the core issue, the transfer pricing system. (2019b, p. 2)

Professor Joseph E. Stiglitz (ICRICT, 2018b) said the only way to stop tax competition is with a global agreement (or one with the major players) on a global minimum valid tax. *“It is time for countries to agree on a global minimum effective tax, no matter where you are producing, no matter what you do, you have to pay 15-20% of global profits in taxes. That would stop the race to the bottom”*.

If multinationals pay taxes as single, associated companies, the use of transfer prices to shift profits will disappear, due to their consolidated global income, they would not be able to shift profits through private transactions. This proposal, combined with a global sufficient minimum tax of 20-25% would drastically reduce the financial incentives for multinationals to shift profits between jurisdictions and for countries to cut their tax rates (ICRICT, 2019b, p. 3).

In the line of unitary taxation, ICRICT and European Commission (2019, pp. 75–81; 2018a) examine three approaches i) residence-based worldwide taxation (RBWT), ii) destination-based cash-flow tax (DBCFT), and iii) formulary apportionment. Considering the fairest and most

effective approach would be unitary taxation with formulary apportionment⁴⁶, a method to allocate profits in a balanced way, reflecting both supply and demand. This approach should apportion the MNE's income to the different jurisdictions based on objectively verifiable factors such as employment, sales, resources used and fixed assets. These factors reflect the real economic activity in each jurisdiction. The global formulary apportionment should include, as mentioned before, an agreed minimum rate for taxing all apportioned profits.

Regarding the approaches i) RBWT and ii) DBCFT. Under the RBWT approach⁴⁷, the home country of an MNE would tax the enterprise's global profits, but with full credit for foreign income taxes paid. Under the DBCFT approach⁴⁸ would tax the MNE's global profits in the country where sales to the MNE's ultimate customers take place, after allowing immediate expensing of all cash outlays, including capital investments and labour costs.

The global formulary apportionment refers to a method that “would allocate the global profits of an MNE group on a consolidated basis among the associated enterprises in different countries based on a predetermined and mechanistic formula.” (Li, 2012, p. 72)

Luckhaupt, Overesch and Schreiber (2012, pp. 91–121) propose a transaction-based apportionment method that combines a fixed standard profit margin with apportionment of residual profits. Reliance on a small set of easily observable and measurable factors to assess transfer prices reduces compliance and enforcement costs as well as double taxation risks

This transaction-based apportionment method suggests relying on less sophisticated methods to allocate an MNE's tax base to countries involved. Instead of identifying functions and risks for single transactions, recommend pooling transactions and allocating the profit of such a bundle of transactions along the value-added chain according to easily observable apportionment factors. Such factors could be transaction-related costs, wages, capital or a combination of some or all of these factors. (Luckhaupt et al., 2012, p. 116)

⁴⁶ MNEs must to be taxed as single firms doing business across international borders. (Public Services International, 2019)

⁴⁷ The RBWT approach allocates the rights to tax those profits among the jurisdictions. It gives the initial right to tax to the source jurisdiction, retaining ultimate taxing rights (net of credits due for foreign taxes paid) for the country of residence of the MNE's parent company. This has the advantage of removing the temptation for source countries to offer tax incentives to attract investment, since the profits would anyway be taxed in the parent's jurisdiction. However, RBWT is unlikely to be of benefit to developing countries, where fewer MNEs parent companies are resident. (ICRICT, 2018a, p. 8)

⁴⁸ The DBCFT approach would raise difficult practical questions of taxing a MNE with little or no physical presence in the jurisdiction, so effective collection would need cooperation between states. Furthermore, disallowing deduction of foreign production costs (the border adjustment) would likely be treated as protectionism under the rules of the World Trade Organization, leading to trade wars. (ICRICT, 2018a, p. 9)

Table 8 shows the work by Luckhaupt et al. (2012) summarising empirical evidence about MNEs manipulating transfer prices to reallocate taxable profits and reduce tax payments. Such studies confirm theoretical expectations that MNEs use transfer prices to shift taxable income.

Table 8. Tax planning opportunities

	Studies	Main results
Profit shifting		
Tax Response of Profitability	Grubert and Mutti (1991); Hines and Rice (1994); Huizinga and Laeven (2008); Weichenrieder (2009); Beuselinck, Deloof and Vanstraelen (2009); Blouin, Robinson, and Seidman (2010)	The local tax rate exerts a significantly negative impact on reported profits of MNEs' subsidiaries.
Tax Response of Prices and Transactions	Bernard and Weiner (1990); Swenson (2001); Clausing (2001, 2003, 2006); Bernard, Jensen and Schott (2006)	Transfer prices and the amount of intra-firm transactions are responsive to tax rate differentials, whereas there is no tax response if considering price data of sales to unrelated parties.
Importance of Firm-Specific Transactions	Harris (1993); Grubert (2003); Overesch and Schreiber (2010)	Profit-shifting opportunities are closely related to transactions which are firm-specific.
Profit Shifting and Decision-Making		
Location of Specific Functions	Hines and Rice (1994), Grubert and Slemrod (1998); Desai, Foley, and Hines (2006); Dischinger and Riedel (2011); Karkinsky and Riedel (2009); Overesch and Wamser (2009)	MNEs invest more at typical tax havens if they have unusually high amounts of firm-specific transactions. Moreover, MNEs allocate R&D and intangible assets at low-tax locations.
Investment Effects in High Tax Countries	Grubert (2003); Becker and Riedel (2008); Overesch (2009); Overesch and Schreiber (2010), Overesch and Wamser (2009)	Host-country taxation is less accountable for the location choices of more internationalised companies. With an increasing amount of firm-specific transactions, investment decisions are less responsive to the local statutory tax rate while the tax-level at other locations of the MNE becomes decisive.

Source: (Luckhaupt et al., 2012, p. 93,117)

Despite the OECD statement of profit taxation aligned with value creation (2018b), Richter (2019) remarks the need to clarify the concept of value creation before using it in the international tax policy. A commonly accepted answer to the question of which activities create value is, however, not provided (Olbert & Spengel, 2017; Richter, 2019).

For Taylor et al. (Taylor et al., 2015, p. 28) multi-nationality, tax haven utilisation, and intangible assets are defined as the main determinants of transfer pricing aggressiveness, together with the joint effects of these variables on transfer pricing aggressiveness.

Regarding the transfer pricing legislation, each administration can include the authority to make primary adjustments or another kind as described in Table 9.

Table 9. Main types of transfer pricing adjustments.

Type of adjustment	Description
Primary	The adjustment made by the tax administration to increase the taxable income of a taxpayer following the arm's-length principle
Compensating	Adjustment in which a taxpayer reports an (arm's-length) transfer price for tax purposes that differs from the amount charged between the associated enterprises
Corresponding	Adjustment to the tax liability of an associated enterprise corresponding to a primary adjustment made concerning another associated enterprise concerning a transaction with the first associated enterprise so that the allocation of profits between the enterprises is consistent
Secondary	The adjustment that arises from imposing a tax on a secondary transaction (e.g. a constructive transaction asserted to make the actual allocation of profits consistent with the primary adjustment)

Source: (Cooper et al., 2016, p. 73)

5.1.Addressing the digital economy challenges

The Action 1 Report found that the whole economy was digitalising and, as a result, it would be difficult, if not impossible, to ring-fence the digital economy (OECD, 2019a, p. 1). Arises a potential conceptual consensus on taxing digital businesses with a particular focus on data as a value driver. (Olbert & Spengel, 2019, p. 2)

Instead of the multilateral approach, countries can apply unilateral measures within the legal framework. These unilateral measures are discussed in depth by OECD and the European Parliament (Hadzhieva, 2019; OECD, 2018b), and the main is as follow.

Some identified practical applications of the permanent establishment (PE) threshold, are the *digital presence* or the *service permanent establishment*, to establish a taxable presence unconstrained by physical presence requirements (OECD, 2018b, p. 135). Some measures on incorporating digital presence factors include a variety of non-presence factors⁴⁹ pointing to evidence a purposeful and sustained interaction with the economic life of a country through digital means. Countries such as Israel, Slovak Republic and India modified its PE threshold to include the digital presence of specific digital “online” platforms (e.g. the Slovak Republic targeted specifically online platforms aiming to the intermediation services for transportation and accommodation).

OECD (2018b, p. 140) identifies as well the use of turnover taxes to levy on foreign-based suppliers of digital services and products. These taxes are based on the consumer (customer) location and apply for a resident and non-resident enterprise. Such are the cases of Italy, Hungary and France.

Regarding large MNEs, few tax authorities introduced a diverted profit tax (DPT)⁵⁰ or base erosion and anti-abuse tax (BEAT)⁵¹. This tax is not necessarily aiming to the digital economy MNEs exclusively. The tax authorities evaluate trade structures and intra-group base eroding payments, to encourage them to restructure its operations to reflect the operational realities. Despite the reported positive results, implementation requires a significant investment by tax authorities, including skilled and experienced personnel (OECD, 2018b, pp. 147–151).

Hadzhieva (2019, pp. 43–48) evaluates four specific unilateral measures on digital taxation, the three mentioned above and the equalisation levy. It constitutes a turnover tax on e-services imposed on the supplier part and where it focuses exclusively on the expenditure side of the payment (nature and value of supply), if not charged at a fixed rate and if not eligible for any other type of relief against income tax imposed on the same payment (Hadzhieva, 2019, p. 43).

The literature on royalty taxation is scarce. Theoretical and empirical research (Finke et al., 2014; Fuest et al., 2013) analyses the proposal of withholding taxes on royalty payments that are applicable in the residence country as one policy option to reduce BEPS (Table 10) (Juranek et al., 2016).

In the short run, the main recommendation is to impose new or to extend existing withholding taxes on interest and royalty payments (Fuest et al., 2013, p. 20). As shown in Table 10, some European countries started taxing royalties in higher amount when paid to tax havens.

⁴⁹ The factors intend to establish nexus in situations where a non-resident enterprise, physically established in a remote location, is proactively taking steps to create and maintain an ongoing interaction with the users and customers of a given country (OECD, 2018b, p. 135).

⁵⁰ In the United Kingdom and Australia.

⁵¹ In the United States

Table 10. Taxes on royalty payments for European countries

Country	Corporate tax rate (%)	Source tax on royalty payments (%)
Czech Republic	19,00	15,00*
France	38,00	33,30**
Slovakia	22,00	19,00*

Source: Adapted from (Juranek et al., 2016, p. 3)

Note: *: 35.0 if payment to a tax haven / **: 75.0 if payment to a tax haven

5.2. The OECD approach

The OECD approach to assessing transfer prices relies on the arm's length principle. Comparing the intra-firm transaction to a market transaction. This comparison is commonly biased because market prices for intra-firm transactions rarely exist, and the identification of comparable transactions requires data that is often unavailable. (Luckhaupt et al., 2012, p. 91)

Although the OECD transfer pricing guidelines are the most influential source on transfer pricing, the guidelines are not a legal instrument per se, and, as a result, their legal and practical relevance varies significantly between countries (Cooper et al., 2016, p. 44).

The OECD, consistent with the analytical framework of both the Action 1 Report and the Interim Report, suggests an agreement to examine proposals involving two pillars which could form the basis for consensus. One pillar addresses the broader challenges of the digitalised economy and focuses on the allocation of taxing rights, and a second pillar addresses remaining BEPS issues (OECD, 2019a, p. 1).

The base of its programme of work to develop a consensus solution to challenges arising from the digitalisation of the economy is the premise that in the absence of multilateral action, there is a risk of uncoordinated unilateral action. Both to attract more tax base and to protect the existing tax base, with adverse consequences for all countries, large and small, developed and developing as well as taxpayers (OECD, 2019e, p. 25).

The global anti-base erosion (GloBE) proposal seeks to address the remaining BEPS challenges through the development of two inter-related rules (OECD, 2019e, pp. 26–32):

- An income inclusion rule that would tax the income of a foreign branch or a controlled entity if that income was subject to tax at a rate that is below a minimum rate; and
- A tax to base eroding payments that would operate by way of a denial of a deduction or imposition of source-based taxation (including withholding tax), together with any necessary changes to double tax treaties, for certain payments unless that payment was subject to tax at or above a minimum rate.

These two rules require the coordinated action of countries to avoid the risk of double economic taxation and to explore options and issues in connection with the design of co-ordination,

simplification and threshold measures including interaction with BEPS Action (OECD, 2019e, p. 33)

5.3. The European approach

In September 2017 France, Germany, Spain, and Italy joined by six other member states, wrote to the European Commission asking it to explore new ways of taxing digital companies (France, Germany, Spain, & Italy, 2017; Thomson & Grandjouan, 2018, p. 26).

Thomson & Grandjouan (2018) analyse the European proposals (European Commission, 2018b, 2018a) as follows. These proposals are a short-run one (interim measure), the *digital services tax*, and long-run (comprehensive solution), the *significant digital presence*.

The Commission's *digital services tax* is a 3 per cent levy on the revenues generated from the provision of certain digital services by businesses that meet the draft directive's threshold criteria. A business will meet the threshold criteria if it has i) global revenues of over €750 million, and ii) revenues, which are taxable under the draft directive of over €50 million. Taxable revenues are those generated from:

- Services in which the value generation is through user data from users located in the E.U., either through the sale of the data or its monetisation via targeted advertising; and
- The supply of digital platforms that facilitate interaction between users located in the E.U. (which may include exchanging goods and services by way of the platform).

The commission estimates to collect up to five billion euros a year, affecting between 120 and 150 by the rules.

The commission's taxation on *significant digital presence* aims to enlarge the scope of national corporate income tax rules by:

- Extending the concept of permanent establishment to encompass a "significant digital presence"; and
- Treating it as carrying out specific functions for calculating attributed profits to tax in "host" state.

A business will meet the threshold criteria if it has i) revenues from the provision of digital services to users located in that member state exceed €7 million per tax year. ii) has more than 100,000 users located in that member state who access its digital services per tax year; or iii) creates over 3,000 business contracts for digital services with business users located in that member state in a tax year.

Both proposals exclude from taxation some services not considered as digital services.

5.4. The role of governments

As stated in chapter 4, the increase in digital businesses creates a problem for policymakers worldwide in the regulation of the taxation of multinational corporations; although technology is now one of the most critical industries, many technology corporations are among the least taxed

(E.g. even in comparison to other technology firms, Apple's tax rates are relatively low) (Holtzblatt et al., 2016).

Moreover, even though Apple has helped to recreate industrial sectors, sparked business expansion, and has satisfied consumers, it has also designed corporate policies that exploit weaknesses in the tax regulations. (Holtzblatt et al., 2016)

Olbert & Spengel encourage researchers and policymakers to focus as well on the role of consumption taxes (e.g. VAT in the EU) in the digital economy from two perspectives: as a tax that affects corporate decisions and as a tax that contributes to collecting a fair share of revenue in market countries. (2019, p. 4)

Fuest et al. (2013, p. 2) describe four approaches in which policymakers can try to combat tax avoidance and profit shifting, as described in Table 11.

Table 11. Policymakers approach to combat tax avoidance and profit shifting

Approach	Description	Observations
<i>Extension of residence-based taxation</i>	For example, by tightening controlled foreign corporations (CFC) rules. It includes, for instance, targeted measures like thin-capitalisation rules.	Some countries benefit from certain forms of profit shifting and therefore may not be willing to extend their residence-based taxation. From the perspective of an individual country extending residence-based taxation addresses tax avoidance related to foreign subsidiaries of domestic multinationals but not tax avoidance by domestic subsidiaries of foreign parent companies.
<i>Extension of source-based taxation</i>	For example, the extension of withholding taxes on border crossing interest or royalty payments. It will typically involve changes of existing double taxation agreements. Multilateral coordination is required here.	The unilateral measures have an attractive feature that by definition, do not require international coordination. The drawback is that this will almost inevitably lead to double taxation and undermine the consistency of the national as well as the international tax system. Different countries may have very different interests.

Approach	Description	Observations
<i>Fundamental reform of corporate income taxation</i>	It includes reforming concepts like the introduction of worldwide formula apportionment or destination-based corporate taxation.	It consists of a fundamental reform of international corporate taxation, is desirable but a long term project.
<i>A reform of the reporting and transparency rules in international taxation</i>	Like the obligation for tax advisers to report tax avoidance schemes or country-by-country reporting of multinational investors.	It implies the raising of complicated coordination issues.

Source: adapted from (Fuest et al., 2013, pp. 2-3;12-19)

These approaches imply not only an isolated country initiative but an orchestrated strategy, including a commonly accepted tax framework. In this context, governments play two primary roles, first, with its participation in multilateral scenarios of taxation framework definition, and second, by enforcing transfer pricing regulations and strengthening their internal tax system.

Regarding the challenges for tax policymakers arising from digitalisation, the OECD (OECD, 2018b, p. 169) classifies these into three categories: nexus, data and characterisation. The nexus challenges by the reduced need for physical presence to carry on business and the appropriate jurisdiction for tax purposes. The data challenges due to the growth and sophistication of IT joint with an increased number of companies gathering user information across borders and how to allocate value created by information and its taxation. The characterisation challenges derive from the new digital business models and particularly with the allocation of payments related to cloud computing services.

Finally, it is relevant to analyse the tax systems challenges and the opportunities for administrations created by the digital economy growth (collaborative economy and blockchain) (Hadzhieva, 2019, pp. 82–88)

According to the European Commission (Hadzhieva, 2019, p. 83), the collaborative economy definition is between blurred borders of users-providers-platforms and consumers-businesses-intermediaries, two-sided markets and tri-partite transactions, differences between fair sharing, and commercial platforms.

There are a variety of platforms ranging from durable goods, intangibles and investment goods, to the online labour market and crowdfunding. Uber, Airbnb, BlaBlaCar and Handy have become prominent platforms to put in touch individuals with their peers who can match their need for certain goods and services.

The growth of the digital economy and the emergence of new technologies could lead to new informal (unregistered and untaxed) economic activities. It, including the lack of social contributions and labour links, represents an unclear panorama for social and tax purposes.

Concerning the blockchain technology, it is becoming an enormous source for economic diversification and growth in the European Union. *“Cryptocurrencies and Blockchain technology, on which they rely, are reshaping global cross-border financial connectedness and its increasing ability to automate cognitive tasks given their borderless and intangible nature”* (Hadzhieva, 2019, p. 85).

As the main challenge, governments suspect cryptocurrencies are facilitating money laundering, illicit financing, fraud and tax evasion due to their unique characteristics such as the possibility of peer-to-peer cross-border transfer, anonymity, mining on private phones, and storing money in unregulated wallets.

CHAPTER VI

6. CONCLUSIONS

The paper examined how Multinational Enterprises use transfer pricing methods and royalty payments for tax avoidance purposes using legal ways. Using a literature analysis described the different methods of transfer pricing and royalty payment, evaluated its application in the manufacturing sector, and analysed its applicability to the digital economy to finally assess potential alternative rules.

This paper combined the analysis of transfer pricing and royalty payments in the manufacturing industry and digital economy, including the theoretical and empirical available literature. It included as well the role of governments in fighting against base erosion and profit shifting.

It is clear, based on the research, that the difference in tax rates (between countries) and the forthcoming for shareholders wealth, among other factors, induce MNEs to structure transfer pricing and royalty payment strategies to receive the most significant economic benefit from its activities. In this sense, MNEs walk on a thin line between legal tax avoidance and illegal tax evasion.

Even if European Union losses (in percentage) are higher, tax avoidance by MNEs represents a threat, especially to developing countries for which corporate taxes are usually the larger share of its revenue.

The transfer pricing methods are mainly useful for manufacturing industries. For particular controlled transactions, the uniqueness and lack of comparable information make complicated the transfer price definition. A useful and transparent logical process to assess the use of such methods stands in chapter 2.

The transfer pricing guidelines issued by the OECD are the practical materialisation of the arm's length principle and point to the actions to prevent the Base Erosion and Profit Shifting, BEPS. Nevertheless, for most developing countries, to implement the BEPS actions is problematic because of the lack of resources, including skilled and experienced staff.

The tax codes are made for brick and mortar economies and become almost useless in the digital economy. From the digitalisation of economy arises new taxation challenges based on the core of no physical presence required to perform its economic activity. The royalty payment is a method mainly used in the digital economy as compensation for intangible assets (e.g. intellectual property).

The development of new business models, based on digitalisation, make it harder to allocate the profits to tax. Even more, when scalable without mass, reliable on intangible assets and collecting data from users abroad. As business evolves, the rules for its taxation must also evolve.

The existence of joint frameworks, treaties and international guides tends to clarify and make more accessible the transfer pricing and royalty payment process. However, the existence of specific country regulations increases the risk of double taxation or conflict of laws in international controlled transactions.

Although the arm's length principle is the core of OECD rules, it is not a legal restraint instrument. In the lack of a multilateral common accepted tax framework for the digital economy, countries started applying independent strategies to prevent base erosion and profit shifting.

Different proposed solutions are on the table. In the short run, the proposals point to impose new or extend withholding taxes on interests and royalties. All of the long-run proposals share a crucial aspect, must exist a coordinated multilateral effort to address the tax avoidance issue.

Some approaches refer to residence taxation, other to destination cash flow and other to formulary apportionment — each with pros and cons. Inclusive, one approach aims to establish a global minimum tax. The latter approach is the more rational but with the restriction of a global consensus to applying.

The MNEs behaviour is closely related to the firm structure and the form in which the companies measure their managers.

Main limitations of the research include the absence of primary information to contrast the findings of scholars in secondary sources and the scarce literature on royalty taxation and digital economy empirical exploration. The diversity of the digital economy business models make research scattered and broad.

This work contributes to compile knowledge on how MNEs (manufacturing industry and digital economy) use the transfer pricing and royalty payment methods to shift profits and avoid paying taxes in countries with high tax rates. It is the base to advance in the construction of the state of the art of anti-base erosion and tax avoidance policies.

To develop a further analysis two main aspects should be approached from theoretical and empirical researches: which mechanisms would support effective enforcement of the rules in developing countries and the reaction of MNEs to a global minimum effective tax. It would be desirable as well to develop a prospective analysis in order to define potential future lines and address the challenges with adequate alternative rules.

It is critical to address the MNEs' tax avoidance practices. These represent a lack of wealth for the citizens, not only in the developing world but in developed countries. With the evolution of business models, the gap is getting bigger and requires priority attention.

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APPENDIX A: TAX HAVENS - COUNTRY LISTING AND CLASSIFICATION

Income level ⁵²	Country	Region	Tax haven			OECD Member
			Crivelli 2015	Gravelle 2015	Chardonnet & Langerock 2017	
High income	Andorra	Europe & Central Asia		X		
High income	Antigua and Barbuda	Latin America & Caribbean	X	X	X	
High income	Aruba	Latin America & Caribbean		X	X	
High income	Bahamas, The	Latin America & Caribbean	X	X	X	
High income	Bahrain	Middle East & North Africa	X	X	X	
High income	Barbados	Latin America & Caribbean	X	X		
High income	Bermuda	North America		X	X	
High income	British Virgin Islands	Latin America & Caribbean		X	X	
High income	Cayman Islands	Latin America & Caribbean		X	X	
High income	Channel Islands	Europe & Central Asia		X		
High income	Cyprus	Europe & Central Asia	X	X		
High income	Gibraltar	Europe & Central Asia		X	X	
High income	Hong Kong SAR, China	East Asia & Pacific	X	X	X	
High income	Ireland	Europe & Central Asia	X	X	X	X
High income	Isle of Man	Europe & Central Asia		X		
High income	Liechtenstein	Europe & Central Asia		X		
High income	Luxembourg	Europe & Central Asia	X	X	X	X
High income	Macao SAR, China	East Asia & Pacific		X		
High income	Malta	Middle East & North Africa	X	X	X	
High income	Monaco	Europe & Central Asia		X		

⁵² Based on data from the World Bank (2019).

Income level ⁵²	Country	Region	Tax haven			OECD Member
			Crivelli 2015	Gravelle 2015	Chardonnet & Langerock 2017	
High income	Netherlands	Europe & Central Asia			X	X
High income	Oman	Middle East & North Africa			X	
High income	Panama	Latin America & Caribbean	X	X		
High income	San Marino	Europe & Central Asia	X	X		
High income	Seychelles	Sub-Saharan Africa	X	X		
High income	Singapore	East Asia & Pacific	X		X	
High income	St. Kitts and Nevis	Latin America & Caribbean	X	X		
High income	Switzerland	Europe & Central Asia	X	X	X	X
High income	Trinidad and Tobago	Latin America & Caribbean			X	
High income	Turks and Caicos Islands	Latin America & Caribbean		X		
High income	United Arab Emirates	Middle East & North Africa			X	
High income	Virgin Islands (U.S.)	Latin America & Caribbean		X	X	
Low income	Liberia	Sub-Saharan Africa	X	X		
Lower middle income	Vanuatu	East Asia & Pacific	X	X	X	
Upper middle income	Albania	Europe & Central Asia			X	
Upper middle income	Belize	Latin America & Caribbean	X	X		
Upper middle income	Bosnia and Herzegovina	Europe & Central Asia			X	
Upper middle income	Costa Rica	Latin America & Caribbean	X	X		X
Upper middle income	Dominica	Latin America & Caribbean	X	X		
Upper middle income	Grenada	Latin America & Caribbean	X	X		
Upper middle income	Jordan	Middle East & North Africa	X	X		
Upper middle income	Lebanon	Middle East & North Africa	X	X		
Upper middle income	Maldives	South Asia	X	X		
Upper middle income	Marshall Islands	East Asia & Pacific		X	X	
Upper middle income	Mauritius	Sub-Saharan Africa	X	X	X	

Income level ⁵²	Country	Region	Tax haven			OECD Member
			Crivelli 2015	Gravelle 2015	Chardonnet & Langerock 2017	
Upper middle income	Montenegro	Europe & Central Asia			X	
Upper middle income	Nauru	East Asia & Pacific		X	X	
Upper middle income	Samoa	East Asia & Pacific		X		
Upper middle income	Serbia	Europe & Central Asia			X	
Upper middle income	St. Lucia	Latin America & Caribbean	X	X		
Upper middle income	St. Vincent and the Grenadines	Latin America & Caribbean	X	X		
Upper middle income	Tonga	East Asia & Pacific	X	X		

Source: Based on information from the IMF (Crivelli et al., 2015, p. 24), the Congressional Research Service (Gravelle, 2015, pp. 3–5), and Oxfam America (Chardonnet & Langerock, 2017, p. 3; 2018, p. 21).

Note: The appendix shows a combined analysis of listed tax havens by Crivelli, Gravelle, Chardonnet & Langerock (2017; 2015; 2015) including 52 countries. 28, 43 and 27 countries, respectively. Ten countries are in the three lists (Antigua and Barbuda, The Bahamas, Bahrain, Hong Kong SAR – China -, Ireland, Luxembourg, Malta, Switzerland, Vanuatu and Mauritius), three of them are OECD members (Ireland, Luxembourg and Switzerland). The list includes 62% of high-income countries and 35% of upper-middle-income countries.

APPENDIX B: LITERATURE SUMMARY

Publication Year	Title	Author	Source	Research ⁵³	
				T	E
2019	Dynamic Control of Product Innovation, Advertising Effort, and Strategic Transfer-Pricing in a Marketing-Operations Interface	Fu, Chunyan Cheng, Susu Yi, Yongxi	MATHEMATICAL PROBLEMS IN ENGINEERING : - 2019	X	
2019	Profit shifting and investment effects: The implications of zero-taxable profits	Koethenbuerger, Marko Mardan, Mohammed Stimmelmayr, Michael	JOURNAL OF PUBLIC ECONOMICS 173: 96-112 MAY 2019	X	
2019	Transfer pricing and channel structure of a multinational firm under overseas retail disruption risk	Niu, Baozhuang Liu, Yaoqi Liu, Feng Lee, Carman K. M.	INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH 57 (9): 2901-2925 Sp. Iss. SI MAY 3 2019		X
2019	When Does Tax Avoidance Result in Tax Uncertainty?	Dyrenge, Scott D. Hanlon, Michelle Maydew, Edward L.	ACCOUNTING REVIEW 94 (2): 179-203 MAR 2019	X	
2018	An Evaluation of Alternative Market-Based Transfer Prices	Johnson, Nicole Bastian Loeffler, Clemens Pfeiffer, Thomas	CONTEMPORARY ACCOUNTING RESEARCH 35 (4): 1868-1887 DEC 2018	X	
2018	Anti-profit-shifting rules and foreign direct investment	Buettner, Thiess Overesch, Michael Wamser, Georg	INTERNATIONAL TAX AND PUBLIC FINANCE 25 (3): 553-580 JUN 2018	X	
2018	Computing the transfer pricing for a multidivisional firm based on cooperative games	Clempner, Julio B. Poznyak, Alexander S.	ECONOMIC COMPUTATION AND ECONOMIC CYBERNETICS STUDIES AND RESEARCH 52 (1): 107-126 2018	X	
2018	Conflicting Transfer Pricing Incentives and the Role of Coordination	Blouin, Jennifer L. Robinson, Leslie A. Seidman, Jeri K.	CONTEMPORARY ACCOUNTING RESEARCH 35 (1): 87-116 SPR 2018	X	

⁵³ Type of research. T:Theoretical ; E:Empirical.

Publication Year	Title	Author	Source	Research ⁵³	
				T	E
2018	Do Czech companies influences tax base using intercompany transactions?	Hajek, Jan	POLITICKA EKONOMIE 66 (3): 330-343 2018		X
2018	Fair profit distribution in multi-echelon supply chains via transfer prices	Liu, Songsong Papageorgiou, Lazaros G.	OMEGA-INTERNATIONAL JOURNAL OF MANAGEMENT SCIENCE 80: 77-94 OCT 2018	X	
2018	Flexibility in Income Shifting under Losses	Hopland, Arnt O. Lisowsky, Petro Mardan, Mohammed Schindler, Dirk	ACCOUNTING REVIEW 93 (3): 163-183 MAY 2018	X	
2018	Funds Transfer Pricing in Swedish Savings Banks: An Exploratory Survey	Elliot, Viktor	SCANDINAVIAN JOURNAL OF MANAGEMENT 34 (3): 289-302 SEP 2018		X
2018	How Does Transfer Pricing Risk Affect Premiums in Cross-Border Mergers and Acquisitions?	Mescall, Devan Klassen, Kenneth J.	CONTEMPORARY ACCOUNTING RESEARCH 35 (2): 830-865 SUM 2018	X	
2018	International transfer pricing and income shifting in developing countries: evidence from Ghana	Agana, Joseph Akadeagre Mohammed, Abu-Khanifa Zamore, Stephen	INTERNATIONAL JOURNAL OF EMERGING MARKETS 13 (5): 1132-1153 NOV 29 2018		X
2018	Knocking on Tax Haven's Door: Multinational Firms and Transfer Pricing	Davies, Ronald B. Martin, Julien Parenti, Mathieu Toubal, Farid	REVIEW OF ECONOMICS AND STATISTICS 100 (1): 120-134 MAR 2018	X	
2018	Licensing and innovation with imperfect contract enforcement	Gilbert, Richard Kristiansen, Eirik Gaard	JOURNAL OF ECONOMICS & MANAGEMENT STRATEGY 27 (2): 297-314 SUM 2018	X	
2018	Multinational Tax Avoidance: Virtue Ethics and the Role of Accountants	West, Andrew	JOURNAL OF BUSINESS ETHICS 153 (4): 1143-1156 Sp. Iss. SI DEC 2018	X	
2018	Offshoring and outsourcing in a global supply chain: Impact of the arm's length regulation on transfer pricing	Kim, Bosung Park, Kun Soo Jung, Se-Youn Park, Sang Hun	EUROPEAN JOURNAL OF OPERATIONAL RESEARCH 266 (1): 88-98 APR 1 2018	X	
2018	Politics of Intra-firm Trade: Corporate Price Planning and the Double Role of the Arm's Length Principle	Ylonen, Matti Teivainen, Teivo	NEW POLITICAL ECONOMY 23 (4): 441-457 2018	X	
2018	Risks and transfer pricing regulation at the	Buus, Tomas	PRAGUE ECONOMIC PAPERS 27 (6): 621-	X	

Publication Year	Title	Author	Source	Research ⁵³	
				T	E
	multinational enterprises' routine units: a literature review		636 DEC 2018		
2018	Strategic Manipulation Approach for Solving Negotiated Transfer Pricing Problem	Clempner, Julio B.	JOURNAL OF OPTIMIZATION THEORY AND APPLICATIONS 178 (1): 304-316 JUL 2018	X	
2018	Offshore manufacturing contract design based on transfer price considering green tax: a bilevel programming approach	Singh, Sanjeet Haldar, Nivedita Bhattacharya, Anindya	INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH 56 (5): 1825-1849 Sp. Iss. SI 2018	X	
2018	Tax avoidance and cost of debt: The case for loan-specific risk mitigation and public debt financing	Isin, Adnan Anil	JOURNAL OF CORPORATE FINANCE 49: 344-378 APR 2018	X	
2018	The effect of performance evaluation schemes on predicted transfer prices: Do leadership tone and perceived fairness concerns matter?	Chong, Vincent K. Loy, Chanel Y. Masschelein, Stijn Woodliff, David R.	MANAGEMENT ACCOUNTING RESEARCH 41: 11-19 DEC 2018	X	
2018	The effect of transfer pricing strategies on optimal control policies for a tax-efficient supply chain	Wu, Zhiqiao Lu, Xiangyuan	OMEGA-INTERNATIONAL JOURNAL OF MANAGEMENT SCIENCE 80: 209-219 OCT 2018	X	
2018	The Generalized Nash Bargaining Solution for Transfer Price Negotiations Under Incomplete Information	Haake, Claus-Jochen Recker, Sonja	GROUP DECISION AND NEGOTIATION 27 (6): 905-932 DEC 2018	X	
2018	Transfer pricing regulation and taxation of royalty payments	Juranek, Steffen Schindler, Dirk Schjelderup, Guttorm	JOURNAL OF PUBLIC ECONOMIC THEORY 20 (1): 67-84 Sp. Iss. SI FEB 2018	X	
2017	Accounting and taxation: Conjoined twins or separate siblings?	Sikka, Prem	ACCOUNTING FORUM 41 (4): 390-405 DEC 2017	X	
2017	Application of transfer pricing methods in related companies in Croatia	Percevic, Hrvoje Hladika, Mirjana	ECONOMIC RESEARCH-EKONOMSKA ISTRAZIVANJA 30 (1): 611-628 2017		X
2017	Can corporate diversification induce more tax avoidance?	Zheng, Suyan	JOURNAL OF MULTINATIONAL FINANCIAL MANAGEMENT 41:	X	

Publication Year	Title	Author	Source	Research ⁵³	
				T	E
			47-60 SEP 2017		
2017	Cleaning Up After Chevron: A Proposed Cross-border Pipeline for the Transfer Pricing of Intra-group Debt Transactions	Flanagan, Kailey B.	COLUMBIA JOURNAL OF TRANSNATIONAL LAW 56 (1): 123-171 2017	X	
2017	Do taxes influence the organisational boundaries of international firms? An incomplete-contracting model with empirical evidence	Ma, Xiangjun	JOURNAL OF INTERNATIONAL TRADE & ECONOMIC DEVELOPMENT 26 (7): 801-828 2017		X
2017	International tax planning under the destination-based cash flow tax	Auerbach, Alan J. Devereux, Michael P. Keen, Michael Vella, John	NATIONAL TAX JOURNAL 70 (4): 783-801 DEC 2017	X	
2017	Multinationals' profit response to tax differentials: Effect size and shifting channels	Heckemeyer, Jost H. Overesch, Michael	CANADIAN JOURNAL OF ECONOMICS-REVUE CANADIENNE D ECONOMIQUE 50 (4): 965-994 NOV 2017	X	
2017	Negotiating transfer pricing using the Nash bargaining solution	Clempner, Julio B. Poznyak, Alexander S.	INTERNATIONAL JOURNAL OF APPLIED MATHEMATICS AND COMPUTER SCIENCE 27 (4): 853-864 DEC 2017		X
2017	Offshore outsourcing and ownership of facilities with productivity concerns	Chakravarty, Amiya K.	IIEE TRANSACTIONS 49 (6): 642-651 2017	X	
2017	Panel Regression Model: A Tool for the Estimation of the Arm's Length SME Profitability	Nerudova, Danuse Solilova, Veronika Bohusova, Hana Svoboda, Patrik Litzman, Marek	POLITICKA EKONOMIE 65 (4): 440-459 2017	X	
2017	Partisanship, Tax Policy, and Corporate Profit-Shifting in a Globalized World Economy	Shin, Mi Jeong	COMPARATIVE POLITICAL STUDIES 50 (14): 1998-2026 DEC 2017	X	
2017	Building the "Triple R" in global manufacturing	Kristianto, Yohanes Gunasekaran, Angappa Helo, Petri	INTERNATIONAL JOURNAL OF PRODUCTION ECONOMICS 183: 607-619 Part C Sp. Iss. SI JAN 2017	X	

Publication Year	Title	Author	Source	Research ⁵³	
				T	E
2017	Risk estimation of Romanian large taxpayers based on transfer pricing analysis	Stana, George Bogdan Turlea, Ioan Codrut	ECONOMIC COMPUTATION AND ECONOMIC CYBERNETICS STUDIES AND RESEARCH 51 (3): 281-298 2017		X
2017	Taxing income in the oil and gas sector - Challenges of international and domestic profit shifting	Beer, Sebastian Loeprick, Jan	ENERGY ECONOMICS 61: 186-198 JAN 2017	X	
2017	The Role of Informal Controls and a Bargaining Opponent's Emotions on Transfer Pricing Judgments	Bhattacharjee, Sudip Moreno, Kimberly K.	CONTEMPORARY ACCOUNTING RESEARCH 34 (1): 427-454 SPR 2017	X	
2017	Transfer Pricing: Strategies, Practices, and Tax Minimization	Klassen, Kenneth J. Lisowsky, Petro Mescall, Devan	CONTEMPORARY ACCOUNTING RESEARCH 34 (1): 455-493 SPR 2017	X	
2017	Unprofitable Affiliates and Income Shifting Behaviour	De Simone, Lisa Klassen, Kenneth J. Seidman, Jeri K.	ACCOUNTING REVIEW 92 (3): 113-136 MAY 2017	X	
2016	Allowing firms to choose between separate accounting and formula apportionment taxation	Gresik, Thomas A.	JOURNAL OF PUBLIC ECONOMICS 138: 32-42 JUN 2016	X	
2016	Does a common set of accounting standards affect tax-motivated income shifting for multinational firms?	De Simone, Lisa	JOURNAL OF ACCOUNTING & ECONOMICS 61 (1): 145-165 FEB 2016	X	
2016	Dual transfer pricing with internal and external trade	Johnson, Edward Johnson, Nicole Bastian Pfeiffer, Thomas	REVIEW OF ACCOUNTING STUDIES 21 (1): 140-164 MAR 2016	X	
2016	Is transfer pricing strictness deterring profit shifting within multinationals? Empirical evidence from Europe	Marques, Mario Pinho, Carlos	ACCOUNTING AND BUSINESS RESEARCH 46 (7): 703-730 DEC 2016		X
2016	Impact of taxation on international transfer pricing and offshoring decisions	Wang, Ziping Gao, Wenlian Mukhopadhyay, Samar K.	ANNALS OF OPERATIONS RESEARCH 240 (2): 683-707 MAY 2016	X	
2016	The Proposal of Safe Harbours in the Area of Transfer Prices for Small and Medium-Sized Enterprises	Solilova, Veronika Nerudova, Danuse	POLITICKA EKONOMIE 64 (5): 559-572 2016	X	
2016	Post-production services and optimal integration	Lee, Seungrae	REVIEW OF WORLD ECONOMICS 152 (4):	X	

Publication Year	Title	Author	Source	Research ⁵³	
				T	E
	strategies for the multinational firm		597-628 NOV 2016		
2016	Is silence golden? Evidence from disclosing related-party transactions in China	Lo, Agnes W. Y. Wong, Raymond M. K.	JOURNAL OF ACCOUNTING AND PUBLIC POLICY 35 (5): 540-564 SEP-OCT 2016		X
2016	The Effect of Financial Constraints on Income Shifting by US Multinationals	Dyreng, Scott D. Markle, Kevin S.	ACCOUNTING REVIEW 91 (6): 1601-1627 NOV 2016	X	
2016	Transfer Pricing by Multinational Firms: New Evidence from Foreign Firm Ownerships	Cristea, Anca D. Nguyen, Daniel X.	AMERICAN ECONOMIC JOURNAL-ECONOMIC POLICY 8 (3): 170-202 AUG 2016		X
2016	Use of internal transfer pricing for performance evaluation by Brazilian agribusiness companies	de Souza, Marcos Antonio Rodniski, Cleber Marcos Schnorr, Eduardo Rosa da Silva, Jorge Luiz	CUSTOS E AGRONEGOCIO ON LINE 12 (2): 118-137 APR-JUN 2016		X
2015	Can a Single Country Increase the Taxes of Multinational Corporations? Evidence from the Impact of the 1993 Corporate Tax Rate Increase on Fortune 500 Companies	Jensen, Nathan M. Rosenzweig, Adam H.	JOURNAL OF EMPIRICAL LEGAL STUDIES 12 (4): 757-780 DEC 2015		X
2015	Determinants of tax haven utilisation: evidence from Australian firms	Taylor, Grantley Richardson, Grant Taplin, Ross	ACCOUNTING AND FINANCE 55 (2): 545-574 JUN 2015		X
2015	Determining intra-company transfer pricing for multinational corporations	Gao, Lu Zhao, Xuan	INTERNATIONAL JOURNAL OF PRODUCTION ECONOMICS 168: 340-350 OCT 2015	X	
2015	For logistical reasons only? A case study of tax planning and corporate social responsibility reporting	Ylonen, Matti Laine, Matias	CRITICAL PERSPECTIVES ON ACCOUNTING 33: 5-23 Sp. Iss. SI DEC 2015	X	
2015	Strategic transfer pricing in a marketing-operations interface with quality level and advertising dependent goodwill	Liu, Guowei Zhang, Jianxiong Tang, Wansheng	OMEGA-INTERNATIONAL JOURNAL OF MANAGEMENT SCIENCE 56: 1-15 OCT 2015	X	
2015	Intellectual Property Law	Blair-Stanek,	UCLA LAW REVIEW	X	

Publication Year	Title	Author	Source	Research ⁵³	
				T	E
	Solutions to Tax Avoidance	Andrew	62 (1): 2-73 JAN 2015		
2015	Profit shifting: drivers of transfer (mis)pricing and the potential of countermeasures	Beer, Sebastian Loeprick, Jan	INTERNATIONAL TAX AND PUBLIC FINANCE 22 (3): 426-451 JUN 2015	X	
2015	Substitution across methods of profit shifting	Saunders-Scott, Molly J.	NATIONAL TAX JOURNAL 68 (4): 1099-1119 DEC 2015	X	
2015	Supply chain networks design and transfer-pricing	Fernandes, Rui Pinho, Carlos Gouveia, Borges	INTERNATIONAL JOURNAL OF LOGISTICS MANAGEMENT 26 (1): 128-146 2015	X	
2015	The optimal focus of transfer prices: pre-tax profitability versus tax minimisation	Martini, Jan Thomas	REVIEW OF ACCOUNTING STUDIES 20 (2): 866-898 JUN 2015	X	
2014	Are We Heading Towards a Corporate Tax System Fit for the 21st Century?	Devereux, Michael P. Vella, John	FISCAL STUDIES 35 (4): 449-475 Sp. Iss. SI DEC 2014	X	
2014	Redesign of global supply chains with integration of transfer pricing: Mathematical modelling and managerial insights	Hammami, R. Frein, Y.	INTERNATIONAL JOURNAL OF PRODUCTION ECONOMICS 158: 267-277 DEC 2014	X	
2014	Coordinating Production and Marketing with Dynamic Transfer Prices	Dockner, Engelbert J. Fruchter, Gila E.	PRODUCTION AND OPERATIONS MANAGEMENT 23 (3): 431-445 MAR 2014	X	
2014	Decentralisation, transfer pricing and evaluation of performance: an exploratory study of practices in cooperative farms of Parana	de Almeida, Lauro Brito Panhoca, Luiz Tarifa, Marcelo Resquetti Dal Vasco, Delci Grapegia Tedesco, Odirlei Acir	CUSTOS E AGRONEGOCIO ON LINE 10 (2): 64-85 APR-JUN 2014		X
2014	Global supply chains and transfer pricing Insights from a case study	Seppala, Timo Kenney, Martin Ali-Yrkko, Jyrki	SUPPLY CHAIN MANAGEMENT-AN INTERNATIONAL JOURNAL 19 (4): 445-454 2014		X
2014	Globalisation and Transfer Pricing in Multinational Corporations in Slovakia and OECD Countries - Analytical Study and Decision-making Model on the Choice of Optimal Transfer-pricing Method	Rajnoha, Rastislav Slivkova, Dana Dobrovic, Jan	EKONOMICKY CASOPIS 62 (6): 609-630 2014		X
2014	Integration of the profit-split transfer pricing	Hammami, R. Frein, Y.	COMPUTERS & INDUSTRIAL	X	

Publication Year	Title	Author	Source	Research ⁵³	
				T	E
	method in the design of global supply chains with a focus on offshoring context		ENGINEERING 76: 243-252 OCT 2014		
2014	Transfer Pricing and Sourcing Strategies for Multinational Firms	Shunko, Masha Debo, Laurens Gavirneni, Srinagesh	PRODUCTION AND OPERATIONS MANAGEMENT 23 (12): 2043-2057 DEC 2014	X	
2014	Transfer Pricing and the WTO	Bastin, Lucas	JOURNAL OF WORLD TRADE 48 (1): 59-80 FEB 2014	X	
2014	Transfer pricing as a tax compliance risk	Jost, Sven P. Pfaffermayr, Michael Winner, Hannes	ACCOUNTING AND BUSINESS RESEARCH 44 (3): 260-279 JUN 2014	X	
2014	Transfer pricing rules, OECD guidelines, and market distortions	Behrens, Kristian Peral, Susana Picard, Pierre M.	JOURNAL OF PUBLIC ECONOMIC THEORY 16 (4): 650-680 AUG 2014	X	
2014	Transfer pricing: roles and regimes	Nielsen, Soren Bo	REVISTA DE ECONOMIA MUNDIAL (37): 103-122 2014	X	

Source: ZBW - Leibniz Information Centre for Economics (Leibniz-Informationszentrum Wirtschaft) (2019); Universidad del Rosario's Resources for Learning and Research Centre – (CRAI) including multiple databases such as Business Source Complete, RePEc - Research Papers in Economics, Scopus®, Directory of Open Access Journals, EconLit - American Economic Association, Emerald Insight, World Bank eLibrary and EMIS University (2019); and Web of Science (a tool from Clarivate Analytics) (2019).