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Transfer pricing and income shifting incentives: evidence from Italian multinational companies

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Introduction

This work aims at analysing the transfer pricing phenomenon, both from a theoretical and practical point of view. OECD regulation is described in depth and close attention is paid to the arm's length principle, which is the rationale that is to be followed in pricing transactions between related parties. At the same time, an alternative approach is proposed, the global formulary apportionment, which the European Union values as a possible better option. Intra-firm transactions, double taxation and profit shifting phenomena are discussed, which are strictly related to the transfer pricing issue. Intra-firm transactions are growing in the modern globalized economy, and pose relevant challenges in terms of double taxation, because of their cross-border nature. At the same time, they arise concerns with respect to tax avoidance and profit shifting.

Multinational companies can lower their tax burden not only by manipulating transfer prices of intra-firm transactions, but also by preferentially locating debt. This can be done by funding operations in high-tax countries sourcing debt from group members incorporated in low-tax jurisdictions, so that interest expenses are deducted in high-tax countries and taxes on interest income are paid in low-tax jurisdictions.

This study deeply analyses transfer pricing regulation issued by the OECD and questions the adequacy of the arm's length principle to the nowadays economy, because of its theoretical dependency from comparables. The Transfer Pricing Guidelines issued by the OECD provide 5 transfer pricing methods, and each of them is described. Even if a method hierarchy does not formally exist, the comparable uncontrolled method (CUP) is thought to be the most reliable if comparable transactions between unrelated parties exist and can be used as reference. However, companies are increasingly using the so called transactional profit methods, which, compared to the traditional methods, are less direct, which make the arm's length nature of the transactions more difficult to test. These transactional profit methods are to be used especially when intangibles are involved in the transactions, which make

them very suitable in the current knowledge-based economy, characterized by the increasing importance of investments in intangible assets.

The comparability analysis, which is the heart of the application of the arm's length principle, is described, and special attention is given to the functional analysis, which aims at identifying the role of each participant in a transaction, the assets employed and the risks assumed by each party.

Once an overall picture of profit shifting and transfer pricing phenomena is given, this study provides an analysis of the association between three income shifting incentives (intangible assets, thin capitalisation and multinationality) and tax haven utilization by Italian multinational companies. A similar study has been conducted in the American context by Richardson and Taylor (2015), which have found that these income shifting incentives are positively and significantly associated with the utilization of tax haven countries by US multinationals. Before conducting the analysis, this work describes some of the main differences between the American and Italian scenarios with respect to the above mentioned income shifting incentives. The corporate tax system is different in the two jurisdictions: the US adopts a worldwide system, while Italy a territorial system; however, US is currently shifting towards a territorial system. Differences in the capital structure and ownership of firms can be identified, which may have an influence over the level of debt of firms. Also, American firms tend to invest more in intangibles compared to their Italian counterparts and have a higher level of multinationality.

In light of the above consideration, the analysis reveals a positive and significant association between the use of intangibles and multinationality and tax haven utilization by Italian multinationals. This is similar to what has been found for the American multinational companies. However, in Italy, thin capitalisation seems not to act as an income shifting incentive for multinationals to incorporate subsidiaries in tax haven countries. Some possible reasons are provided, such as differences in thin capitalisation rules between the two countries.

1. Intra-firm transactions

The phenomenon of transfer pricing is strictly related to the increasingly growing presence of multinational enterprises in the world economy. Nowadays, economic trade is more and more characterized by international transactions, and firms expand their business beyond their own national borders, through delocalization and investments in other countries, giving birth to multinational firms. The consequence is a significant increase in intra-firm transactions. The value of intra-firm transactions has increased due to the increasing presence of global value chains and the expansion of trade of multinational enterprises. An intra-firm transaction corresponds to "*international flows of goods or services between parent companies and their affiliates, or among these affiliates, as opposed to arm's length trade between unrelated parties (inter-firm trade)*" (Lanz, R., S. Miroudot, 2011). To give an example of the importance of intra-firm transactions, in 2009, intra-firm trade accounted for 48% of US goods imports and for 30% of US goods exports (Lanz, R., S. Miroudot, 2011).

The use of transfer prices, defined as the "*prices at which an enterprise transfers physical goods and intangible property or provides services to associated enterprises*" (OECD, 2017), in intra-firm transactions, introduces an element of uncertainty into the value of a large portion of international trade. This is why this phenomenon is of big interest to trade policy makers and competition and tax authorities. According to the article 9 of the Model Convention with respect to Taxes on Income and on Capital[1] published by the OECD, an associated enterprise exists when "*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 when the same persons participate directly or indirectly in the management, control or capital of an*

[1] OECD Tax Convention "*provides a means for settling on a uniform basis the most common problems that arise in the field of international double taxation*" (OECD, 2017). The first draft dates back to 1958; however, it was not until 1977 that the model was published (Owens J., Bennett M., OECD Observer, 2008).

enterprise of a contracting state and an enterprise of the other contracting state".

The concept of control extends beyond the control through holding shares or voting power; it also includes the control through debt, blood relationships, and control over different key elements of the business activity carried by the taxpayer such as control over raw materials, sales and intangibles (Neighbour J., 2002).

To better grasp the concept of transfer pricing it seems to be useful to distinguish between four different types of international trade (Bonturi M., Fukasaku, K., 1993):

- intra-industry, intra-firm trade;
- intra-industry, arm's length trade;
- inter-industry, intra-firm trade;
- inter-industry, arm's length trade.

Intra-industry trade may be defined as the mutual exchange of similar goods within the same product category (Grubel, J., Lloyd, P.J., 1975). This can be intra-firm or between unrelated parties. Intra-industry trade can be easily calculated, as only the traditional bilateral statistics for a given category are needed.

A problem arises when intra-firm trade is to be quantified, since knowledge about the relationships between the firms that are involved in the transactions is needed.

Most of the international trade in the OECD countries[2] is of the intra-industry type, and often takes the form of the intra-firm trade.

On the contrary, international trade between developed and developing countries is mostly of the inter-industry type, which reflects large differences in relative factor endowments. This type of trade is characterized by the exchange of products that belong to different industries.

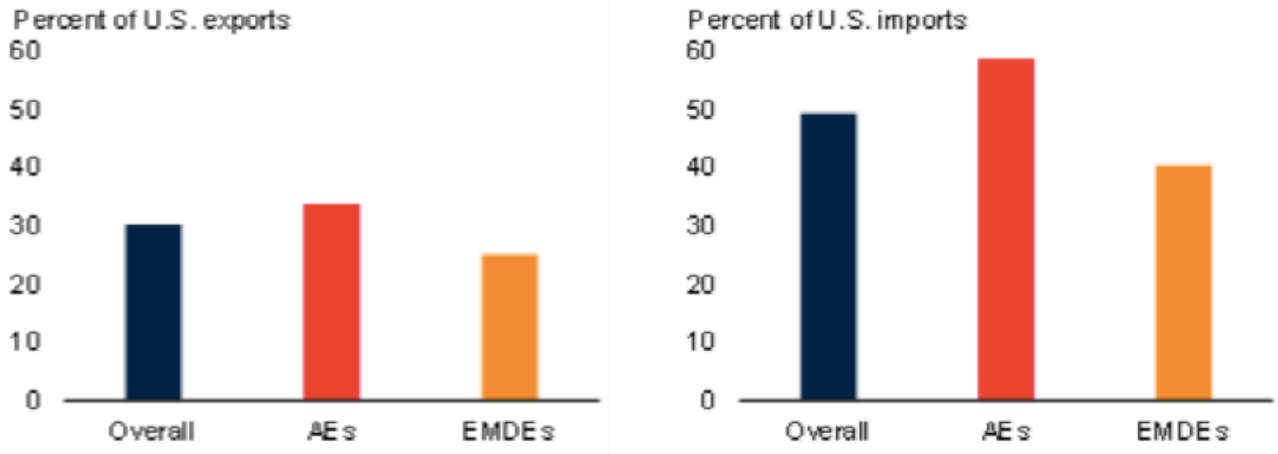
Inter-industry trade is generally of the arm's length type, meaning that it usually occurs between unrelated parties. However, there are examples of the intra-firm type as well. Many Japanese and Eastern Asian international firms are involved in this type of trade; they are both intermediary and organiser of global chains of production and marketing

[2] OECD is the Organisation for Economic Co-operation and Development; it was born on 30 September 1961. Its mission is to is to promote policies that will improve the economic and social well-being of people around the world. It has its headquarter is Paris and 36 members (oecd.org).

operations handling different primary commodities and manufactured goods (Bonturi M., Fukasaku, K., 1993).

It is possible to get information about international intra-firm trade, with a comprehensive set of partner economies, only for U.S., from the U.S. Census Bureau. 43% of total U.S. trade is conducted between related parties (Lakatos, C., Ohnsorge, F., 2017). The graphs that follow show the overall share of intra-firm transactions in total U.S. exports and imports, and distinguish between Advanced Economies (AEs) and Emerging Markets and Developed Economies (EMDEs), as an average for the period 2002-2014.

Figure 1: share of intra-firm trade in total exports and imports

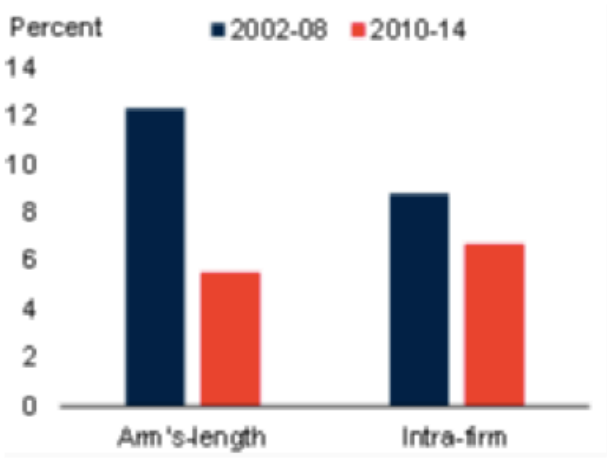


Source: Lakatos, C., Ohnsorge, F., 2017

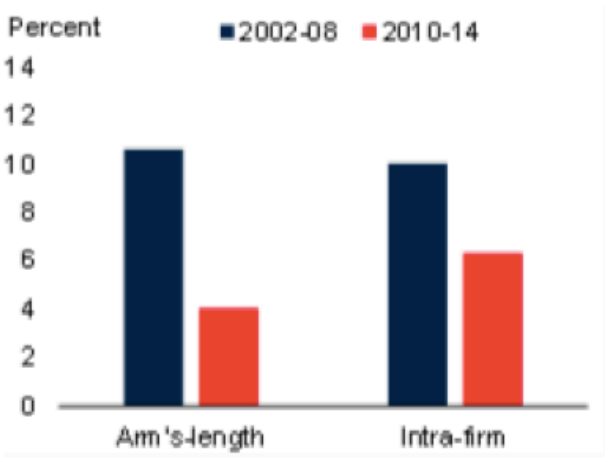
The global financial crisis has had a significant impact on global trade; in the period 2007-2009, global trade volumes contracted by 11%. U.S. trade data shows that arm's length trade accounted for a higher proportion for the overall trade slowdown. By 2014, U.S. intra-firm trade growth had almost returned to its pre-crisis average; more precisely, 4.3% for exports and 5% for imports. In contrast, arm's length trade remained below the pre-crisis average; its growth has an annual average of 4.7%, compared to 11.3% of the pre-crisis period (Lakatos, C., Ohnsorge, F., 2017). This is shown in the following figure.

Figure 2: trade growth

U.S. export growth



U.S. import growth



Source: Lakatos, C., Ohnsorge, F., 2017

Two main compositional effects can be identified as the major contributing factors to the post-crisis slowdown in arm's length trade.

First, exports shipped to EMDEs economies, especially BRICS economies[3], are of the arm's length type; and, because of their post-crisis growth slowdown, arm's length trade slowed down accordingly.

Second, arm's length trade includes those sectors like textiles, apparel and machinery that have struggled the most in the post-crisis period, and sectors like mining, metals and energy that benefited from the pre-crisis commodity price boom (Lakatos, C., Ohnsorge, F., 2017).

According to the same authors, other factors that contributed to the post-crisis weakness in arm's length trade are the reduced access to finance for unaffiliated firms, disadvantages due to size and productivity, shock amplification in complex supply chains, U.S. dollar appreciation and uncertainty.

For the arguments explained above, it seems reasonable to say that the post-crisis economic environment is more favourable for multinational enterprises that focus on

[3] BRICS (originally BRIC) is a grouping acronym that refers to the emerging economies of Brazil, Russia, India, China and, from 2010, South Africa. It has been adopted for the first time by the Goldman Sachs chief economist Jim O'Neill in 2001, arguing that these economies were the most likely to dominate the 21st century globalized economy.

intra-firm transactions. This can raise policy challenges, especially related to transfer pricing. Firms may intentionally raise the value of goods and services produced in countries where corporate income tax is low, and reduce the value of those produced in countries where corporate income tax is relatively higher.

2. Double taxation

Because of the cross-border feature of intra-firm transactions, the taxation of multinational enterprises cannot be done in isolation, but must be dealt in a broad international context. Problems arise both at policy and practical levels. At the policy level, countries have the right to tax that profit that comes from income and expenses which arose within their territory, and should avoid to tax profit that has already been taxed under another tax jurisdiction. At the practical level, countries may encounter difficulties in obtaining data about income and expenses allocation from outside their own jurisdiction. (OECD, 2017). This issues give raise to the double taxation problem. Its definition, given by the OECD, is "*the imposition of comparable taxes in two (or more) States on the same tax payer in respect of the same subject matter and for identical periods*".

Different countries use different systems of taxation: residence-based, source-based, or both. In the residence-based system, the tax base includes income of any juridical person who is resident in a specific country (including income coming from outside that country). Instead, in a source-based system, the tax base is made of any income arising within a specific country's jurisdiction, irrespective of the taxpayer's residence. Since the most applied taxation system is the residence-based one, a problem of double taxation arises when corporate income is repatriated.

There are three main policies, for a residence country, to relieve the double taxation problem: the tax credit scheme, the tax exemption scheme and the tax deduction scheme (Schjelderup G., 1999). Under the tax credit scheme, firms are given credit for the tax paid abroad; under the exemption scheme, income already taxed abroad is

exempted from domestic taxation; finally, under the deduction scheme, foreign taxes can be deducted against taxable income in the residence country.

Very strong tools for mitigating double taxation are the double taxation treaties, which are "*bilateral agreement between two governments to assign taxing rights of cross-border transactions between the two signature states*" (Braun J., Zagler M., 2014). Especially, they help in harmonizing tax definitions, defining taxable bases, allocating taxation jurisdictions, and denoting how to avert double taxation in the case it arises.

Other reasons, for a country, to sign a double taxation treaty are the mitigation of international tax avoidance and, most importantly, the preservation of the domestic tax base. The OECD BEPS (Base Erosion and Profit shifting) project reflects the remarkable importance that policy makers give to these issues. The profit shifting phenomenon is strictly related to mismatches among tax rules of different jurisdiction, and it will be the focus of the next paragraph.

3. Profit shifting

Profit shifting may be explained as the that tool that multinational enterprises use in order to shift profits from high tax rate countries to low tax rate countries to minimize taxes (Shin M. J., 2017).

Tax avoidance is generally done either through debt financing, or through transfer pricing. Since interests on debt are deductible, it is common for multinational enterprises to grant debt to affiliates in high tax rate countries.

Instead, transfer pricing corresponds to setting prices for the transactions among associated enterprises located in different countries. Transfer pricing does not have a negative connotation per se, however, it is generally used by referring to the manipulation of trading prices for transaction among affiliates within a multinational group, to take advantage of differences in tax policies.

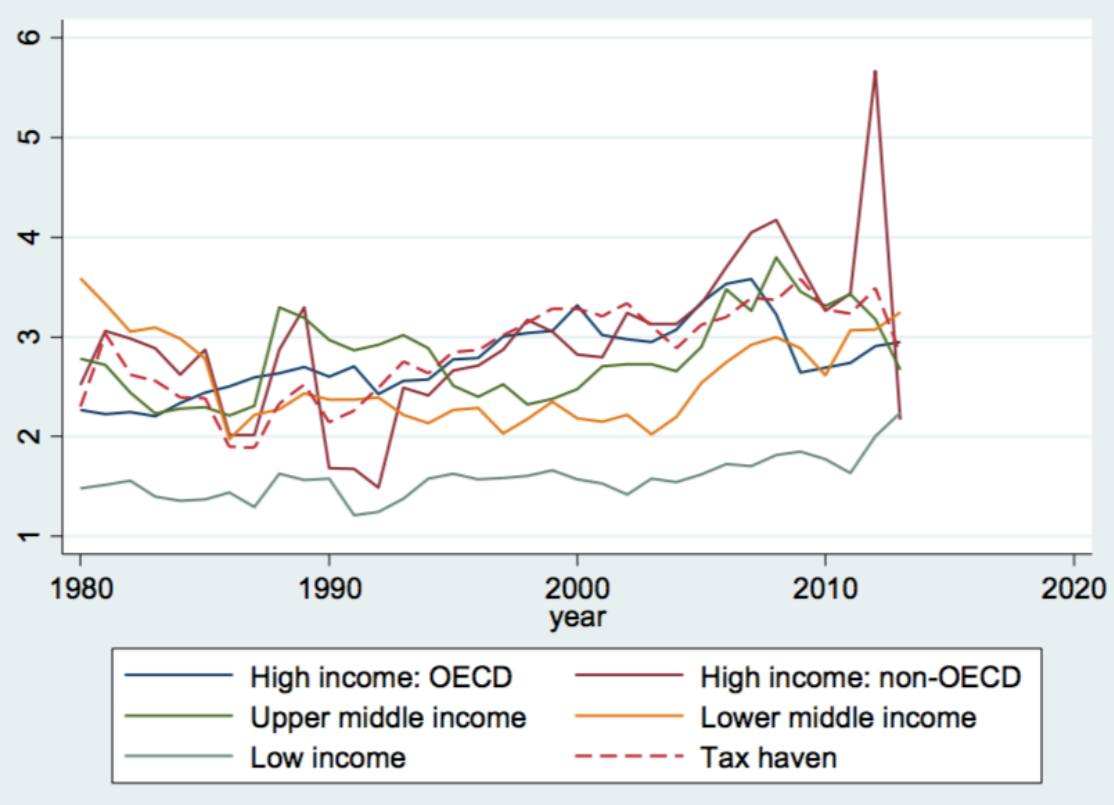
To give an idea of the magnitude of the problem, the OECD estimates a potential corporate income tax loss between 4% to 10% of global corporate income tax, which

would mean between USD 100 to 240 billion per year (OECD, 2015).

This phenomenon is called base erosion and profit shifting (BEPS), which is a big concern for policy makers because seriously undermines the collection of tax revenues. This is why the OECD and G20 set up a framework, the so called BEPS project, to fight this issue. The project started in 2013, and it has been delivered after 2 years, in 2015. It provides 15 actions, which equip governments with the tools necessary to ensure that profits are taxed where the value is actually created (OECD, 2015).

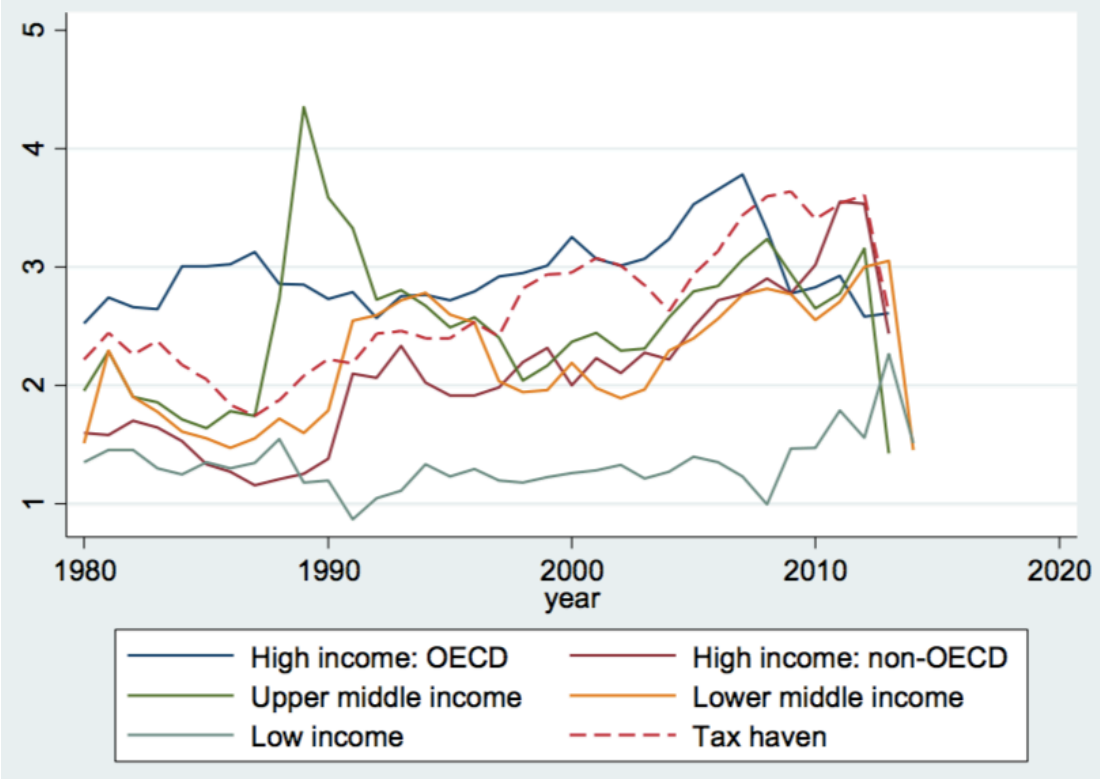
A recent study from Cobham and Janksy (2017) estimates the revenue loss from corporate tax avoidance; they derive their results from International Monetary Fund (IMF) researchers Crivelli et al. (2016) and from the ICTD–WIDER Government Revenue Database (GRD). The figures that follow are taken from the mentioned work.

Figure 3: revenue from corporate income tax, % of GDP, 1980-2013, by income group, (IMF)



Source: Cobham A., Jansky P., 2017

Figure 4: revenue from corporate income tax, % of GDP, 1980-2013, by income group, (GRD)

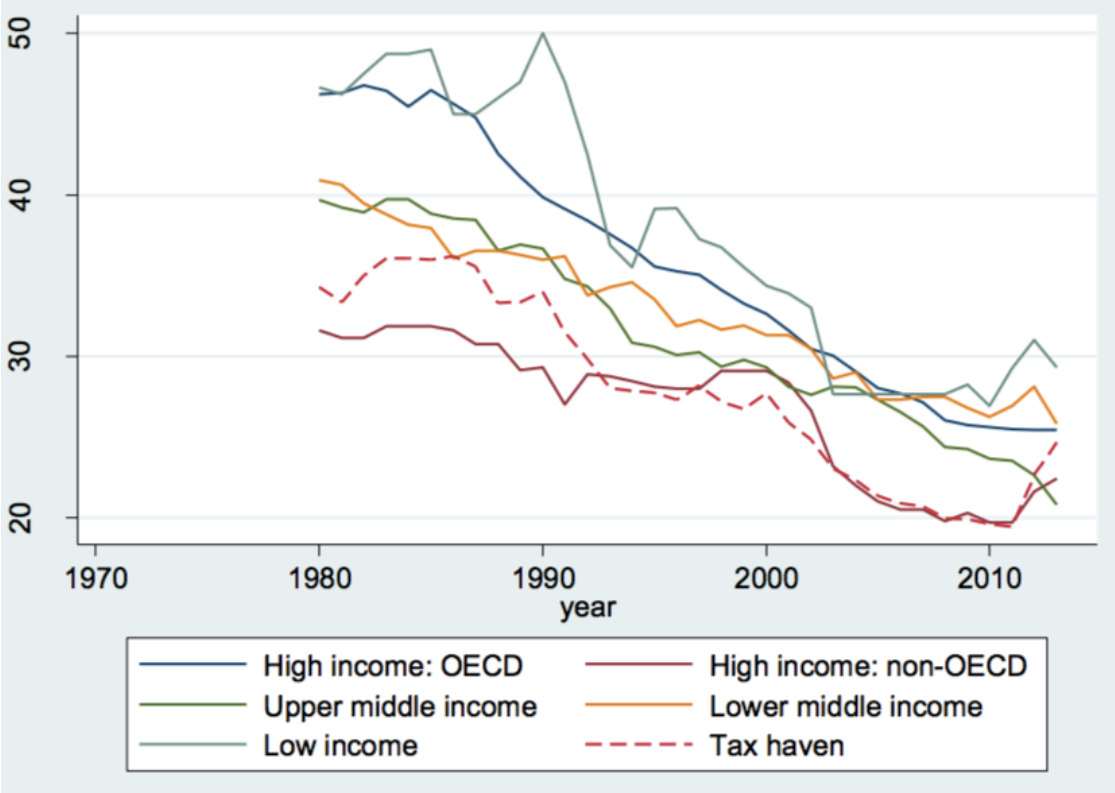


Source: Cobham A., Jansky P., 2017

Figure 3 and 4 show the revenue from corporate income tax in relation to GDP, by income group, over the period from 1980 to 2013. Data are taken both from Crivelli et al. (2016) and from the GRD database.

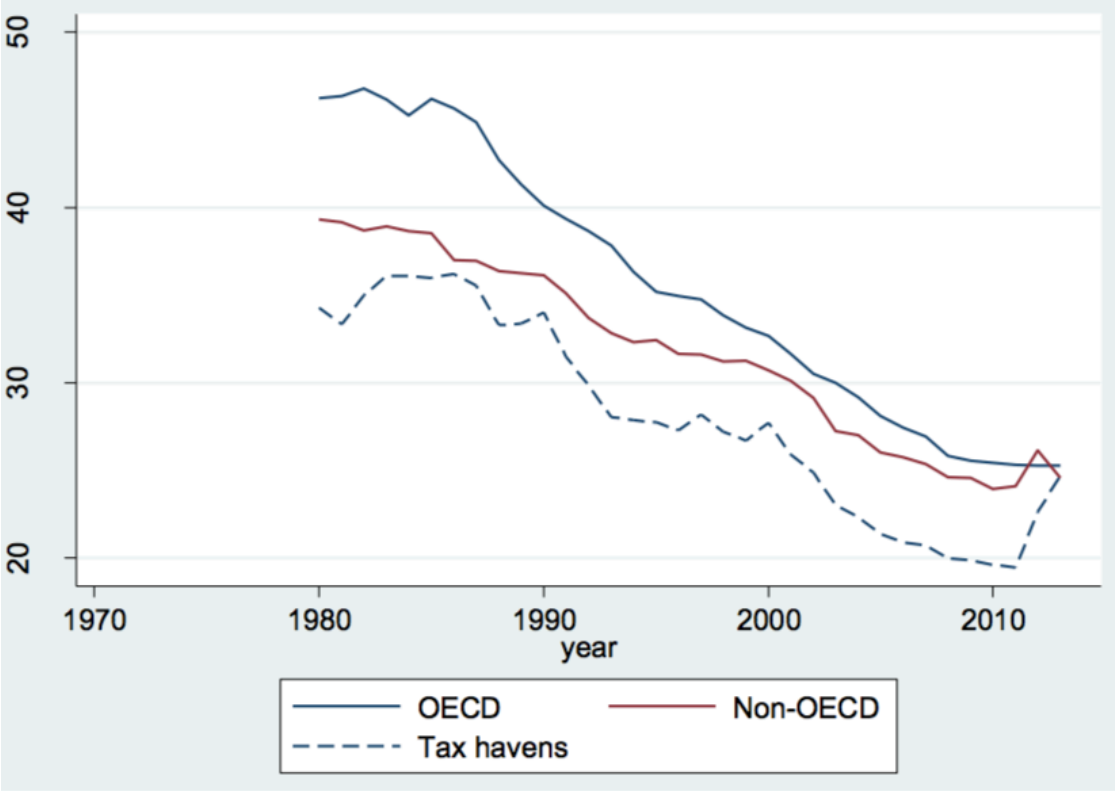
Figure 5 and 6 show the decreasing trend of the corporate income tax rate, over the same period of time. At the beginning of the period, the tax rate ranged from 40% to almost 50%, while towards 2013, it ranged from 20% to 30%.

Figures 5: corporate income tax rate, 1980-2013, by income group



Source: Cobham A., Jansky P., 2017

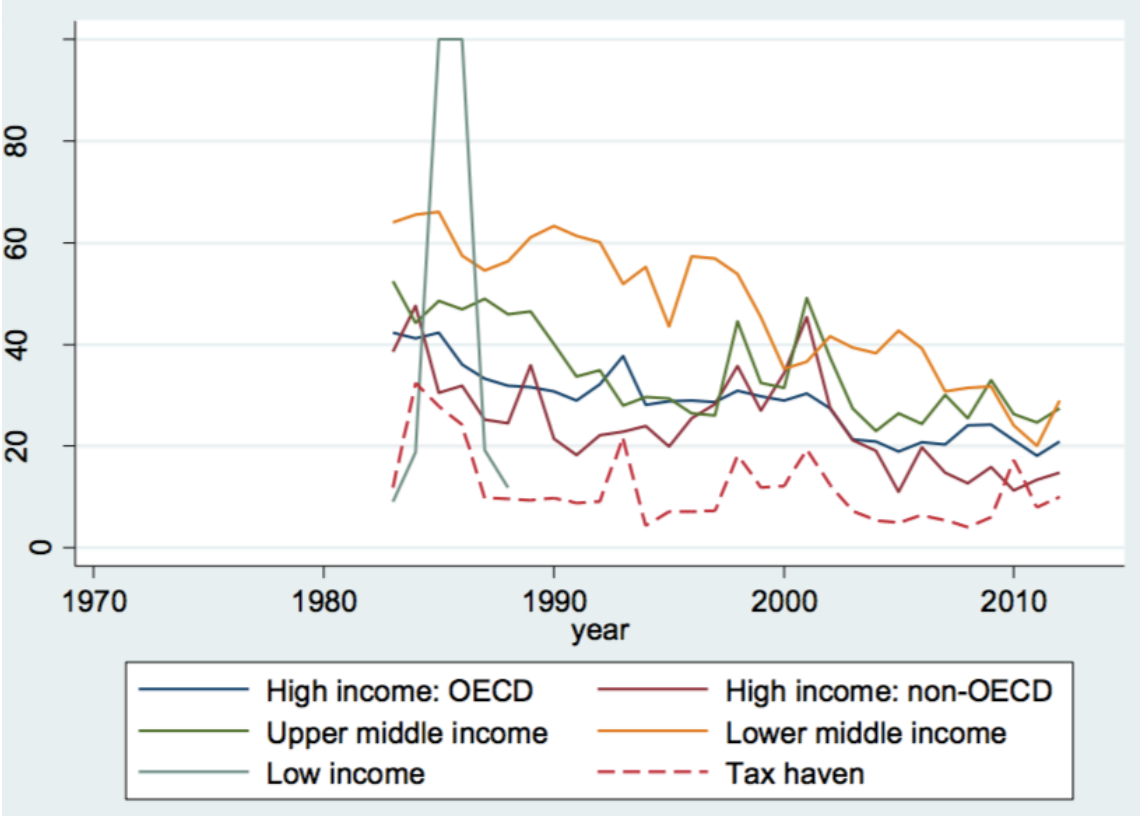
Figure 6: corporate income tax rate, 1980-2013, OECD vs non-OECD vs tax havens



Source: Cobham A., Jansky P., 2017

Figure 7 displays the average effective tax rate, estimated as the ratio of corporate tax to gross profit, over the same period of time as above. Similar to the tax rates, it shows a decreasing trend over time.

Figure 7: average effective corporate income tax rates, 1980-2013, by income group

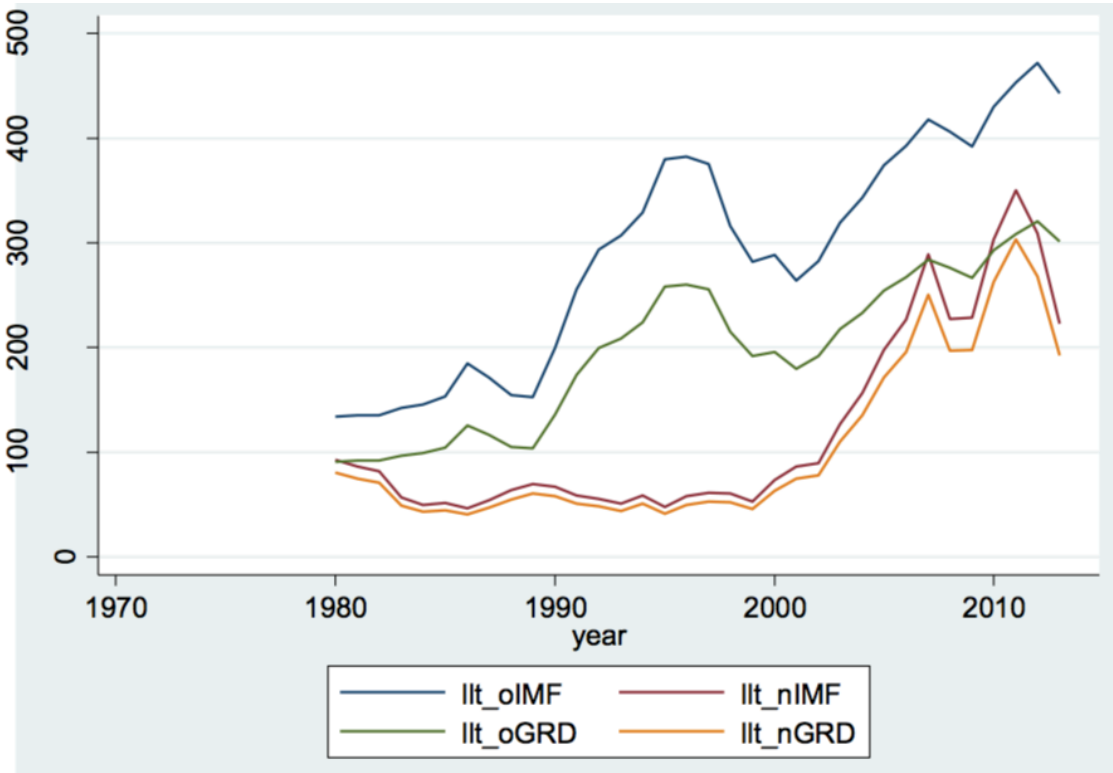


Source: Cobham A., Jansky P., 2017

Figure 8 shows the increasing trend of revenue losses over time. It demonstrates the rise of the profit shifting phenomenon. The results from the two different datasets (IMF and GRD) are better aligned for the non-OECD countries; however, the trends are similar.

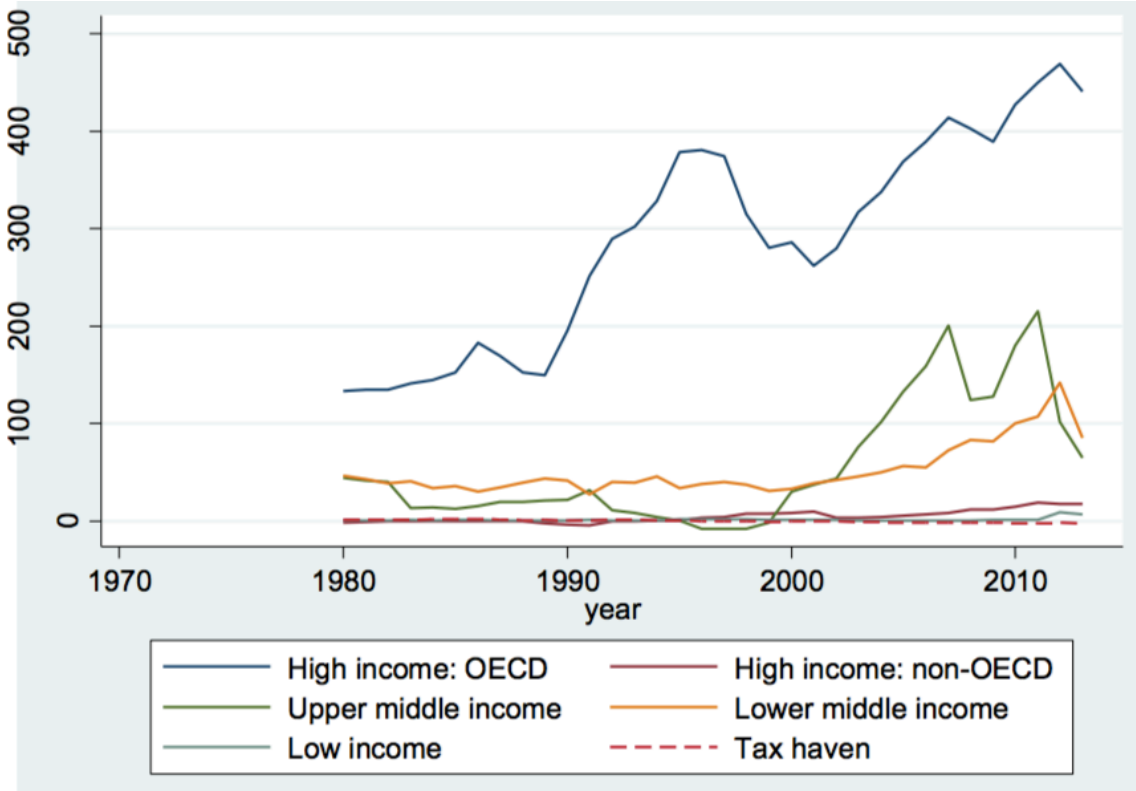
Figure 9 and 10 present the same results, but providing a more detailed breakdown. OECD countries are the big losers; however, upper middle income and lower middle income countries experienced an increase in losses in the 2000s during the commodity price boom.

Figure 8: revenue losses, US$ billion, OECD vs non-OECD



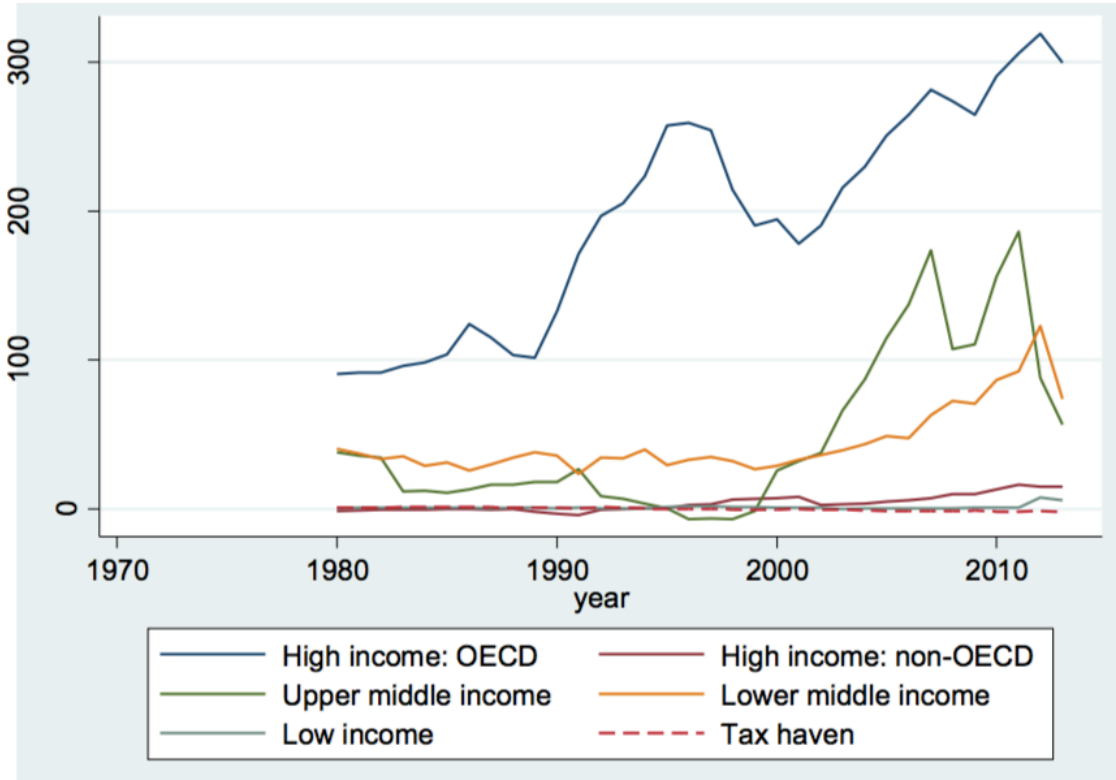
Source: Cobham A., Jansky P., 2017

Figure 9: revenue loss estimate over time, US$ billion, by income group, (IMF)



Source: Cobham A., Jansky P., 2017

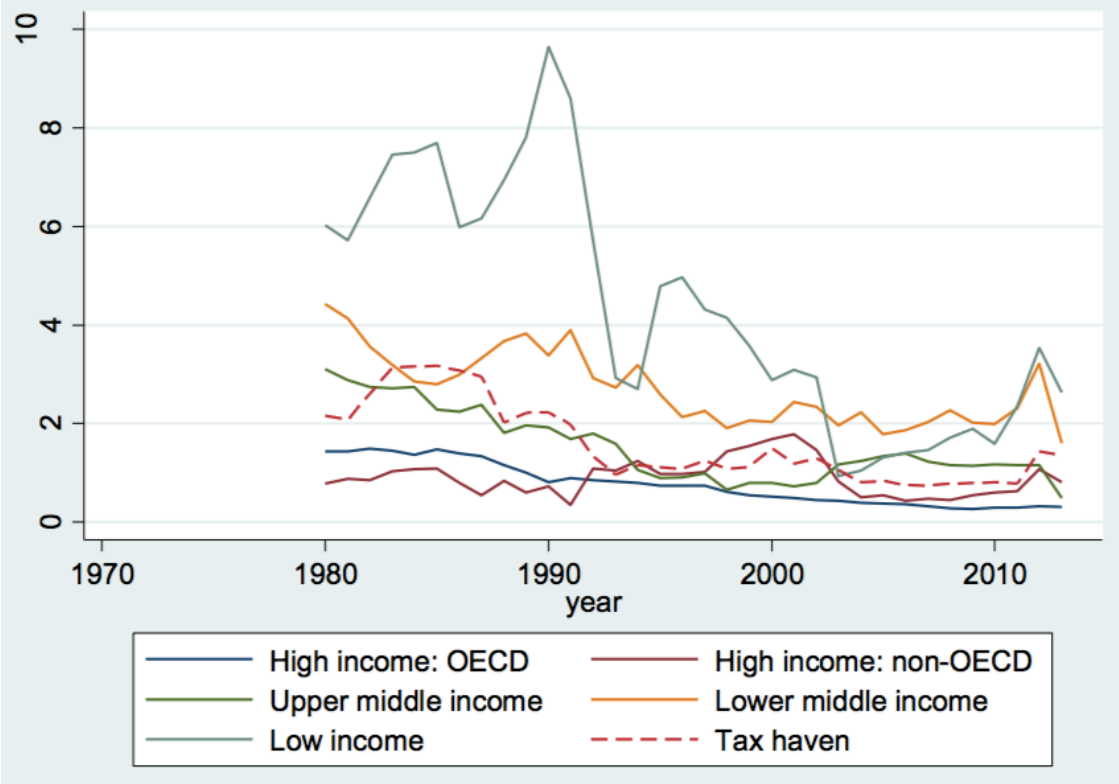
Figure 10: revenue loss estimate over time, US$ billion, by income group, (GRD)



Source: Cobham A., Jansky P., 2017

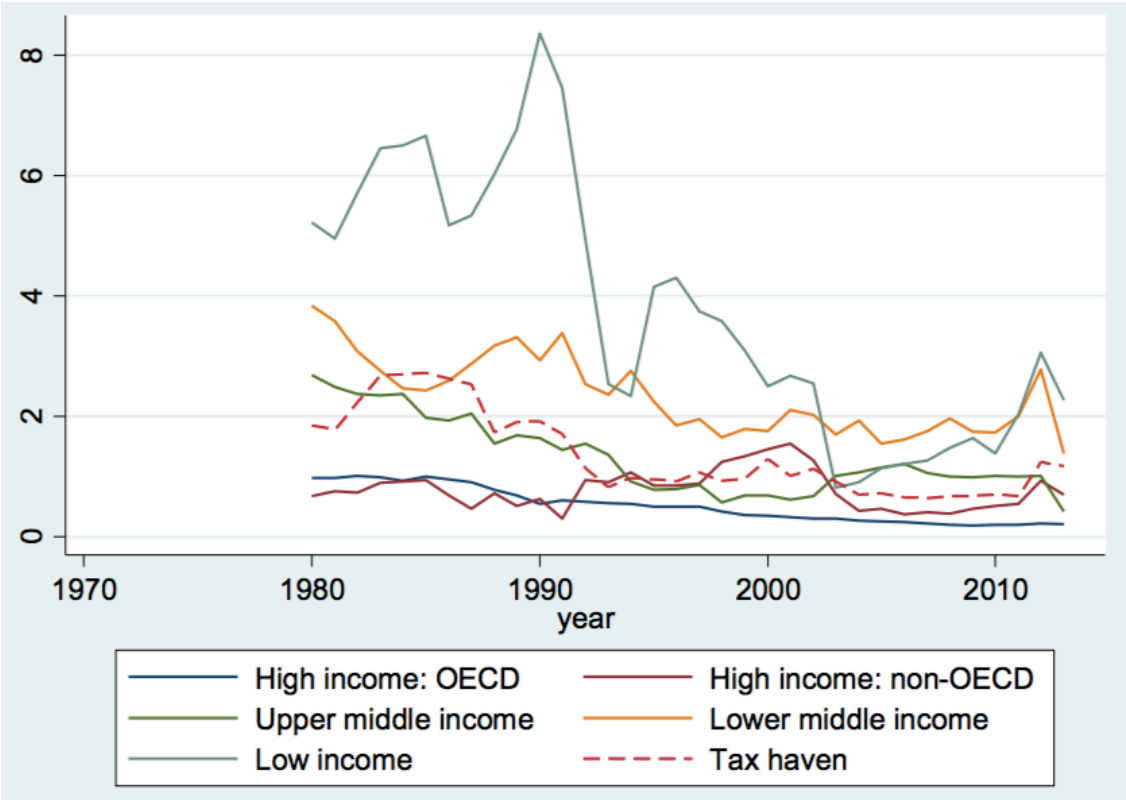
Figures 11 and 12 exhibit the analysis of the same data in relation to GDP, and show that the low income and lower middle income countries are those the bear the heaviest losses.

Figure 11: revenue loss estimate over time, % of GDP, by income group, (IMF)



Source: Cobham A., Jansky P., 2017

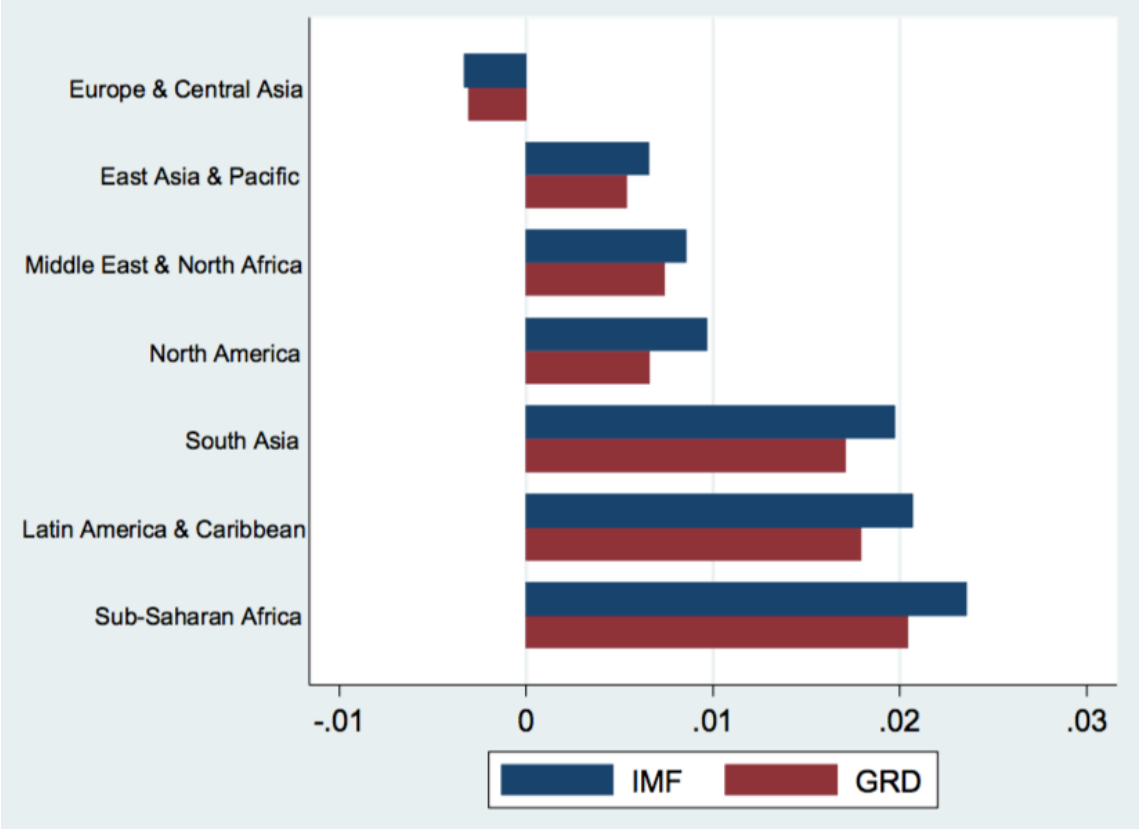
Figure 12: revenue loss estimate over time, % of GDP, by income group, (GRD)



Source: Cobham A., Jansky P., 2017

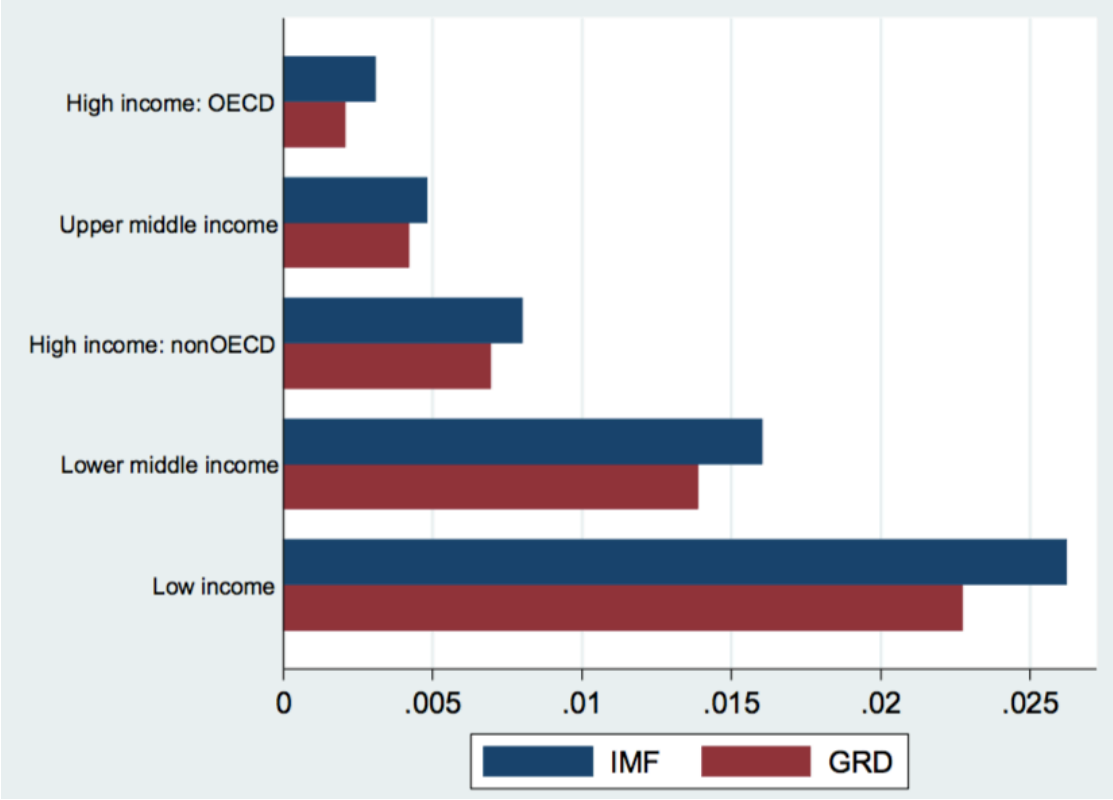
Figures 13 and 14 put losses in relation to GDP, by region and income group. South Asia, Latin American and Caribbean, and Sub-Saharan Africa suffer relatively high losses. In terms of income, lower middle income and low income countries are those that suffer the most.

Figure 13: average losses/GDP by region



Source: Cobham A., Jansky P., 2017

Figure 14: average losses/GDP by income



Source: Cobham A., Jansky P., 2017

Cobham and Jansky (2017) conclude that the estimated global tax loss is US$ 500 billion according to GRD data, and US$ 650 billion, according to IMF. These results confirm the importance of base erosion and profit shifting phenomenon, and give a clear idea about the magnitude of the problem.

As already mentioned at the beginning of the paragraph, there are two main channels for profit shifting: transfer pricing and financial shifting, which takes advantage of the deductibility feature of interests. On one hand, transfer pricing alters the price of intra-frim transactions, so that the vale of the EBIT is affected. On the other hand, financial shifting exploits the intra-firm debt structure and alters the interest paid on financial transaction among affiliates (Barrios S., D'Andria D., 2016).

The following chapter is dedicated to the explanation of theoretical and practical characteristics of the first channel, the transfer pricing.

4. Transfer pricing

This phenomenon, as explained above, is related both to double taxation and to profit shifting. On one hand, double taxation is of course detrimental for multinationals; on the other hand, profit shifting and tax avoidance represent a severe revenue loss for governments.

For these reasons, there is an increasing need for a comprehensive framework, capable of providing a unique policy to deal with these problems.

The first attempt to fight this problem dates back to 1920, when the League of Nations[4] started to work on a project aimed at eliminating double taxation. In 1925 the Report and Resolution on Double Taxation and Tax Evasion has been published. It introduced the set of problems related to valuation of transfer pricing operations (Ceroli P. et al., Il Sole 24 Ore, 2016).

In 1976, the OECD started to work on a project, specifically on transfer pricing: in 1979 the organisation published the Transfer Pricing and Multinational Enterprises report, which has set the arm's length principle as the parameter to value intra-firm transactions. According to this principle, intra-firm transactions must be valued as if they have occurred between unrelated parties, so that multinationals can neither overestimate nor underestimate prices, in order to move profits where taxation is more favourable. This criterion is set out in the already mentioned article 9 of the OECD Model Convention with respect to Taxes on Income and on Capital.

In the 1979 report, the so called traditional criteria to value intra-firm transactions are introduced:

- comparable uncontrolled price (CUP);
- resale price method;
- cost plus method.

[4] It was founded on 10 January 1920, after the Treaty of Versailles. It has been the first international organisation and its main objective was to prevent other wars and maintain peace. In 1946 it dissolved, and ONU has been founded (Ceroli P. et al., Il Sole 24 Ore, 2016).

The suggestion is that the CUP method is to be preferred, since it better guarantees adherence to the arm's length principle. The other two principles are to be used only if the CUP method is not applicable.

Over the years, the OECD continues to work on this issue and, in 1995, it publishes the Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations; in this report practitioners can find practical insights about different transfer pricing methods and required documentation. In addition to the traditional methods, the Guidelines introduce two alternative methods, the so called transactional profit methods, which are derived from the US approach:

- profit split method;
- transactional net margin method.

These methods are to be applied only when it is not possible to use the traditional ones. Furthermore, the organisation describes a non-arm's length principle, the global formulary apportionment: consolidated profit is allocated to the firms within a group according to a pre-set formula. However, this principle is considered to be neither suitable nor applicable by the OECD.

The introduction of the administrative approaches to avoiding and resolving transfer pricing disputes is of major importance. Among these tools, there are the transfer pricing compliance practices, the mutual agreement procedure, the simultaneous tax examination, the safe harbours and the Advanced Pricing Agreements (APAs). The guidelines dedicate a chapter to the documentation about transfer pricing firms are required to produce.

OECD work goes on and in 2010 an update of the Guidelines has been released. The update is mainly about the arm's length principle, transfer pricing methods and comparability analysis. Other parts are added: two chapters dedicated to intangibles and services, a chapter for the Cost Contribution Arrangements (CCA) and a part dedicated to business restructuring.

In 2013, the OECD started working on the BEPS project, and in 2015 the Final Reports have been delivered. Among the 15 actions it includes, 4 of them are dedicated to

transfer pricing:

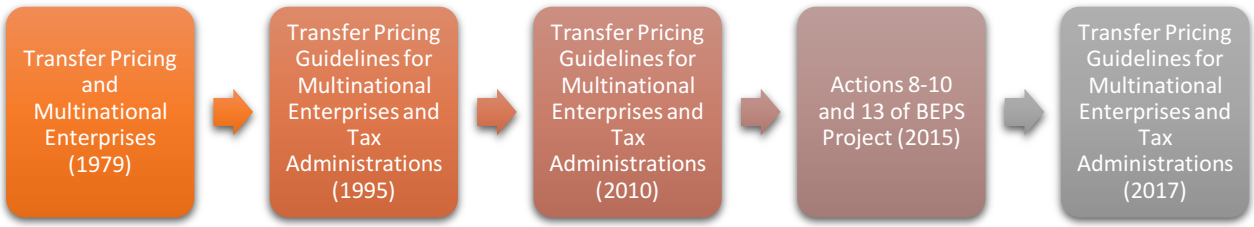
- Action 8: intangibles;
- Action 9: risk and capital;
- Action 10: high risk transaction;
- Action 13: transfer pricing documentation.

Action 8 is focused on the value creation in relation to intangibles; Action 9 is dedicated to risk allocation; Action 10 deals with the prevention of tax base erosion through high risk intra-firm transactions; finally, Action 13 is about transfer pricing documentation, and introduces the Country by Country reporting (Cbcr): in this report multinationals have to indicate transactions occurred and amount of taxes paid in each state.

In 2017, an update of the Guidelines has been published. This new edition incorporates the changes resulting from the BEPS project. It also includes the Revised Recommendation of the OECD Council on the determination of transfer pricing between associated enterprises, which is intended to strengthen the relevance of the Guidelines beyond the organisation, by inviting non-OECD countries to adhere.

The following figure summarises the historical development of OECD regulation on transfer pricing.

Figure 15: OECD transfer pricing regulation over the years



Source: author's elaboration

It appears clear as OECD regulation about transfer pricing evolved over time, in order to reflect changes in the economic environment and practical needs of both multinationals and tax authorities.

European Union also recognizes the importance of this phenomenon. In 1990, the Convention 90/436/EEC on the elimination of double taxation in connection with the adjustments of profits of associated enterprises has been published. Its origin was the Commission's 1976 proposal for a directive to eliminate double taxation.

The European Council in Lisbon in March 2000 has established a strategic goal for the European Union to "*become the most competitive and dynamic knowledge-based economy in the world*". In the communication n. 582/2001, the European Union underlines the important role the taxation of multinational plays in achieving this goal (EU, Communication 582/2001). The communication sets out the importance to "*adapt company taxation in the European Union to the new economic framework and to achieve a more efficient internal market without internal tax obstacles*".

Since company taxation is considered to be an essential element for the completion of the internal market, and because transfer pricing legislation is not harmonized in the European Union, the Joint Transfer Pricing Forum (JTPF) has been set up in 2002. It works within the OECD transfer pricing Guidelines framework. Its mandate is to fight BEPS, ensure an effective and efficient tax collection and increase compliance (ec.europa.eu, 2018). Forum's members are member countries, non-government members, such as representatives of some multinationals, and the OECD secretary (Ceroli P. et al., Il Sole 24 Ore, 2016).

In 2006 European Union has released the Code of Conduct on transfer pricing documentation for associated enterprises. It concerns the implementation of standardised transfer pricing documentation for affiliates. According to the Code, the documentation should be composed by two parts:

- Master File;
- Country Specific Documentation.

The Master File provides information about the group as a whole and its transfer pricing system. It describes the business strategy, the group's organisational, legal and operational structure and identifies the associated enterprises engaged in intra-firm transactions. The Country Specific Documentation is about country specific

transactions and includes a comparability analysis and an explanation about the selection of the transfer pricing methods applied (EU, Code of Conduct on transfer pricing documentation for associated enterprises, 2006).

In 2011, the European Union proposed an ambitious project: the Common Consolidated Corporate Tax Base (CCCTB). This initiative aims to tackle fiscal impediments and remove obstacles to the completion of the internal market (EU, Proposal for a Council Directive on a common consolidated corporate tax base, 2011). The idea is that the profit is computed on a consolidated basis, according to common tax rules for all member states; then, it is allocated to each affiliate within the group according to a pre-set formula (Ceroli P. et al., Il Sole 24 Ore, 2016). This idea is diametrically opposite to the arm's length principle; multinationals are considered as single economic units, and not as if they were separate entities in each country dealing independently with each other.

Article 78 and 79 of the proposal are both dedicated to transfer pricing. Article 78 provides a definition of associated enterprises and Article 79 is about adjustments of pricing in relations between associated enterprises. Despite the need of tax harmonization, the project has never been effective. However, in 2016, the European Commission decided to re-launch the proposal, suggesting a two-step implementation process.

Finally, in July 2016, the European Union published the Directive n. 2016/1164/EU, which mainly covers the following topics: limits to interest deductibility, exit taxation, anti-abuse rule, controlled foreign company rule and hybrid mismatches.

The Directive is effective since August 2016 and is to be adopted by member states within the end of 2018.

This last part of the paragraph shows as the European Union share the same OECD's view and perspective about transfer pricing and recognizes the need for a clearer and easier policy to tackle base erosion and profit shifting phenomenon. The following chapter is dedicated to the main rule of the transfer pricing regulation: the arm's length principle.

5. The arm's length principle

As a start, it is important to underline as the OECD asserts that the consideration of transfer pricing goes beyond the consideration of problems related to tax avoidance. This means that the need to make intra-firm transactions adhere to the arm's length principle is not a direct consequence of any specific contractual obligation between the parties or intention to minimize taxes.

The OECD specifies that tax administrations should not presume any profit manipulation strategy, because there can be a bona fide difficulty in determining a market price for intra-firm transactions, both for firms and states. Corporate secrecy and poor statistics lead to difficulties in estimating prices (Ylönen M., Teivainen T., 2018). Having said that, it is also true that transfer pricing policies are frequently used by multinationals to avoid the payment of taxes.

The arm's length principle is set out in Article 9[5] of OECD Model Tax Convention, and provides that *"[where] conditions are made or imposed between the two [associated] 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"*.

Basically, the article states that profits should be adjusted taking as reference the conditions that would have been set between independent parties in comparable transactions and circumstances (OECD transfer pricing guidelines, 2017). This means that firms within a group are treated as separate entities: the attention is centred on the comparison between the conditions of controlled transactions and conditions that would have obtained in comparable uncontrolled transactions. This comparison is what is called the comparability analysis. It appears clear as the arm's length principle is

[5] Article 9 of OECD Model Tax Convention has already been mentioned with respect to associated enterprises in the paragraph about intra-firm transactions.

based on the separate entity principle. It goes back to the corporate law in US and UK: firms that belong to a single enterprise are to be seen as separate entities in front of the law (Ylönen M., Teivainen T., 2018). This led to the growth of modern corporations and let firms benefit from mismatches in different jurisdictions. Notwithstanding the fact the adherence to the arm's length principle requires judgement and transfer pricing is not an exact science, the principle is considered to be the best standard to evaluate transactions between associated enterprises, since it gives reasonable estimates and the closest approximation of the full play of market forces (Neighbour J., OECD Observer, 2002).

Basically, it aims at artificially creating a competitive market where it does not exist, namely within big multinationals, where trade deviates from market assumptions. This means that arm's length principle is supposed to help firms in simulating markets in their intra-firm transactions (Ylönen M., Teivainen T., 2018).

The main reason why this is considered to be desirable is that the principle provides parity of tax treatment both for firms that belong to a group and for independent firms. In doing so, it removes tax considerations from decisions of an economic nature, therefore promoting growth of international trade (OECD Transfer Pricing Guidelines, 2017).

However, the principle has encountered many obstacles in its application over the years.

Its history goes back to the already mentioned Model Tax Convention by the League of Nations in the twentieth; since then, corporations have tried to implement the arm's length regime. But, because of the lack of detailed rules and the relatively general terms, its implementation was limited in many countries (Ylönen M., Teivainen T., 2018). The difficulty of its application relied mainly upon the focus on comparables: according to Rädler (1972), the reference to the arm's length principle is less and less helpful since comparable transactions are basically carried out only within each specific multinational enterprise. For this reason, the three traditional methods for determining the value of intra-firm transactions have been introduced: the comparable

uncontrolled price method (CUP), the resale price method and the cost plus method. The second two methods can be interpreted as loosening the criteria of the principle, but this does not really solve the inherent problem, which can be identified in the fact that the relationship among associated enterprises is different from that of unrelated firms (Ylönen M., Teivainen T., 2018). This statement suggests the idea that multinationals act as a single economic unit, and not as if they were unrelated from their affiliates.

In 1995, the OECD, in line with the US regulation, published the updated version of the Transfer Pricing Guidelines. This was an important step forward, since the introduction of the two transactional methods (the profit split method and the transactional net margin method) represented a departure from the idealised market-based prices. This meant that when comparables could not be found, other methods were allowed, in compliance with the arm's length principle.

According to Ylönen and Teivainen (2018) the principle plays two roles. On one hand, it is a tool to create markets where they do not exist, that is within corporations. The shift from looking for comparables to other pricing methods demonstrates as the principle struggles with fulfilling this role. On the other hand, it plays a more ideological role: the authors compare it with the invisible hand[6], a concept mentioned by Adam Smith in The Theory of Moral Sentiment (1759) and in The Wealth of Nations (1776). The difficultiey of the principle in establishing markets where they do not exist can be thought as an important element in the success of the principle in proving the fact that intra-firm transactions are not market based. So it plays an ideological role in assuming the existence of markets where their presence is hard to verify, but important to simulate in theory.

The success of the arm's length principle is not perfect, and, for the above reasons, an alternative method has been suggested, that is the global formulary apportionment. The OECD devotes a full paragraph of the Guidelines to this alternative method, but states

[6] The concept describes as individuals' pursuit of their own interests will maximize the interests of society. The market transforms individuals' pursuit of gain into the general utility of society (Bishop J. D., 1995).

that it is not acceptable either in theory or in practice.

6. Global formulary apportionment

This approach would allocate the global profit of a multinational group among the associated enterprises on the basis of a pre-set formula (OECD Transfer Pricing Guidelines, 2017). Three main steps are involved:

- determination of the unit to be taxed;
- determination of the global profit;
- establishment of the formula to be used for the allocation of the global profit of the unit.

International tax rules under this approach would treat multinational enterprises as single firms, and not as if they were a collection of separate firms in each country.
Ideally, a unitary taxation system would have three components (Pogge T., Mehta K., Global Tax Fairness, 2016, p. 227):

- a combined reporting;
- a profit apportionment;
- a resolution procedure.

6.1 Combined reporting

Any company with activities in more than one country should submit a Combined and Country by Country Report (CaCbCR) to each tax authority. The report should contain:

- consolidated worldwide accounts;
- details of all the entities within the group and their relationships and transactions;
- information on physical assets, employees, sales and taxes paid in each country.

This measure would be of major importance for tax authorities of each country, because they would have access to all information about multinationals' activities, both on a global and local basis (Pogge T., Mehta K., Global Tax Fairness, 2016, p. 227). Even

though the OECD explicitly rejects the global formulary apportionment approach, Action 13 of BEPS Final Reports introduces the Country by Country Reporting, where multinationals have to indicate transactions occurred and taxes paid in each country. However, the OECD explicitly prohibits the use of this report for formulary apportionment.

6.2 Profit apportionment

The CaCbCR should be used by states to properly apportion the profit. The advocates of the global formulary apportionment approach point out as the profit split method, which is one of the transactional method introduced in the 1995 Guidelines by the OECD, already goes in this direction. The method allows to allocate aggregated profit according to appropriate allocation keys. It has been increasingly implemented due to the growing relevance of intangibles, because of the difficulties in finding appropriate comparables. Because of the intrinsic nature of this type of asset, it is difficult to value the different contributions of different part of the firm to the whole group. For instance, profits of multinationals are often due to superior knowledge and know-how, which are a result of synergy and it is usually hard to verify the contribution of each affiliate to the group's profit (Pogge T., Mehta K., Global Tax Fairness, 2016, p. 228).

However, the OECD points out that the global formulary apportionment method is not to be confused with the profit split method. While the former would use a pre-set formula that is the same for all taxpayers, the latter compare, on a case-by-case basis, the profits of the associated enterprises with the profit that comparable independent firms would have earned in similar circumstances. There are also other circumstances, such as Advanced Pricing Agreement or multilateral agreement, where a pre-set formula is adopted, but in these cases, such a formula is derived from a careful analysis of particular facts and circumstances of a specific taxpayers, and it is not globally pre-determined. (OECD Transfer Pricing Guidelines, 2017).

Even though the OECD approves the use of a profit split method, it also restricts its

scope of use by limiting its application to the residual profit, which is the profit that remains after comparables have been used.

The experience suggests that the most appropriate formula to be used would be a three-factor formula, using:

- physical assets;
- employees;
- sales.

The CCCTB by the European Union recommends the inclusion of physical assets only, and not intangibles, because, as discussed above, they are difficult to value and allocate. Furthermore, compared to physical assets, they can be easily relocated. With regard to employees the CCCTB suggests the use of a 50:50 weighting of payroll and headcount, since the use of payroll only would not be appropriate in the case of big wage differences.

Sales are to be quantified with respect to the customers' location; the use of their billing address seems appropriate, even though they could intentionally base their accounts in tax havens, even if for no apparent reason.

The main underlying concept of this approach is to allocate profit according to measurable physical presence of a multinational in each state, which must not be confused with the idea of attributing profit, since it would be in contrast with the assumption that the profit of an integrated firm is the result of its overall synergies and economies of scale and scope.

Under the global formulary apportionment method, as long as the factors in the allocation formula are based on physical presence in a country, the competition between states would be more focused on attracting real production rather than the formation of paper entities (Pogge T., Mehta K., Global Tax Fairness, 2016, p. 231). Multinationals may decide to divest to independent parties some activities in a low tax country, in order to minimize taxes; however, this would imply giving up a slice of profit.

The advocates of the unitary taxation argue that harmonization of the tax base

definition would decrease the existing competition between countries to attract new investments by offering low tax rates and exemptions.

6.3 Resolution procedure

The third element consists in a procedure for resolution of conflicts between countries. These procedures are one of the action points of the OECD's BEPS project, which proposes to introduce compulsory and binding arbitration. However, due to a lack of clarity on the rules to be applied, giving to arbitrators the authority to decide on disputes may be unhelpful. Some of these procedures already exist, such as the Mutual Agreement Procedure (MAP) in many tax treaties, but, because of its secrecy, it may create public distrust and increase the power of those actors frequently involved in these processes, namely the big international tax and accounting firms (Pogge T., Mehta K., Global Tax Fairness, 2016, p. 232).

Those who are in support of the global formulary apportionment claim that the methods based on the arm' s length principle are no more suitable to the evolving global economic scenario. The emergence of digital economy opened up even greater opportunities for tax driven reorganization of activities and value chains. This leads to distortions in competition and capital allocation (Pogge T., Mehta K., Global Tax Fairness, 2016, p. 235).

6.4 OECD's rejection of global formulary apportionment approach

The main argument against this alternative method is the difficulty in achieving the substantial international coordination and consensus it requires to work properly by preventing from double taxation and ensuring single taxation (OECD Transfer Pricing Guidelines, 2017). Different fiscal jurisdiction should agree on the measurement of the global tax base, on the use of a common accounting system, on the factors to be

included in the formula and on how actually measure and weight those factors. Basically, the OECD points out that countries are far from being willing to agree to a universal formula, and that this method would present political and administrative complexities and ask for international cooperation in the field of taxation, which is very unrealistic. Of course countries would try to emphasize different factors in the formula, according to those activities that predominate in their jurisdiction, in order to maximize their own revenue.

Another argument is that some factors can be artificially shifted in low tax countries; for instance, firms could enter in unnecessary transactions or relocate mobile assets.

A third argument is that a pre-set formula would not consider and take into account the specific circumstances of each firm and management's own allocation of resources. This may lead to potentially assign profit to an entity that, if it were an independent firm, would have incurred in a loss (OECD Transfer Pricing Guidelines, 2017). On the other hand, the arm's length principle is based on the specifics of each transaction; this means that a conscientious application of the principle is likely to result in an allocation of the value-added that approximates what would have happened on the market in a comparable situation. In other words, from a theoretical point of view, the arm's length principle ensures the alignment of taxation and economic substance, and respects the geographic distribution of the contribution to value creation by each individual firm (Treidler O., 2016).

The OECD also underlines as global formulary apportionment approach may require a lot of data and presents high compliance costs. In fact, information about the whole group should be presented on the basis of currency and tax accounting rules of each jurisdiction.

For the above reasons, the OECD reiterates its rejection of the global formulary apportionment method and affirms that the arm's length principle is the only feasible approach to deal with transfer pricing matter.

7. The comparability analysis

Section D of chapter 1 and chapter 3 of the OECD Transfer Pricing Guidelines (2017) are dedicated to the comparability analysis. It is at the heart of the application of the arm's length principle. This section of chapter 1 has been revised under BEPS action 9 and 10; the comparability analysis has been extended by explicitly noting two aspects of the analysis. In fact, it can be ideally split in two main parts, namely the two terms of a comparison between controlled transactions (transactions between related parties) with uncontrolled transactions (transactions between independent parties). The first part involves the identification of commercial and financial relations between the related firms and the relevant conditions and economic circumstances of those relations. The second term of the comparison is represented by the comparable transactions between independent firms. This comparison will allow to assess whether those controlled transactions are priced in accordance with the arm's length principle.
The OECD suggests a typical process for the comparability analysis, which is to be considered just as a good practice, and not as a compulsory process. It is composed by 9 steps:

1. years to be covered;
2. analysis of the circumstances of the taxpayer;
3. identification of the controlled transactions; functional analysis to choose the most appropriate transfer pricing method, the financial indicator to be used in the case of transactional profit method and the significant comparability factors;
4. review of internal comparables;
5. determination of available sourced of information on external comparables;
6. selection of the most appropriate transfer pricing method;
7. identification of comparables: determination of characteristics regarded to be necessary for any uncontrolled transaction to be potentially comparable;
8. comparability adjustments;
9. determination of the arm's length remuneration.

The first aspect of the process to be considered is the accurate delineation of the controlled transactions, that is identifying the relevant characteristics of those transactions, also called comparability factors. These comparability factors are clustered in the 5 following categories:

- contractual terms of the transaction;
- functional analysis: functions performed by each party, risks assumed, transaction circumstances and industry practice;
- characteristics of property and services involved in the transaction;
- economic circumstances of the parties and of the market;
- business strategies of the parties.

The relevance of the comparability factors in identifying the controlled transactions depends on whether independent firms would take them into account when evaluating if entering or not in the same transaction. If differences in economically relevant characteristics between controlled and uncontrolled transactions arise, it may be necessary to make adjustments in order to achieve comparability (OECD Transfer Pricing Guidelines, 2017).

Sections D.1.1-D.1.5 of chapter 1 of the OECD Transfer Pricing Guidelines (2017) are devoted to analysing each of the 5 identified comparability factors. In the following each of them is described.

7.1 The contractual terms of the transactions

Contractual agreements are generally the starting point for delineating the transactions between associated enterprises, and establishing how risks and anticipated outcomes are to be split between them. It is generally the case that written contracts do not provide all the information needed for a comparability analysis, and this is where the other categories come at play. Often the evidence may provide useful information that can clarify some aspects of the written contract. For instance, the functions performed by the parties may provide evidence about the actual conduct of the related firms. The

Guidelines (OECD, 2017) give an example of it: a fully owned subsidiary acts as an agent for the parent's branded products. The contract between them does not mention anything about marketing or advertising activities; however, an analysis of the functions performed founds out that the subsidiary is actually spending a lot of money for a media campaign in order to develop brand awareness. Another example may be when a subsidiary pays a royalty to the parent for the use of intellectual property for use in its own business. However, an analysis of the functions performed reveals that the parent is negotiating with customers to obtain sales for the subsidiary and providing technical support to the subsidiary so that the company is able to sell to customers. These examples point out that sometimes written contracts may not be enough in reflecting the whole picture of the commercial or financial relations between the parties. This shows as the analysis should not be limited to the written contracts, and if the analysis reveals that there is inconsistency between what is written in the contract and the actual transactions, the latter prevail and should be considered for the transfer pricing analysis.

This does not mean that contracts are not important; they still represent an essential start for the whole analysis.

Sometimes transactions within multinationals are not formalized in any written contracts: it may be the case of technical assistance, creation of synergies or provision of know-how. This type of relations may not be reflected in any price, and may not even appear in any entries of the accounting system. For these reasons, all aspects of these transactions are to be deducted from the conduct of the parties, the functions performed, the assets used and the risks assumed.

7.2 The functional analysis

The functional analysis aims at identifying the economically significant activities and responsibilities of the parties involved in the transaction, focusing also on assets used and risks assumed. What is really relevant is the understanding of how the group

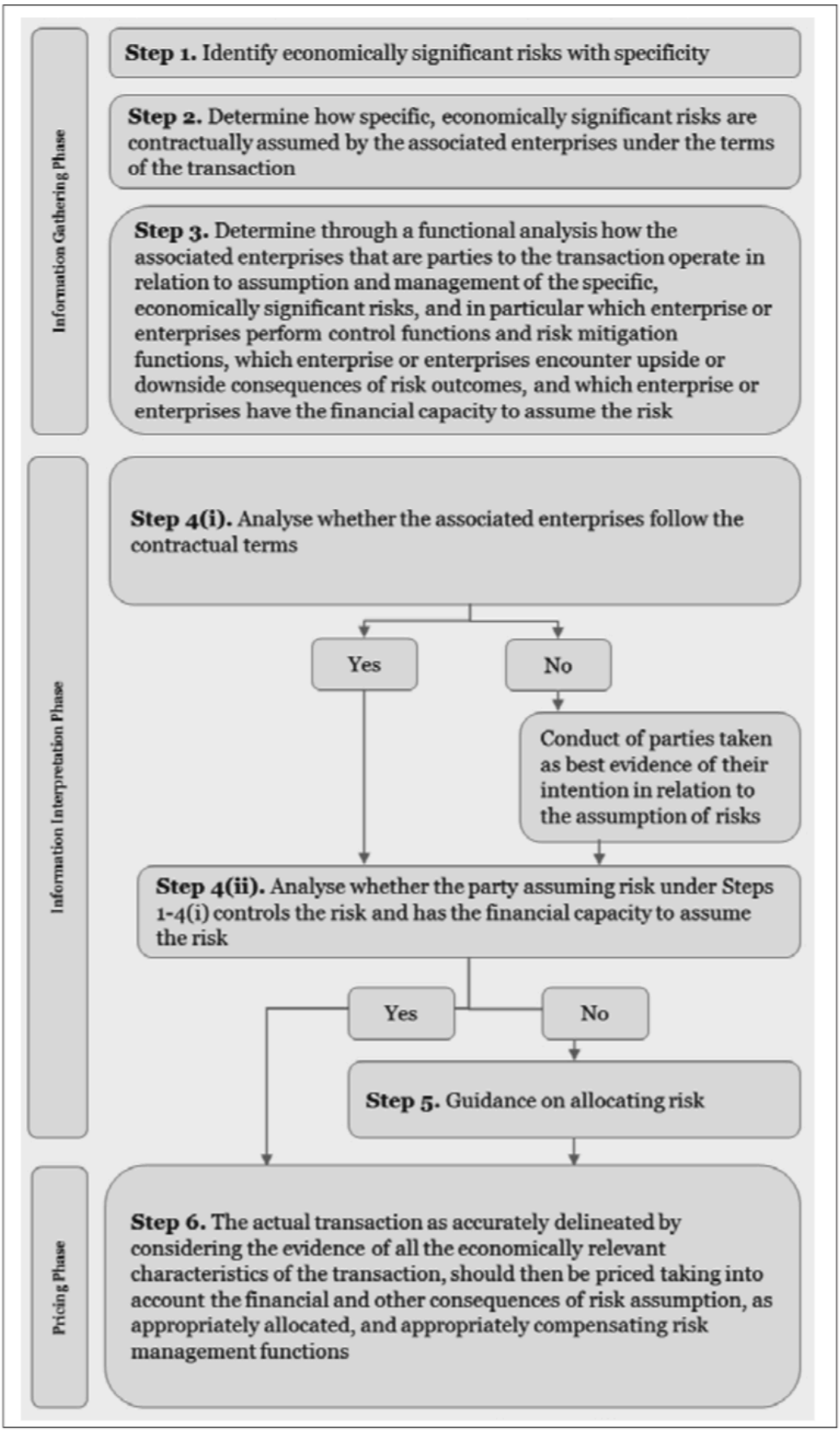
generates value and the interdependencies of the activities performed by each of the group members and their contribution to the value creation.

The functional analysis has known an important revision thanks to the BEPS Final Reports, especially with regard the analysis of the risk in controlled transactions. Assumption of risk may be defined as "*taking on the upside and downside consequences of the risk with the result that the party assuming the risk will bear the financial and other consequences if the risk materializes*" (OECD Transfer Pricing Guidelines, 2017). It is essential to determine the risks assumed, because an increase in the risk assumed generally corresponds to an increase in the expected return (EY, Global Tax Alert, 2015). A six-step analytical framework for analysing risk has been introduced. The steps are the following:

1. identification of economically significant risks with specificity;
2. determination of contractual assumption of the specific risk;
3. functional analysis in relation to risk;
4. interpreting steps 1-3;
5. allocation of risk;
6. pricing the transaction, taking into account the consequences of risk allocation.

The introduction of these steps reflects the importance of risk in identifying the controlled transactions; this does not mean that risk is more important than assets used or functions performed in a transaction, but that it poses more practical difficulties to deal with. Basically, the OECD acknowledges the fact that risk and return walks hand in hand and recognises that risk plays a key role in the process of appropriately delineating the transactions (Verlinden I., Ledure D., Dessy M., 2016). The six-step approach assists taxpayers and tax authorities in the risk allocation process providing guidance on identification and delineation of risk under the arm's length principle. In the following a flowchart of the 6 steps and a detailed analysis of each of them are proposed.

Figure 16: the OECD six-step approach for allocating risk



Source: Verlinden I., Ledure D., Dessy M., 2016

7.2.1 Step 1: identification of economically significant risks with specificity

This step involves the identification of risks that are to be considered in a transfer pricing analysis. The OECD (2017) defines risk as "*the effect of uncertainty on the objectives of business*". It is useful to bear in mind that the notion of risk is inherent in commercial activity, and every profit-seeking firm takes on risk expecting a positive return to compensate the risk assumed.

The OECD categories risk according to its source of uncertainty, and differentiates between externally and internally driven risks; the Guidelines (OECD, 2017) provide a non-exhaustive list of sources of risk, which is detailed in the following:

- strategic risks or marketplace risks: these are externally driven risks and may be caused by the economic environment, regulatory events and social or environmental changes. The potential downside and upside are considerable;
- infrastructure or operational risk: this type of risks can be either external (political and social situations, laws and regulation) or internal (capabilities of assets, employees and execution of processes). They are mainly related to the execution of company's business and activities;
- financial risks: the uncertainty related to these risks can be both externally (economic crisis) or internally driven (controls and investment decisions). They are related to the ability of the company to manage liquidity and cash flow;
- transactional risks: these risks are mainly internal and are represented by the commercial terms for the supply of goods and services;
- hazard risks: the source of these risks is external; they include accidents and natural disasters that may provoke big losses and damages. The most effective way to mitigate this type of risks is through insurance.

What really matters for the whole analysis is the economic significance of the risks involved and it influences the pricing of the controlled transactions. This means that when the risk is solely theoretical and not economically significant, it is not relevant

for the analysis. To summarise, a risk, in order to be relevant, must be:

- economically significant: risk materialization should have an economic impact on the return earned by the company;
- with specificity: any risk that is only vaguely defined or undifferentiated is not relevant for the analysis, therefore useless from a transfer pricing perspective.

However, the OECD seems not to provide any guidance about what should be regarded as economically significant, making this first step already difficult to complete for the taxpayers (Verlinden I., Ledure D., Dessy M., 2016).

7.2.2 Step 2: determination of contractual assumption of the specific risk

The contractual assumption of risk is basically an "*ex ante agreement to bear some or all of the potential costs associated with the ex post materialisation of downside outcomes of risk in return for some or all of the potential benefit associated with the ex post materialization of positive outcomes*" (OECD Transfer Pricing Guidelines, 2017). In conducting a transfer pricing analysis, the contractual agreements are the starting point; however, the parties' conduct prevails on any misalignment with the contracts.

7.2.3 Step 3: functional analysis in relation to risk

This step puts together the previous two and should provide information about how the associated enterprises assume and manage the economically relevant specific risks.
Under this analysis it is of paramount importance understand which enterprises perform control functions, which mitigate the risks and which bear the upside or downside consequences of risk outcomes.

- Control over risk functions: this function is specifically described at the beginning of the paragraph about the functional analysis of the Guidelines (OECD, 2017) where is stated that it involves the two elements of risk management, which are "*the capability to make decisions to take on, lay off, or decline a risk-bearing*

opportunity, together with the actual performance of that decision-making function and the capability to make decisions on whether and how to respond to the risks associated with the opportunity, together with the actual performance of that decision-making function".

Basically, these functions are performed by those individuals that decide whether or not to catch an opportunity and decide on the risks to assume.

The recent revision of the Guidelines moved from a more function-centric analysis to a more risk-centric functional analysis. This means that the traditional functional analysis was mainly focused on functions within a company that could cover several risk-bearing opportunities. Instead now, the new approach seems more complex since the focus has shifted to an analysis of each opportunity and the underlying risks. Each risk-bearing opportunity should be broken down into a ray of risks, which in turn are decomposed in a ray of functions (Verlinden I., Ledure D., Dessy M., 2016). The OECD describes two possible situations to exemplify the concept of control over risk: the "fund investor example" and the "tangible asset investor example"[7]. In the first scenario control-over-risk test is met, in the second is not. However, in both cases the investor delegates some functions to another party, so it seems difficult to appreciate big differences between the two examples.

- Risk mitigation functions: the OECD defines these functions as "*the capability to mitigate risk, that is the capability to take measures that affect risk outcomes, together with the actual performance of such risk mitigation*". Also in this case, these functions are usually performed by different actors within an organisation.
- Bearing the upside or downside consequences of risk outcomes: this means that the analysis asks for the identification of those enterprises that assume the economic consequences of the risk and that have the financial capacity to assume that risk. The financial capacity to assume the risk may be defined as having

[7] See paragraphs 1.70 and 1.85 of the OECD Transfer Pricing Guidelines 2017 for a more detailed description of the examples.

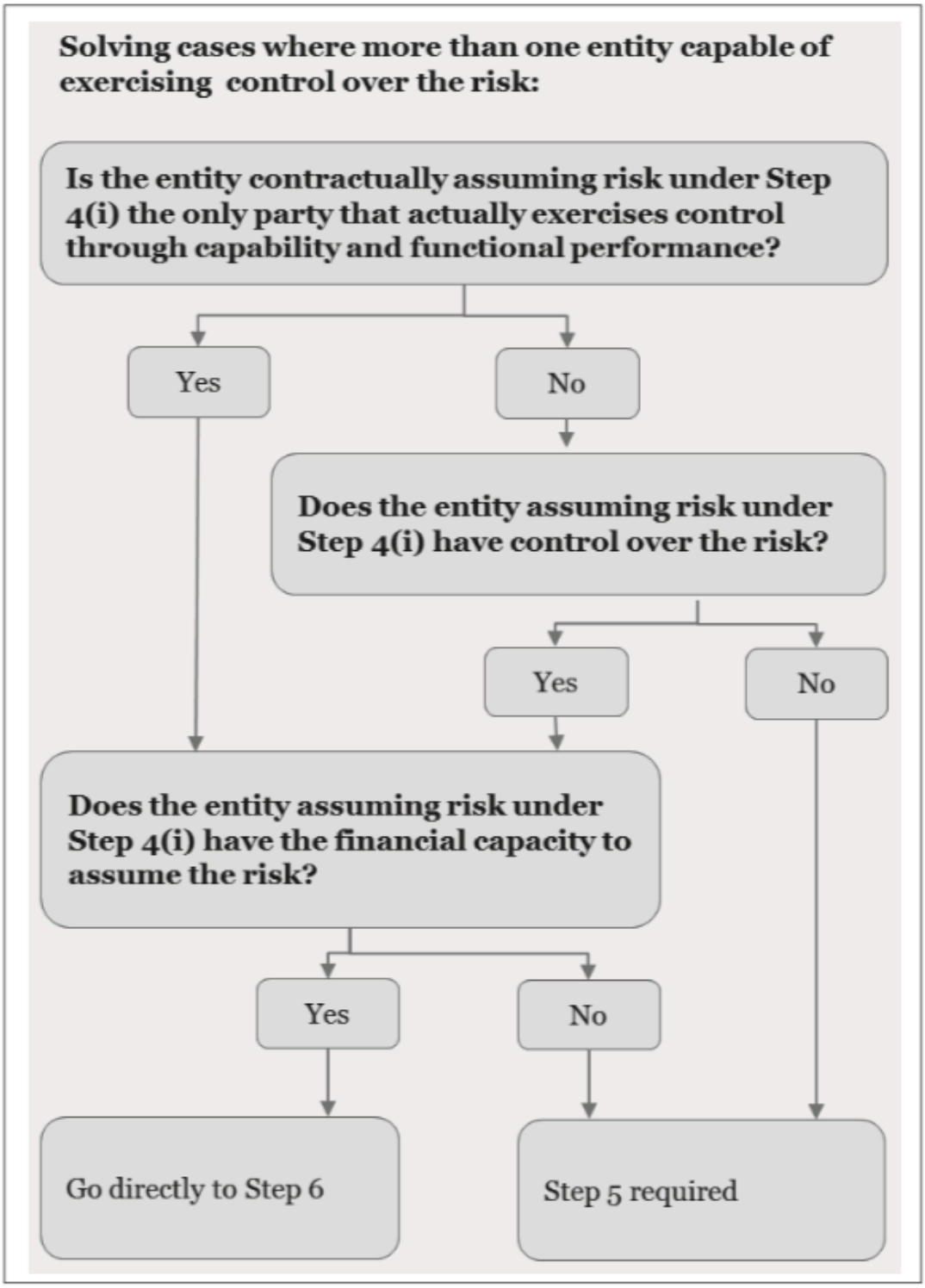
"*access to funding to take on the risk or to lay off the risk, to pay for the risk mitigation functions and to bear the consequences of the risk if the risk materialises*" (OECD Transfer Pricing Guidelines, 2017).

Unfortunately, companies may assume risks that they are not able to financially sustain in the case that risk materialise: see the bankruptcies of large banks because of the risk linked to mortgage backed securities contracts.

7.2.4 Step 4: interpreting steps 1-3

The first three steps were aimed at gathering information about the contractual agreements, the control over risks and the financial capacity needed to assume those risks. The fourth step may be divided into two sub-steps; it in fact requires to (i) assess whether or not the contractual agreements are consistent with the parties' conduct (if not, the parties' conduct prevails on the contracts) and then, to (ii) determine if the enterprise that assumes the risk does actually exercise control over it and has the necessary financial capacity to assume it. If this is the case, no further analysis is required and the process can directly jump to the sixth and last step; otherwise, a second last step is required. There are situations where more than one entity may be able to exercise control over a risk; in such a case, if the party that contractually assumes the risk is also the only one that actually exercise control over the risk, then it is the party contractually assuming the risk that controls the risk (OECD Transfer Pricing Guidelines, 2017). The following graph tries to picture such situations.

Figure 17: guidance on a situation where more than on entity may be capable of exercising control over a risk



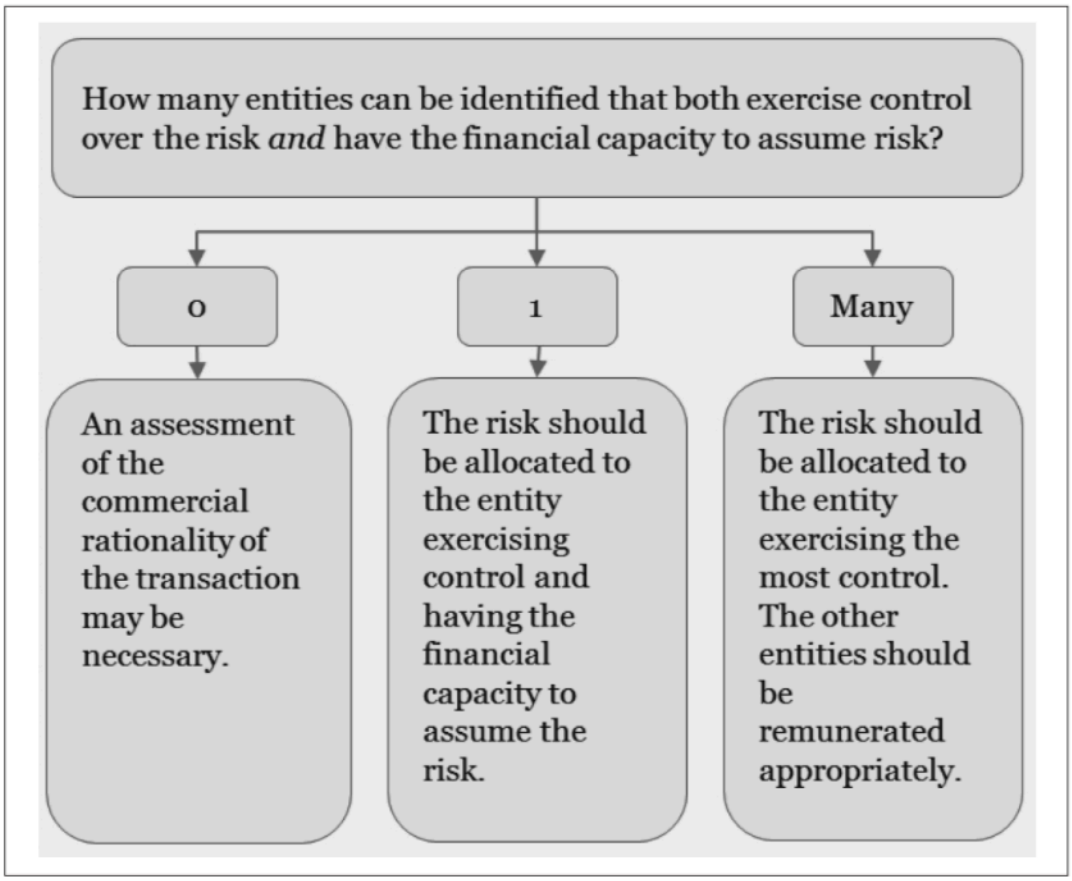
Source: Verlinden I., Ledure D., Dessy M., 2016

7.2.5 Step 5: allocation of risk

If the party that assumes the risk according to steps 1 – 4(i) does not actually exercise control over that risk or does not have the financial capacity needed to assume it, then "*the risk should be allocated to the enterprise exercising control having the financial capacity to assume the risk*" (OECD Transfer Pricing Guidelines, 2017).

In the event that there is more than one enterprise that is simultaneously exercising control and having the financial capacity to assume the risk, the Guidelines (OECD, 2017) suggest to allocate the risk to the enterprise that exercise the most control. It is also pointed out that the other parties that perform control activities should be remunerated.

Figure 18: three possible scenarios in the identification of the enterprise that both exercises control and have the financial capacity



Source: Verlinden I., Ledure D., Dessy M., 2016

When it is not possible to identify enterprises exercising control and having the financial capacity to assume the risk at the same time, tax administrations generally perform further analysis and, if necessary, may determine which adjustments are needed to make the transaction respects the arm's length principle, since this type of situation is not likely to occur between unrelated parties.

7.2.6 Step 6: pricing the transaction, taking into account the consequences of risk allocation

Step 6 is the last step of the six-step framework provided by the OECD for the analysis of risk. Once the transactions have been accurately delineated, then they should be priced according to one of the methods and the tools provided in the Guidelines taking into account which are the consequences of risk assumption and risk mitigation.

This step concludes the process of the functional analysis, which is the second comparability factor of the comparability analysis. What follows is the third factor: the characteristics of property and services.

7.3 The characteristics of property and services

The specific characteristics of property and services affect their value. Depending on whether they are tangible or intangible different characteristics may be important to consider: in the former case what generally matters are the physical features, the quality and reliability, and the availability of volume and supply; in the latter case, the form of transaction, the type of property, the duration and degree o protection and the benefits from using it.

Depending on the transfer pricing method applied, these characteristics may play an important or not so important role. Indeed, when the comparable uncontrolled method (CUP) is used, they are given more weight, because material differences may heavily

influence the price. When the other two traditional methods are applied, the resale price method and the cost plus method, differences in the characteristics play a less crucial role, since there are less chances that they may affect the gross profit margin or the mark-up on costs. Finally, if one of the transactional methods is used, the characteristics of property and services are even less important since the focus, in these cases, shifts from product similarities to functional similarities (OECD Transfer Pricing Guidelines, 2017).

7.4 Economic circumstances

As long as arm's length prices may vary a lot depending on in which market the same transaction occurs, it is important to consider economic circumstances when determining market comparability. Those circumstances that may be relevant are: the geographic location, the market size, the competition in the market, the presence of substitute goods and services, the level of supply and demand, the purchasing power of consumers, the government regulation and the production costs (considering also the cost of land, labour, capital and transport) (OECD Transfer Pricing Guidelines, 2017). When a multinational enterprise carries out similar transactions in different countries, it may be reasonable to perform a multiple-country comparability analysis. Instead, when different transactions are carried out in the same country, a multiple-country analysis is not needed, and may even reduce reliability.

7.5 Business strategies

Business strategies may have a strong influence over prices of transactions. For instance, when a company is planning to enter a new market or to increase its market share, it is probable it will charge lower prices than other competitors in the same market; at the same time, it will also incur in higher costs because of increased marketing efforts, and, therefore, achieve a lower profit. Other aspects to be taken into

account when delineating the transactions are innovation, new product development, degree of diversification, risk aversion and assessment of political changes (OECD Transfer Pricing Guidelines, 2017). When evaluating business strategies, timing plays a crucial role. Tax administrations have to assess whether a company is involved in any particular business strategy that may reduce current profit, but then lead to an expected increase in profit in the future (market penetration or market share expansion). In such a case, if then the expected increase in profit does not materialise, the transfer pricing outcome may require some adjustments. However, this does not mean that whenever the increased profit does not materialise, the business strategy is to be ignored for transfer pricing issues, because it is recognised that business strategy, such as a market expansion, may simply fail.

Business strategies are the fifth comparability factor of the comparability analysis. Once all the factors are considered, the analysis will have accurately delineated the actual transaction between related parties. The analysis then goes on with the search for comparable uncontrolled transactions, which represent the second term of the comparison, as it has been introduced at the beginning of the chapter. The search for comparables will define which transfer pricing method to adopt; according to the availability of information about comparable transactions, the best method will be selected.

The above paragraphs covered that part of the process aimed at identifying the controlled transactions and performing the functional analysis, which will be helpful in selecting the appropriate transfer pricing method. The next chapter will describe the five available methods.

8. Transfer pricing methods

Different transfer pricing methods may be used to determine whether or not infra-firm prices and profits respect the arm's length principle. According to chapter 2 of the

OECD Transfer Pricing Guidelines (2017), the selection of the appropriate transfer pricing method depends on "*the respective strengths and weaknesses of the recognised methods, the appropriateness of the method considered in view of the controlled transactions determined through a functional analysis, the availability of reliable information and the degree of comparability between controlled and uncontrolled transactions*".

The OECD differentiates between the traditional methods and the transactional profit methods. The former include the comparable uncontrolled price method (CUP), the resale price method and the cost plus method, while the latter are the transactional net margin method and the transactional profit split method.

The OECD does not state a hierarchy between the different methods, but says that where it is possible to use both a traditional method and a transactional one equally reliably, the first one is to be preferred. This is because traditional methods are more direct; in fact, any difference between the price of a controlled transaction and a comparable uncontrolled transaction can be directly linked to the commercial relations between the parties. More specifically, when the CUP method and any other transfer pricing method can be applied in an equally reliable way, the CUP method is to be preferred. Again, because it is the most direct.

There are cases where traditional methods are not so easy to be applied because of lack of information about comparable third parties. In these cases, a transactional method may be more appropriate; however, difficulty in funding information concerning uncontrolled transactions, does not represent itself a reason to choose the application of a transactional method. Sometimes the selection of the more appropriate method is not straightforward and, at the beginning of the process, more than one method may be taken into consideration.

8.1 Traditional transfer pricing methods

8.1.1 Comparable uncontrolled price method (CUP)

When the CUP method can be applied reliably, it is the most direct way to apply the arm's length principle. Basically, it compares the price charged for a controlled transaction to the price charged for a comparable uncontrolled transaction. If differences arise, tax administrations may adjust the price of the controlled transaction, and substitute it for the price of the uncontrolled transaction.

According to the comparability analysis set out in the previous chapter, it is possible to compare a controlled transaction to an uncontrolled transaction when either:

- "*none of the differences (if any) between the transactions being compared or between the enterprises undertaking those transactions could materially affect the price in the open market*"; or
- "*reasonably accurate adjustments can be made to eliminate the material effects of such differences*" (OECD Transfer Pricing Guidelines, 2017).

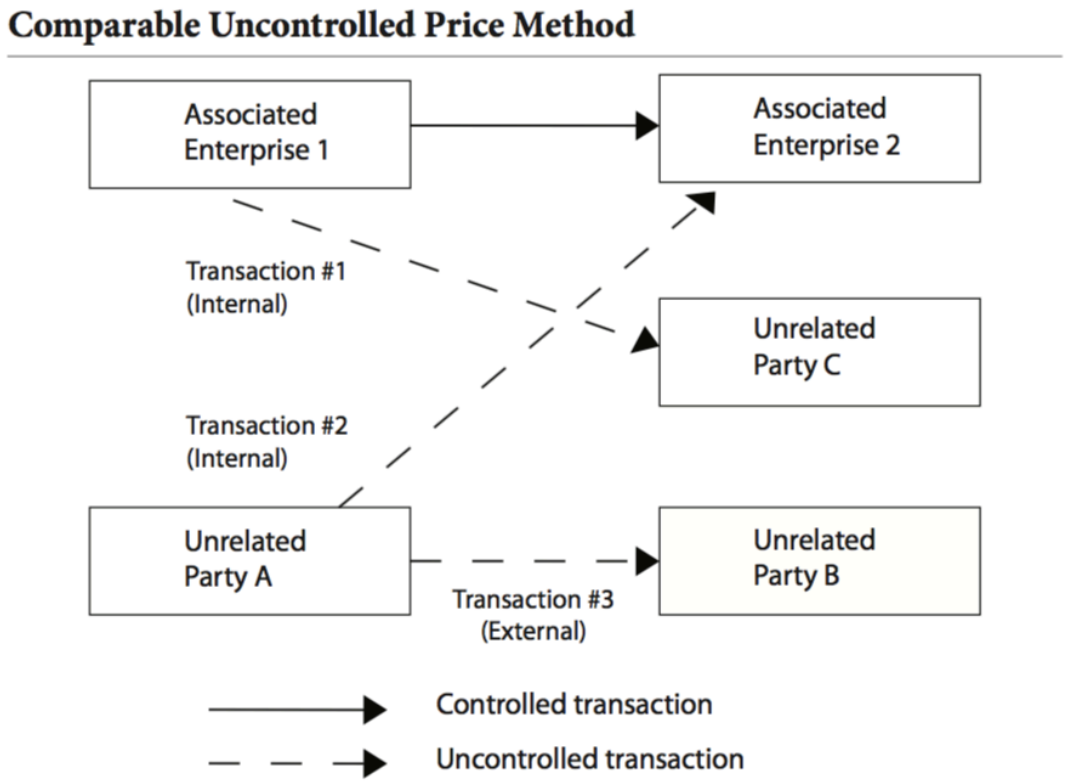
In other words, there are cases where adjustments are required in order to achieve comparability. When it is not possible to make these adjustments and so the comparability is not achieved, the CUP method cannot be used, and another less direct method will be selected. The Guidelines (OECD, 2017) provide an example where some adjustments are required: when all the circumstances surrounding a controlled and an uncontrolled transaction are the same except for the terms of transportation and insurance, it is not difficult to make the required adjustments because these differences generally have a definite effect on the price. Other cases where reasonably accurate adjustments may be possible are when differences arise in the type and quality of the products, volume, sales and discounts, characteristics of the products, contractual terms, risks incurred and geographical factors (Practical Manual on Transfer Pricing for Developing Countries, United Nations, 2017).

The CUP method may be applied on either internal or external comparable transactions. Internal comparable transactions are those transactions that occur between the tested party[8] and un unrelated enterprise; while external comparable transactions are those

[8] According to paragraph 3.18 of the OECD Transfer Pricing Guidelines 2017, the tested party is "*the one to which a transfer pricing method can be applied in the most reliable manner and for which the most reliable comparables can be found*".

transactions that occur between independent enterprises (Practical Manual on Transfer Pricing for Developing Countries, United Nations, 2017). The figure below explains the distinction.

Figure 19: internal and external comparable transactions



Source: Practical Manual on Transfer Pricing for Developing Countries, United Nations, 2017

The Guidelines (OECD, 2017) point out as the CUP method is particularly suitable for transactions of commodities. The arm's length price for commodity transactions can be determined either by looking at comparable transactions or at the quoted price, which can be defined as the price that "*reflects the agreement between independent buyers and sellers in the market on the price for a specific type and amount of commodity, traded under specific conditions at a certain point in time*" (OECD Transfer Pricing Guidelines, 2017).

The strengths of the CUP methods are that it:

- is the most direct transfer pricing method, as it has already been said;
- is especially suitable for commodity transactions;

- is a two-sided analysis because the price used is the price set between two unrelated parties;
- avoids the problem of determining which of the parties involved in the controlled transaction is the tested party; this is meaningless for the CUP method, but it is relevant when other methods are applied, such as in the case of the resale price method or the cost plus method, where the sales company and the manufacturer company respectively will be the tested party (Practical Manual on Transfer Pricing for Developing Countries, United Nations, 2017).

Whereas the main weakness of the method is the difficulty in finding appropriate comparable transactions.

8.1.2 Resale price method (RPM)

The resale price method is the second traditional transfer pricing method; with respect to the CUP method, it is a less direct method since it is based on an arm's length gross profit margin rather than on an arm's length price. The starting point of this method is the price (resale price) at which a product, that has been exchanged in a controlled transaction, is then resold to an independent party (OECD Transfer Pricing Guidelines, 2017). To test whether the controlled transaction occurred at arm's length, the resale price is reduced by a gross margin (resale price margin), and then the remainder is compared with the price charged for the controlled transaction. The gross margin should be that amount that covers the reseller's costs and guarantees an appropriate profit, taking into account the assets used and risks assumed by the reseller.

The transfer price of the controlled transaction can be described by the following formula:

$$TP = RSP * (1 - GPM)$$

where

TP = transfer price of a product sold between two related parties

RSP = resale price, which is the price at which the product is resold to a

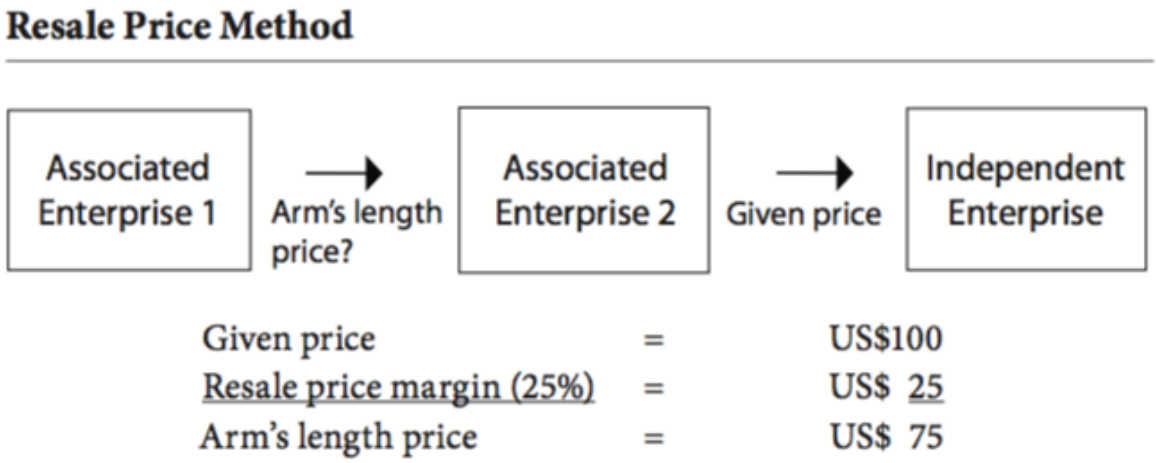
third party

GPM = gross profit margin (resale price margin), which can be defined as the ratio of gross profit to net sales; gross profit is net sales (sales to unrelated parties) – cost of goods sold (cost of the goods sold and additional non-operating costs) (Practical Manual on Transfer Pricing for Developing Countries, United Nations, 2017).

It follows that the cost of good sold includes the transfer price paid to the related company, when the product has been purchased.

This method is generally applied to marketing operations, where the tested party is the sales company (the reseller) and the other related party is the manufacturer of the product.

Figure 20: resale price method



Source: Practical Manual on Transfer Pricing for Developing Countries, United Nations, 2017

The resale price margin can be determined either by looking at comparable uncontrolled transactions where the same reseller sells products to an unrelated company (internal comparable), or by looking at comparable uncontrolled transactions between independent companies (external comparable).

Similar to what has been said with regard to the CUP method, an uncontrolled transaction can be considered comparable when either:

- "*none of the differences (if any) between the transactions being compared or between the enterprises undertaking those transactions could materially affect the resale price margin in the open market*"; or
- "*reasonably accurate adjustments can be made to eliminate the material effects of such differences*" (OECD Transfer Pricing Guidelines, 2017).

Compared to the CUP method, less adjustments to account for product differences are generally needed. Differences in product characteristics usually have little impact on profit margins. This is because gross profit margin represents compensation for functions performed (after the cost of goods sold), and so product differences have less influence. In other words, while price for different products can be similar only if these products are substitute for one another, compensation for similar functions can be similar even across different activities. For the above reasons, product differences may not compromise the comparability under the RPM, as much as they do in the CUP method. However, some adjustments may still be needed to preserve comparability. Other comparability factors may play a more important role under the RPM, such as the functions performed and economic circumstances.

When external comparables are used, the reliability of the method may depend on differences in the accounting system and business practices; for instance, some costs may be either classified as operating expenses or costs of goods sold, or other differences in inventory valuation techniques may arise. In these cases, the profitability of the company, and so the gross margin, may be affected; conversely, the prices may remain unchanged in such situations (Practical Manual on Transfer Pricing for Developing Countries, United Nations, 2017).

It is possible to distinguish between two possible ways to determine the gross profit margin:

- transactional comparison: the gross profit margin is determined by looking at comparable uncontrolled transactions where the reseller company sells a product that has been purchased from an independent manufacturer. Even though the products may differ with respect some characteristics (such as different types of

bicycles), the RPM can still be applied, as long as accounting consistency is preserved;

- functional comparison: here the focus is not on comparable transactions, but on comparable distribution companies; indeed, the gross profit margin is determined by looking at comparable uncontrolled transactions between unrelated parties that perform similar functions and incur in similar risks with respect the tested party (Practical Manual on Transfer Pricing for Developing Countries, United Nations, 2017).

The RPM is typically applied on a functional, rather than transactional basis. Consistently with what has already been said above, functional comparability (functions, assets and risks) is generally more important than product comparability under this method. For RPM, especially when applied on a functional basis, product differences are less likely to have a material effect of profit margins, therefore, RPM can be applied based on the gross margin a distributor company gets selling a full range of broadly similar products.

The resale price margin is affected by the following factors and circumstances:

- composition of cost of goods sold, accounting practices, business experience and management efficiency;
- when the reseller adds value to the product by creating and maintaining intangible property related to the product, or when it processes the products into more complicated products before selling;
- level of activities performed, assets used;
- exclusive rights to resell the products.

All these factors and circumstances are more likely to have an effect on gross margins, rather than on product prices. This is why they are more relevant under the RPM rather than under the CUP method.

Among the strengths of the RPM there is the fact that this method is demand-driven; this means that in circumstances where there is a weak relation between costs incurred and product's sale price, this method can still be applied reliably.

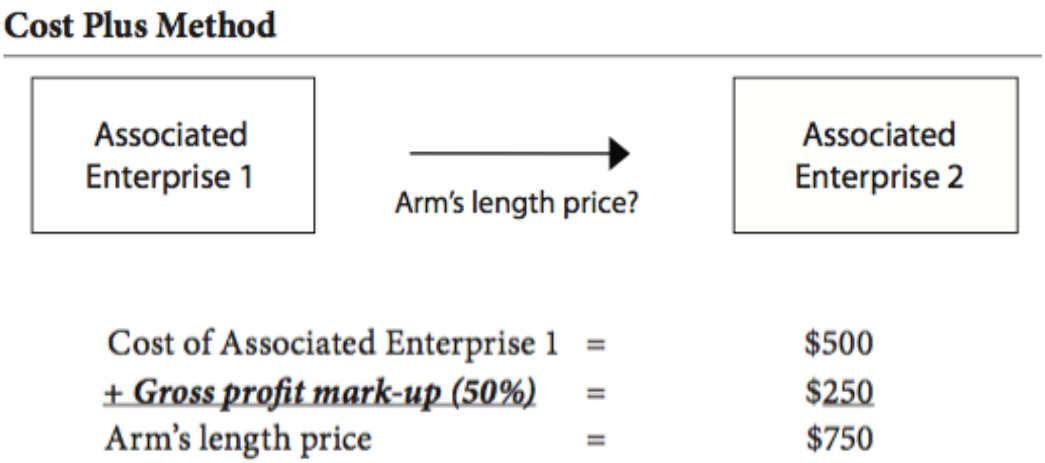
The downsides of the method are the fact that it may be difficult to find data on gross margins because of differences in the accounting systems and the fact that is a one-sided method, because the analysis is focused on the related distributor company (Practical Manual on Transfer Pricing for Developing Countries, United Nations, 2017).

8.1.3 Cost plus method

This method is mostly applied to manufacturing and assembling activities, or simple service providers. It looks at the costs incurred by the supplier of property or services in a controlled transaction; then, an appropriate cost plus mark-up is added in order to calculate a gross profit that takes into account the functions performed and risks assumed by the party. The mark-up is chosen by looking at gross profit mark-ups earned by comparable companies.

It follows that under this method the tested party is the manufacturing company and the arm's length nature of the intra-firm transactions is evaluated by reference to the gross profit mark-ups that independent firms earn in comparable transactions. This is a less direct method than the CUP method, because the assessment is made by comparing gross profit margins rather than prices.

Figure 21: cost plus method



Source: Practical Manual on Transfer Pricing for Developing Countries, United Nations, 2017

The Transfer Pricing Guidelines (OECD, 2017) state that for the cost plus method a transaction can be regarded as comparable if "*none of the differences (if any) between the transactions being compared or between the enterprises undertaking those transactions materially affect the cost plus mark-up in the open market; or, reasonably accurate adjustments can be made to eliminate the material effects of such differences*". As under the resale price method, product differences are less relevant than under the CUP method, because it is less likely that they may have a significant effect on the cost plus mark-up that they have on prices. However, differences in the functions performed by the parties may significantly affect the mark-ups; in such cases, some adjustments may be required.

There are two ways for establishing the gross profit mark-up: the transactional comparison and the functional comparison. The former looks at an internal comparable by taking the gross profit mark-up earned by the same tested party when selling goods or providing services to an unrelated party in a comparable transaction as a reference. The comparison may involve broadly similar products and often, the unrelated party is the same company that has been previously rejected for applying the CUP method, because for example of product differences (Practical Manual on Transfer Pricing for Developing Countries, United Nations, 2017). The latter looks at an external comparable by taking as a reference the gross profit mark-ups earned by independent firms that perform similar functions performed by the tested party and assume comparable risks.

The transactional comparison seems to be more suitable for the cost plus method because it ensures more broad product consistency and generally do not give raise to accounting issues. Indeed, accounting consistency is of primary importance when applying this method. This is because the gross profit mark-ups need to be measured consistently between the related party and the independent one in order to ensure comparability.

The gross profit mark-up can be defined as the ratio of gross profit to cost of goods sold for a comparable uncontrolled transaction. It follows that the transfer price formula

can be written in this way:

TP = COGS * (1 + cost plus mark-up)

where

TP = transfer price of a product sold between two related parties

COGS = cost of goods sold

Cost plus mark-up = gross profit mark-up, which is the ratio of gross profit to cost of goods sold. Gross profit equals net sales minus cost of goods sold (Practical Manual on Transfer Pricing for Developing Countries, United Nations, 2017).

The costs of goods sold, for a manufacturer, are direct labour costs, direct material costs and overheads associated with the production. For the purpose of applying the cost plus method, the gross profit margin is calculated by subtracting only direct and indirect costs of production from net sales (operating expenses, such as Selling, General and Administrative expenses are excluded from the computation). Since the application of the method is based on the inclusion of specific types of costs and the exclusion of others when computing the gross profit margin, any difference in accounting standards between the parties involved in the comparison, may have a significant effect on the result. In order to obtain comparability, a few adjustments can be made, but when it appears necessary to include some operating expenses, a net margin method may be more suitable than the cost plus method. For instance, some companies may classify warranty expenses as operating expenses while other may include them in the calculation of the cost of goods sold. In such circumstances, if reliable adjustments to the gross profit mark-ups can not be made, a net margin method may be more reliable.

In addition to the considerations with regard to accounting consistency, other aspects should be taken into account when determining the costs. Comparable mark-ups should

be applied to comparable cost basis. In doing so it is important to differentiate between cost differences that merely represent different levels of efficiency of the parties involved in the comparison, and differences in costs connected with functions performed and risks assumed. For example, if one of the parties performs additional functions, then a separate return should be determined for each of these additional functions.

Furthermore, if costs vary over a period, it may be more reliable to use average costs; this is particularly appropriate for product groups or specific lines of production. Another aspect to be considered is whether to use actual or budgeted costs. The former guarantees a more realistic representation of the risks assumed by the manufacturer, while the latter is mostly used by third parties in the determination of sale prices (they do not charge more the customers if actual costs are higher that budgeted costs) (Practical Manual on Transfer Pricing for Developing Countries, United Nations, 2017). Since the only costs that are to be considered under the cost plus method are the costs of the manufacturer or service provider, a problem may arise when the party that purchases the goods or services bears some costs in order to decrease the supplier's cost base (this may happen when overheads are not properly allocated to the supplier of the goods or services). In such circumstances, a proper analysis of the functions performed by each of the parties is required in order to allocate the costs accordingly.

To conclude, the reliability of the cost plus method is based on the internal costs of multinationals, which are generally readily available. However, there are some pitfalls that are to be considered: the link between the level of costs and the market price may be weak, accounting inconstancies may negatively affect comparability and if actual costs are used, there may be less incentive for the related party to control costs.

This method is generally applied to intra-firm sale of tangible property or provision of services. It is used when the risks are considered to be low, so that the costs better reflect the market prices. In fact, the tested party is chosen because of its less complex and risky nature, compared to the purchaser, which often performs more complex

functions and incurs in more risks.

8.1.4 Resale price method and cost plus method: the arm's length range

The resale price method and cost plus method look at intra-firm transactions from two different perspectives. On one hand, the resale price method looks at the distributor side of the transaction and measures the profit as a percentage of the sale price; on the other hand, the cost plus method looks at the producer side and measure the profit as a function of the costs incurred in the production. They are based on two different functional roles, and this difference is then reflected on how they measure the appropriate transfer price (Valente P., Manuale del transfer pricing, 2015).
The application of the two methods can be summarized by the following already introduced formulas:

$$TP = RSP * (1 - GPM)$$

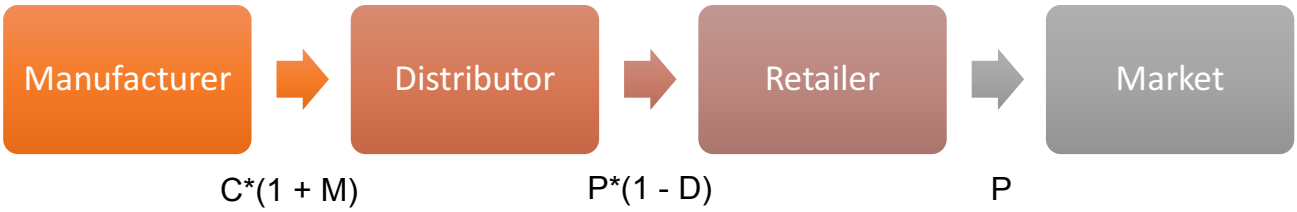
for the resale price method, and

$$TP = COGS * (1 + \text{cost plus mark-up})$$

for the cost plus method.

The gross profit margin (GPM) is the discount rate to be applied on the resale price, while the cost plus mark-up is the coefficient that applies to the costs of production. Both coefficients play a crucial role in the determination of transfer prices, and are identified by a benchmarking analysis with comparable uncontrolled transactions. Therefore, when different values of the coefficients are used, different transfer prices are obtained. These prices taken together define the arm's length range. It has been proved that it is possible to derive a range space that does not depend on any specific transaction. The model has been built on an economic scenario of a multinational company made of a manufacturer, a distributor and a retailer, and on the assumption that each of them earns a profit. The following figure depicts the situation.

Figure 22: multinational company scenario



Source: author's elaboration from Valenti P., Manuale del transfer pricing, 2015, p. 2243

The assumption that each party earns a profit is guaranteed by imposing 0 < M and 0 < D < 1.

The manufacturer applies the cost plus method, while the distributor applies the resale price method, and M and D are the mark-up coefficient and the discount rate to be applied to the costs incurred and the resale price respectively. C is the production cost and P is the market price.

P*(1 – D), the transfer price between the distributor and the retailer, can be defined by the following equation:

$$P*(1 - D) = C*(1 + M) * (1 + S),$$

Where S is a mark-up coefficient.

The equation can be re-written as a function of M, the distributor's mark-up:

$$M = \frac{P}{C} * \frac{1-D}{1+S} - 1$$

$\frac{P}{C}$ is regarded as a constant in this model; while D, M and S are variables. In reality the opposite is true, because coefficients are constant and market prices and costs vary.

The equation can be expressed using mathematical notation:

$$z = \frac{1-x}{1+y} * \Psi - 1$$

where x = D, y = S, z = M, $\Psi = \frac{P}{C}$.

This three variable equation defines the space that represents all the possible coefficients values. Coefficients intervals can be expressed in the following ways:

$$0 < x < 1 - \Psi^{-1}$$

$$0 < y < \Psi - 1$$

$$0 < z < \Psi - 1$$

The extension of the space defined by the equation is given by the value of the constant Ψ. The higher this value, the more extended the space. This means that the ratio between the market price and the production costs determine the extent of the arm's length range.

8.2 Transactional profit methods

8.2.1 Transactional net margin method (TNMM)

The transactional net margin method is one of the two so called transactional profit methods. These methods differ from traditional ones because the analysis is not necessarily focused on a specific comparable uncontrolled transaction. TNMM requires an examination of the net profit that a company realises in a controlled transaction, or an aggregation of transactions, relative to an appropriate base, such as costs, sales or assets (OECD Transfer Pricing Guidelines, 2017). Even if a hierarchy of methods does not exist, and the method to be applied must be chosen according to the particular circumstances of each case, transactional profit methods are usually implemented when complexities make the application of the traditional ones not suitable and reliable. Also, they are often used to supplement the traditional methods, and check their accuracy (Practical Manual on Transfer Pricing for Developing Countries, United Nations, 2017).

In the first place, TNMM compares the net profit margin, such as return on total costs, ROA or operating profit to net sales ratio, earned by the tested party in a controlled transaction to the same net profit margin that it earns in comparable uncontrolled transactions (internal comparables); when this is not possible, the comparison takes as a reference the net margin that would have been earned in a comparable transaction between independent companies (external comparables). The consequence of using net

margins rather than gross margins, like the RPM and the cost plus method, is that the TNMM is a less direct method, compared to them. Of course, it is even less direct than the CUP method, which directly compares prices.

Figure 23: transactional net margin method

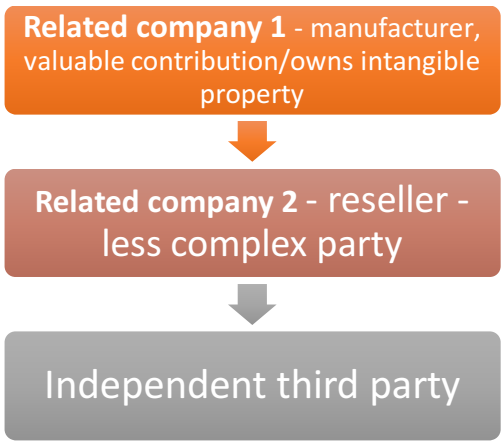
Transactional Net Margin Method

Given price	=	$10 000	
Cost of goods sold	=	$_____?	
Gross profit	=	?	
Operating expenses	=	$ 2 000	
Net profit (5% of price)	=	$ 500	*Comparable*

Source: Practical Manual on Transfer Pricing for Developing Countries, United Nations, 2017

This method is particularly suitable when one of the parties involved in the transaction makes all the unique and valuable contributions; in this case the less complex party, the one that does not make any valuable or unique contribution, is chosen as the tested party. Also, the suitability of this method increases as long as some differences in cost reporting or accounting inconsistencies arise between the tested party and the comparable company. An example may clarify these concepts.

Figure 24: scenario exemplification



Source: author's elaboration

Company 1 produces goods, and sells them to the related company 2, which then resells the products to an independent company. If the CUP method is not applicable, the RPM or cost plus method are considered. Under the cost plus method the tested party would be company 1, which is the most complex in this example and,

therefore, may not guarantee a reliable result. The RPM would be more suitable in this case, because it would focus the analysis on the least complex of the two companies involved in the transaction, company 2. However, RPM may not be reliable enough if gross profit margins are not comparable because of differences in how companies report cost, and reliable adjustments can not be made. In such a case the TNMM would be a more reliable method, since any accounting inconsistency would not be reflected in net margins (Practical Manual on Transfer Pricing for Developing Countries, United Nations, 2017). The same reasoning would have been applied in the case where the reseller was the more complex entity. The RPM would have been rejected because it would treat the more complex company as the tested party; then, the cost plus method would have been considered, but eventually excluded because of accounting inconsistencies. Finally, the TNMM would have been the most suitable choice.

The application of this method is similar to the application of the previous two methods. The difference is that net margins rather than gross margins are used, and so operating expenses are taken into account when calculating transfer prices. A benchmarking analysis is conducted in order to determine the arm's length net profit using a proper profit indicator.

Figure 25: TNMM application mechanism

Mechanism of the Transactional Net Margin Method

	Initially	Benchmarking analysis	
Resale price	?	$7 500	
Cost of goods sold	$5 000	5 000	
Gross profit	?	2 500	
Operating expenses	1 000	1 000	
Operating profit	?	1 500	(25% of total cost)

Source: Practical Manual on Transfer Pricing for Developing Countries, United Nations, 2017

In the above example, when applying the TNMM to the tested party manufacturer, the unknown variables are the resale price and the gross profit. If the net profit margin relative to total costs is 25%, the COGS is $5,000 and operating expense is $1,000, then the transfer price (resale price) amounts to $7,500.

The selection of the appropriate net profit indicator plays a crucial role in the application of the TNMM. It should be selected taking into consideration the nature of the transactions involved, which is determined through a functional analysis. The choice should be made by taking into account only those items that are directly or indirectly related to the controlled transaction and that are of an operating nature (OECD Transfer Pricing Guidelines, 2017). In this context, a more suitable term would be "operating profit", rather than "net profit", because the latter is generally used to indicate a company's profit after interests and taxes have been deducted. Nonetheless, here net profit does not consider interests and taxes. However, the OECD states that there may be exceptional cases where interests and taxes are taken into consideration, according to the circumstances of the case and the functions performed by the parties.
So basically, the numerator of the net profit indicator is a net profit, defined as the income net of direct and indirect expenses, both COGS and operating expenses, but before interests and taxes.
The choice of the denominator of the ratio requires a careful comparability and functional analysis of the controlled transaction, because it should reflect the risks assumed by each of the parties. It tries to reflect the value of the functions performed by the parties and the risks assumed. Usually, sales or distribution operating expenses are regarded as an appropriate denominator for service or manufacturing activities, while operating assets seem to be suitable for capital intensive activities. Clearly, the denominator should be independent from the controlled transaction being analysed. If the transaction involves the purchase of goods from an associated company for resale to third parties, the net profit can not be weighted against the cost of goods sold, because this cost is the cost that is being tested with respect to the arm's length

principle.

The following table summarises the most used net profit indicators.

Figure 26: overview of profit indicators

Return on Assets (ROA)	Operating profit divided by the operating assets (normally only tangible assets)
Return on Capital Employed (ROCE)	Operating profit divided by capital employed which is usually computed as the total assets minus cash and investments
Operating Margin (OM)	Operating profit divided by sales
Return on Total Costs (ROTC)	Operating profit divided by total costs
Return on Cost of Goods Sold	Gross profit divided by cost of goods sold
Berry Ratio	Gross profit divided by operating expenses

Source: Practical Manual on Transfer Pricing for Developing Countries, United Nations, 2017

As it has been said, assets may be used as denominator when they are a good indicator of the value added by the tested party (asset intensive activities or capital intensive financial activities). Operating assets only should be included, such as tangible operating fixed assets (land and buildings and plant and equipment) operating intangible assets (patents and know-how) and working capital assets (inventory and trade and receivables). Assets may be valued either at book value or at market value. On one hand book, book values may cause some distortions in the comparison since one of the parties may have assets more depreciated than the other one, or acquired intangibles rather than self-developed intangibles; on the other hand, market values may be very uncertain, especially with respect to intangibles.

Sales can also be used as denominator, and they are mostly used to determine the arm's length price of purchases from a reseller. The sales to be included should be only the re-sales to independent customers of goods purchased from the related party.

The third most used denominator is represented by costs. The costs to be included are only those costs that are directly or indirectly related to the controlled transaction involved in the analysis. As for the assets, also costs may be valued in different ways. Actual costs, standard costs or budgeted costs can be used. The use of actual costs may disincentive the tested party to monitor and control the costs incurred; while standard costs are often used even between independent parties to set prices: any decrease or increase in actual costs is borne by the manufacturer. Budgeted costs are less used by independent companies as a reference to set prices, because of unpredictable differences with actual costs.

It has been said that the numerator of the profit indicator is generally a net profit; however, also gross profits can be used in some circumstances. Ratios of gross profits to operating expenses are called berry ratios. Particular attention should be paid in the selection of this profit indicator because it is highly sensitive to how operating expenses are classified, giving rise to comparability issues. This type of ratio is particularly useful for intermediary activities, where a related company buys goods from a related party, which then re-sells them to another related party. In such a case, the RPM and cost plus method seem not to be very suitable because of the absence of an independent customer or the fact the the cost of goods sold comes from a controlled purchase. By contrast, operating expenses would not depend from transfer pricing formulation, making the berry ratio an appropriate choice.

The arm's length net profit margins are generally defined by a functional comparison (external comparables), rather than by a transactional one (internal comparables). If there would be enough data for a transactional comparison, there may be a possibility to apply one of the traditional methods. Therefore, most of the times, the TNMM is applied by conducting a functional comparison, because the data needed are generally available. When such comparison is conducted, a benchmarking analysis identifies some uncontrolled comparables. An arm's length profit margin range is found: if the tested party's profit margin falls within the range, it means that the transfer price can

be regarded as at arm's length. In the table below an example of a functional comparison is presented.

Figure 27: functional comparison

	Comparable A	Comparable B	Comparable C	Comparable D	Tested Party
Revenue	100 000	120 000	125 000	130 000	122 000
COGS	80 000	92 400	95 000	89 700	92 720
Gross profit	20 000	27 600	30 000	40 300	29 280
Operating expenses	18 000	24 000	25 000	32 500	24 400
Operating profit	2 000	3 600	5 000	7 800	4 880
Operating profit margin	2%	3%	4%	6%	4%

Source: Practical Manual on Transfer Pricing for Developing Countries, United Nations, 2017

In the example, the profit margin of the tested party, 4%, falls within the profit margin range of 2%-6% of the comparables. The price can be considered at arm's length.

To conclude, strengths and weaknesses of this method are analysed. Among the strengths there is the fact that net profit indicators are not affected by transactional differences, and are very tolerant even with respect to functional differences, because net margins are net of operating expenses, that can vary depending on the functions performed by the parties. This would make difficult a comparison on the base of gross margins, while still guarantees an acceptable level of comparability between net margins. Another strength, thanks to its one-sided nature, is that it asks for the analysis of the financial indicator of only one of the associated companies.

One of the weaknesses that can be identified is the fact that net margins can be affected by factors, such as operating expenses, that do not affect gross margins. This type of factors is generally not related to the transfer pricing policy of a company, so a comparability issue may arise. Lack of information about uncontrolled transactions

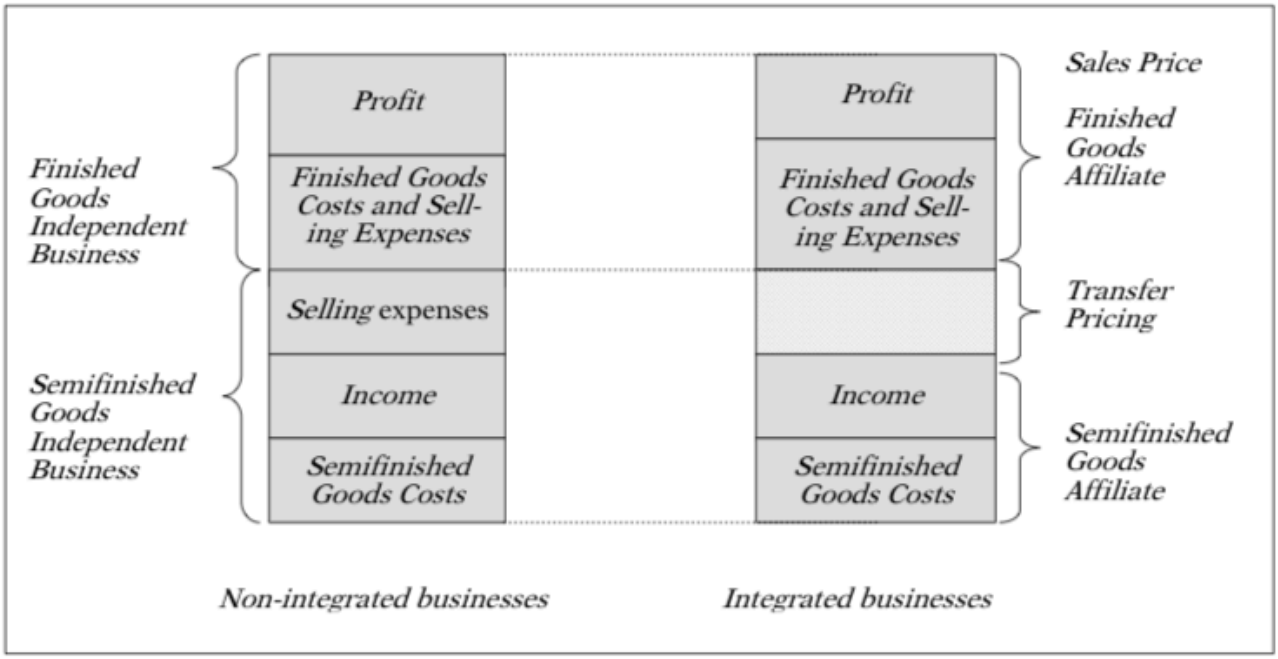
may also undermine the reliability of TNMM. Furthermore, there may be some measurement challenges related to the determination of sales, operating expenses or assets of the controlled transaction, when, for instance, a related distributor buys goods from both a related and unrelated party, making difficult to determine sales, operating expenses and assets attributable to only the controlled transaction.

8.2.2 Profit split method

The profit split method may be particularly useful in the case of highly integrated multinational companies. It is not rare to see high margins earned by associated enterprises that belong to a very integrated group, thanks to transaction costs reductions, integration of processes (management, planning, administration) and centralization of risk management function (Valente P., Il Fisco, 2011). This method is also very suitable when both companies involved in the controlled transaction make unique and valuable contributions; the two-sided nature of this method can better identify and value the contribution of each of the parties involved. In fact, the aim of this method is to "*split [the profit] 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*" (OECD Transfer Pricing Guidelines, 2017).

The profit split method is based on the assumption that differences in prices between controlled and uncontrolled transactions lie in the vertical integration of multinational companies. When the transactions are highly integrated or the parties make unique and valuable contributions, this method is the most reliable, while for simpler functions or when the parties do not make any significant contribution, the profit split method is not appropriate. The following figure highlights different cost structures for integrated and non-integrated companies.

Figure 28: business integration



Source: Valente P., Il Fisco, 2011

The profit is split between the associated parties based on each enterprise's value contribution which should reflect the functions performed, assets used and risks assumed by each of the parties. Each value contribution is valued taking as a reference market data, in order to reflect the profit division that would have occurred between independent companies.

There are two possible approaches in the application of the profit split method: the contribution analysis and the residual analysis. However, the OECD points out that these methods are neither exhaustive or mutually exclusive (OECD Transfer Pricing Guidelines, 2017). Under the contribution analysis the combined profit is allocated to each of the parties involved in the controlled transaction on the basis of the relative value of the functions performed by the parties (Practical Manual on Transfer Pricing for Developing Countries, United Nations, 2017). It might be very difficult to determine and value each enterprise's contribution, especially when the parties make some unique contributions. In such cases, the functional analysis and risk analysis require particular attention, because it may be difficult to find appropriate comparables to support decisions about the profit division in the presence of unique intangibles.

(Valente P., Il Fisco, 2011). Alternatively, under the residual analysis the profit is allocated following a two-step approach:

1. a basic arm's length compensation is allocated to each enterprise for routine and non-unique contributions. This first compensation is generally allocated on the basis of one of the traditional transaction methods or the transactional net margin method, by reference to the remuneration of comparable transactions between unrelated parties;
2. the residual profit, remaining after step 1, is allocated between the associated parties based on the specific facts and circumstances. If intangible property is involved in the transaction, the allocation is based on the value of contributions of intangible property each company makes. The value of each company's contributions may be determined according to the following methods:
    a. an external benchmarking analysis can be used to determine the value of the contributed intangible property;
    b. the contributions may be valued looking at the capitalized costs incurred in the development of intangibles, less the amortization calculated on the useful life of each intangible;
    c. contributions' value can be determined by taking as reference the actual amount of intangible expenditures in the recent years, if have been constant.

The OECD Guidelines suggest that the residual approach can be applied taking as a reference the bargaining theory: the objective is to replicate the outcome of bargaining between independent parties. In the first step, the remuneration would correspond to the minimum price an independent seller would be willing to accept and the maximum price an independent buyer would be willing to pay. The difference between the two numbers would be the residual profit that is to be split according to any factors that indicate how independent companies would have split this amount. An alternative way to apply the residual approach would be to perform an analysis that takes into account the discounted cash flow to each of the parties over the anticipated lifetime of the

operation. However, this method may not be very reliable because it would depend on the rate chosen to discount the cash flow.

The residual approach is generally preferred to the contribution approach because the break up of the procedure into two more manageable steps makes less complicated the transfer pricing problem. Furthermore, any potential conflict with the tax authorities that may arise in the more controversial step 2 is reduced, because the profit to be split has been already partially split in the easier step 1.

The profit to be split between the parties is only the profit that arises from the controlled transactions involved in the analysis. When the transaction involves more than one company, it is important to identify each of them in order to split the profit. The profit can be determined starting from the balance sheets of the associated enterprises, which can be supplemented by other financial data such as product-line income statements or divisional accounts. Most of the time, the combined profit to be split is the operating profit; however, the Guidelines (OECD, 2017) point out that, in exceptional cases, gross profits may be more appropriate. For instance, when a multinational group performs highly integrated trading activities that involve many types of property, it may be difficult to put in relation costs incurred and activities performed. In such a case, splitting the gross profit first, and then deduct the expenses attributable to each enterprise, may lead to a more reliable result.

The profit is split using one or more allocation keys. An allocation key may be either a figure (30%-70%) or a variable (relative value of participant's expenditure). If more than one allocation key is used, they must be weighted against the contribution that each of them represents (OECD Transfer Pricing Guidelines, 2017). Asset-based allocation keys are used when value creation in the controlled transaction is strongly correlated with tangible or intangible assets or capital employed by the parties. Allocation keys can also be cost-based; this is appropriate when there is a strong correlation between relative costs and relative value added by the parties. For instance, marketing expenses may be a reliable key for distributors, while research and

development costs may be appropriate for manufacturers. Cost-based allocation keys may be easier to apply, but they may be sensitive to accounting differences, that may undermine their reliability. Asset-based and cost-based allocation keys are the most used, but there exist other allocation keys based on different factors, such as incremental sales, number of people involved in the key value-generating functions or time spent by employees.

As already mentioned above, the profit split method is particularly suitable for highly integrated operations and when the involved companies make unique and valuable contributions. However, there are also some weaknesses that need to be considered. In the second step of the residual approach, the fact that synergy value is divided relative to inputs' value is based on a theoretical assumption, which may not always reflect what happens in reality. Also, the method is dependent on data from associates, that sometimes is not easily accessible.

On 21 June 2018, the OECD released the Revised Guidance on the Application of the Transactional Profit Split Method, that builds on the work of the discussion drafts issued on 4 July 2016 and 22 June 2017 (Global Tax Alert, EY, 2018). The report confirms that the profit split method, like any other method, is to be applied when it is the most appropriate according to the specific facts and circumstances. The lack of comparables may be regarded as a good indicator that the profit split method can be appropriate but, alone, is not sufficient to decide to apply this method. Conversely, it is unlikely that it would be the most appropriate method when comparables are available. The OECD highlights that the appropriateness of the method depends on the following aspects:

1. presence of unique and valuable contributions;
2. highly integrated business operations;
3. the assumption of economically significant risks is shared by the parties, or they separately assume risks that are closely related.

This means that the method is suggested when the transactions are highly interrelated, so that cannot be analysed on a separate basis. So, when related companies are involved in many interdependent transactions, the profit split method is probably the most appropriate, because of lack of reliable comparable transactions.

8.3 Conclusion on transfer pricing methods

Each of the five available transfer pricing methods have been presented and analysed. It has been said that a hierarchy of methods does not exist; however, when reliable comparables are available, the CUP method is probably the most appropriate method, thanks to its direct nature. Dalloshi (2012) identifies three main components of the transfer pricing analysis:

1. the method is to be selected according to the specific facts and circumstances of the transactions under review; therefore, the most suitable method is to be used;
2. the comparability analysis plays a crucial role in the process. The most important factors are the functional analysis, contractual conditions, risks, economic conditions and the goods and services that are transferred;
3. the analysis shall be conducted following the arm's length principle. The fundamental idea is that the profit that arises from a transaction between related enterprises, should be the same profit that would arise from a transaction between unrelated companies.

In his study, Dalloshi (2012) concludes that the selection of the transfer pricing method has a direct effect on company's profit, and that the new forms of organisation and market development are making the application of the traditional methods more difficult. He suggests that the transactional methods may represent a useful alternative for determining transfer prices according to the arm's length principle.

Accordingly, Hammami and Frein (2014) say that nowadays profit based methods may be preferred by multinational companies. First, multinational groups are highly integrated and transactions between associates often involve valuable intangible

property; in such circumstances profit based methods may better estimate transfer prices. Second, controlled transactions increasingly involve the exchange of specific intermediate products between related parties; therefore, it may be more difficult to find reliable comparables for these transactions, and apply the traditional methods.

9. Profit shifting behaviour and tax haven utilization: an analysis of the Italian multinationals

Richardson and Taylor (2015) conducted an analysis about income shifting incentives and tax havens utilization by US multinational firms. They studied the association between a series of income shifting incentives (multinationality, intangible assets, thin capitalization, transfer pricing aggressiveness) and tax haven utilization. They found a positive association between all these variables and tax haven utilization. Tax havens are jurisdictions characterized by nil or only nominal amounts of corporate taxes. Even if they hold less than 1% of world's population, they host a relatively high share of foreign employment and foreign property, plant and equipment of multinational companies (Richardson and Taylor, 2015). Although multinational companies can utilize tax havens for legitimate purposes, such as facilitating the flow of capital between group members or lowering the cost of capital, great concern has been expressed that they play a crucial role in multinationals' tax avoidance behaviour, by reducing corporate tax liabilities. Multinationals can achieve income shifting by manipulating transfer prices in order to assign more income to low-tax jurisdictions (tax havens). Another way to reduce their tax burden is to build thinly capitalized structures in high-tax jurisdictions in order to get higher tax deductions; this strategy consists in sourcing intra-company debt from low-tax countries to fund operations in high-tax countries: in doing so, multinationals are able to relocate debt and reduce tax liabilities, thanks to the fact that interest income is taxed in low-tax jurisdictions, while interest deductions are granted in high-tax jurisdictions. So, the authors wanted to study those factors that may incentivize US multinational firms to shift income between

differently taxed jurisdictions. More specifically, they focused their attention on income shifting incentives because multinational firms have the ability to shift income between group members incorporated in variably taxed jurisdictions (Richardson and Taylor, 2015). They wanted to test whether the use of tax havens is associated with a series of income shifting incentives. Several studies noted the importance tax havens have in terms of shifting income to low-tax jurisdictions, and their role in contributing to the erosion of corporate tax base. Based on a sample of US multinational firms, Richardson and Taylor (2015) found a positive association between tax haven utilization and the above mentioned income shifting incentives. According to their findings, the level of multinationality, the use of intangibles, the thin capitalized structure and the transfer pricing aggressiveness can explain the use of tax haven by US multinational companies.

Multinational companies may incorporate a subsidiary in a country listed as tax haven for a variety of non-tax reasons, and the existence of a tax haven incorporated subsidiary does not signify that a multinational corporation established that subsidiary for the only purpose of reducing the tax burden. Corporations may incorporate a subsidiary in a specific country for many different reasons, such as taking advantage of sales opportunities, natural resources or favourable labour conditions. However, it has been found that some US multinational companies, engage in aggressive transfer pricing behaviour in order to move income to tax havens to avoid US taxes. Also, for US multinational firms, the share of business activities related to income that is more likely to be affected by income shifting behaviours (i.e., activities that involve intangible assets) is larger in low-tax countries (tax havens). Conversely, in these countries, the share of business activities that are less likely to be affected by income shifting practices (i.e., physical assets, compensation and employment) is smaller (United States Government Accountability Office, 2008). These findings are consistent with Richardson and Taylor (2015) and support the positive association between the use of intangibles and tax havens.

The aim of this work is to conduct a similar analysis to Richardson and Taylor (2015)

applied to the Italian context. More specifically, the objective is to test whether the use of tax haven countries by Italian multinational companies is associated with their degree of multinationality, use of intangibles and thin capitalization. Many authors have studied the phenomenon of tax havens and their implications on taxation, but most of the studies are focused on the American context. This work wants to add to the current knowledge by extending similar reasonings to the Italian scenario. Because of many differences between the American and Italian contexts, it would be interesting to find out whether the same income shifting incentives have the same effects also on the Italian multinational companies.

9.1 Considerations with respect corporate taxation systems, intangibles, capital structure and multinationality in US and Italy

9.1.1 Corporate taxation system: worldwide and territorial tax systems

In their paper, Richardson and Taylor (2015) argue that the characteristics of the US tax system provided a great incentive for the use of tax havens to US multinationals. In the US, the corporate taxation system worked on a worldwide basis (now things are changing, because US is moving toward a hybrid territorial tax system), which means that foreign income was taxed at the home country rate, and credits for the foreign tax paid on the income were allowed (Markle K. S., 2010). So, US multinational were taxed on a worldwide basis, but a US parent firm was taxed on its subsidiaries' foreign income only when this income was repatriated back to the US. This gave a great incentive to American multinationals to defer the repatriation of income by reinvesting it overseas. Conversely, most of the OECD countries, including Italy, are characterized by a territorial taxation system. This means that foreign income is exempted from home country tax (Markle K. S., 2010). Basically, while worldwide taxation systems tax companies based on corporate residence, territorial taxation systems tax firms based on location of profits. However, pure territorial systems do not exist, with no limits or

restrictions. Territorial tax systems can be subject to base erosion and profit shifting phenomena. This type of taxation system aims at taxing companies according to their location of production, which can be very difficult in a highly globalized economy. Processes stretch across different jurisdictions and transactions are more and more characterized by the exchange of intangibles, which makes more challenging to set prices and determine how much profit is to be taxed in a specific country (Pomerleau K., Jahnsen K., taxfoundation.org, 2017). There are studies that argue that multinationals subject to territorial taxation systems are more incentivized to shift income compared to firms subject to worldwide taxation (Markle K. S., 2010): under a territorial taxation system, since companies are taxed based on the location of profits, they may be more incentivized to allocate revenues and costs across tax jurisdictions, taking advantage of country-level differences in tax policies. However, when a worldwide system allows deferral of taxation of foreign income until repatriation (like it was in the US), worldwide firms may be incentivized to shift income as much as territorial firms. Because territorial taxations systems may theoretically be more subject to base erosion and income shifting, several rules and limitations are introduced in order to tackle these problems. Generally, participation exemptions, controlled foreign corporation (CFC) rules and limitations on interest deductions define the scope of territorial systems. The aim is to eliminate taxation of foreign profit, protect home country tax base and make the system as simple as possible, both for taxpayers and tax authorities. It may be challenging to pursue all three aspects, and often taxations systems end up reflecting the complexity of multinational companies' business models (Pomerleau K., Jahnsen K., taxfoundation.org, 2017). Participation exemptions (or dividend deductions) aim at eliminating domestic taxation of income coming from foreign subsidiaries; they can apply both to dividends or capital gains, and can be full or partial. However, these limitations are not unlimited: usually, exemptions are granted only when the parent company holds at least a minimum share of the subsidiary's capital, which varies country by country. Furthermore, exemptions are not allowed if a subsidiary is incorporated in countries classified as tax havens or with an

abusive tax regime, according to the so called “black lists”, published by some countries. CFC rules tackle base erosion and profit shifting by taxing the undistributed income of foreign group members, either including it in the domestic parent’s taxable income or taxing it separately. These rules are not unique to territorial taxation systems, but also countries that adopt a worldwide taxation system have them, in order to prevent income earned by foreign subsidiaries to be deferred indefinitely. In the US, in 1962, the Subpart F rules have been enacted, which incorporate most of the features of CFC rules adopted in other countries. However, in 2017, the US has enacted a major change to its taxation system, with the introduction of the Tax Cuts and Jobs Act. Among the several changes, the tax reform includes a shift from a worldwide taxation system with deferral, to a hybrid territorial system with participation exemptions (KPMG, 2018).

The third feature of a taxation system, either of a worldwide or territorial type, is represented by interest deduction limitations. In most of the countries around the world, interest expenses are deductible and interest income is taxable. These features may give raise to particular financing strategies that aim at reducing the group corporate tax base; intra-company debts can be structured in such a way that interest expenses are deducted in high-tax jurisdictions and interest income is paid in low-tax jurisdictions. For these reasons, in many countries there are the so called thin capitalization rules, that specifically target the interest deduction problem. Generally, these limitations on interest deductions are triggered by the achievement of predetermined debt-to-equity ratio thresholds. They can be supplemented by rules that limit interest deductions to a set percentage of income (earning stripping rules). Italy does not adopt thin capitalization rules per se, but net interest expenses are deductible up to 30% of EBITDA, and any excess in net interest expenses or EBITDA can be carried forward and used in the following years (Deloitte, 2018). In the US, rules about interest deduction limitations can be found in the Internal Revenue Code (IRC) under § 163 (j), which has been revised by the Tax Cuts and Jobs Act. Limitations in the former 163 (j) applied to companies with a debt-to-equity ratio above 1.5 : 1, and net interest expenses higher than 50% of adjusted taxable income. Disallowed interests can be

carried forward and deducted in future years (Deloitte, 2016). The revised 163 (j) sets the limit of interest expense deductibility to the sum of interest income, 30% of adjustable income (similar to EBITDA) and floor plan financing income (Wynman R., Wai A., gtmtax.com, 2018). Similar to Italy, now interest limitation is basically based on an EBITDA calculation, without looking at any debt-to-equity ratio. This implies that a decrease in earnings will also determine a decrease in the amount of interests that can be deducted.

The above discussion has pointed out some of the differences between a worldwide taxation system and a territorial taxation system and highlighted the transition of the US toward a territorial system. Richardson and Taylor (2015) have studied the association between tax haven utilization and a variety of income shifting incentives on a sample of US multinationals over the 2006-2012 period, when the US was still adopting a worldwide tax system; therefore, it may be interesting to study this association in Italy, a different country that, like most of the OECD countries, adopts a territorial tax system, and test whether the income shifting incentive have the same effect on Italian multinational companies that they have on US multinationals.

There are other differences between the US and Italy that may affect the association under review. The difference in the tax system has been analysed, and in the following other factors will be investigated.

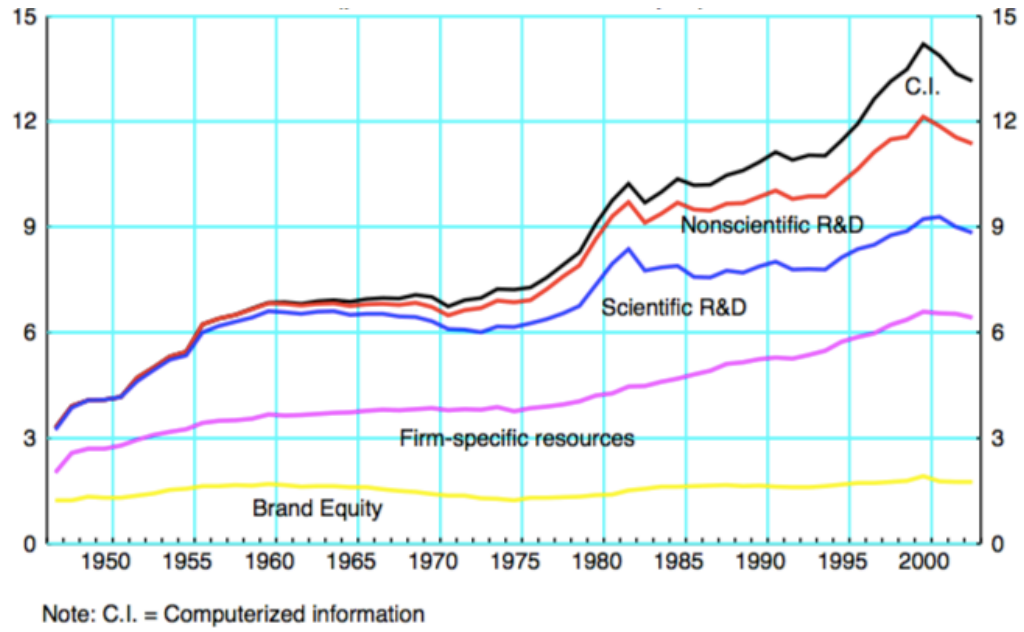
9.1.2 Intangibles

One of the income shifting incentive that has been studies by Richardson and Taylor (2015) is the use of intangibles. Intangibles are of increasing concern with regard to transfer pricing. Because of the intrinsic difficult to measure the value of payments attributable to intangible assets, it may be challenging to price them at arm's length. Therefore, tax revenue erosion is much more likely to happen through the transfer of intangibles, rather than tangible assets. The value of intangible assets is affected by the lack of an established market and subjective valuations, and it can be exploited in

different countries at the same time; therefore, multinationals may engage in income shifting behaviour through the transfer of intangibles to favourably taxed jurisdictions, like tax havens. The OECD highlights the relevance of intangibles in the transfer pricing context. Indeed, a whole chapter of the OECD Transfer Pricing Guidelines is dedicated to intangible assets. Very recently, on 21 June 2018, the OECD released final guidance on the application of the approach to hard-to-value intangibles (HTVI) (EY, 2018). The HTVI approach was included in Actions 8-10 of the BEPS project, and has been incorporated in the Transfer Pricing Guidelines.

In the 21th century economy, the fundamental determinants of enterprise value have an intangible nature (Sacui M., Prediscan M., 2016). Nowadays, the so called knowledge-based economy is driven by intangible investments, especially in human capital and information technology. The importance of intangibles in the current world economy is also reflected in allocation of the purchase price in M&A operations: in the service sector, intangible assets and goodwill account for 84% of the purchase price; more surprisingly, also in the manufacturing sector intangibles play a significant role; in fact, intangible assets and goodwill account for 76% of purchase prices (PPAnalyser, 2017).

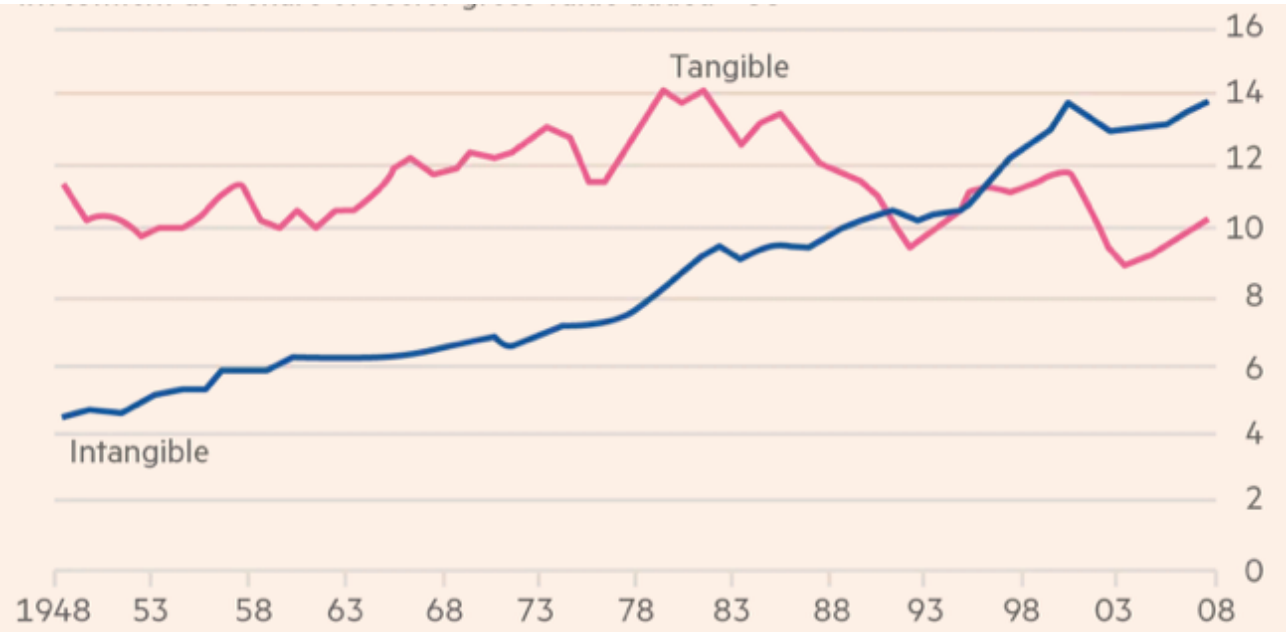
Figure 29: intangible investments US (% of business output)



Source: Corrado C. A., Hulten C. R., Sichel D. E., *Intangible capital and economic growth*, 2006

The above figure shows as investments in intangibles have increased over the last 50 years. Computer software and non-scientific research and development seem to be the most relevant ones. Figure 30 puts investments in intangibles in relation with investments in tangible assets. In the last 20 years, investments in intangibles accounted for a higher proportion of gross value added in US compared to investments in tangible assets. It has been found that intangible investments are those factors that drive wealth creation in the long-run; more specifically, Tahat, Ahmed and Alhadab (2017) have found that variations in firms' financial results may be explained by goodwill and R&D. They found that intangibles have an important role in boosting firms' performance, and that such investments help in the capitalisation of earnings in the market value.

Figure 30: tangible and intangible investments as % of gross value added – US (1948-2008)



Source: Haskel and Westlake, *Capitalism without capitalism – the rise of the intangible economy*, 2017

Figure 31, similarly to figure 30, shows the different trends of investments in tangible and intangible assets. Figure 31 reveals another important feature of intangible assets: they can be very difficult to be valued. The red line in figure 31 represents investments in intangible assets, but measured differently. NIPA[9] treats intangible investments as

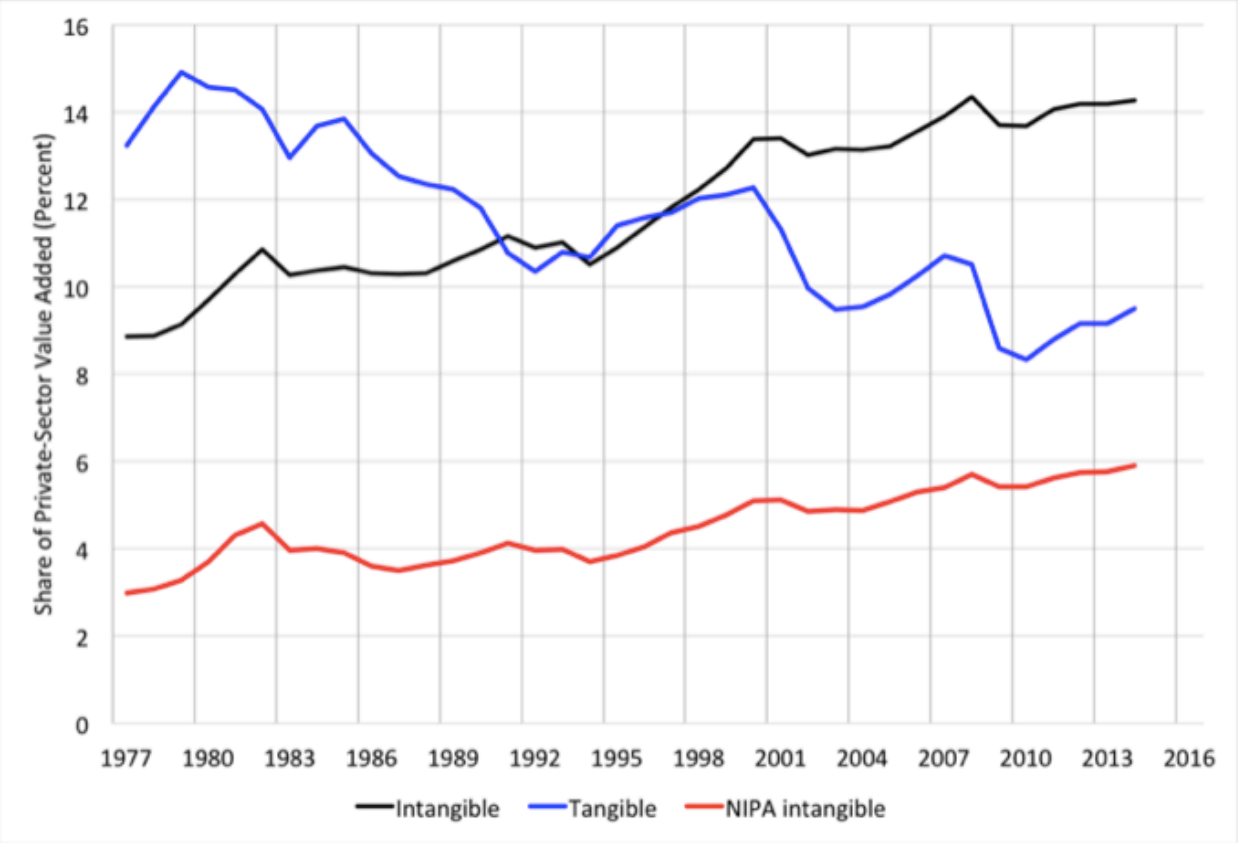
[9] NIPA are the National Income and Product Accounts and are part of the national US accounts.

production costs, thereby understating total investment (moneyandbanking.com, 2018). This may affect GPD statistics, and the problem seems getting worse over time (the gap between the red line and the black line is widening over time).

Both figures 30 and 31 show that total investments remain a stable share of gross value added over time; however, intangible investments are increasing their share.

Lev and Daum (2004) point out that intangibles are the new source of growth for corporations, and that, already in the late 1990s, US companies were investing in intangibles almost the same amount they were investing in physical assets (this is also reflected in figures 30 and 31, where the lines cross each other).

Figure 31: tangible and intangible investments as % of gross value added – US (1977-2014)



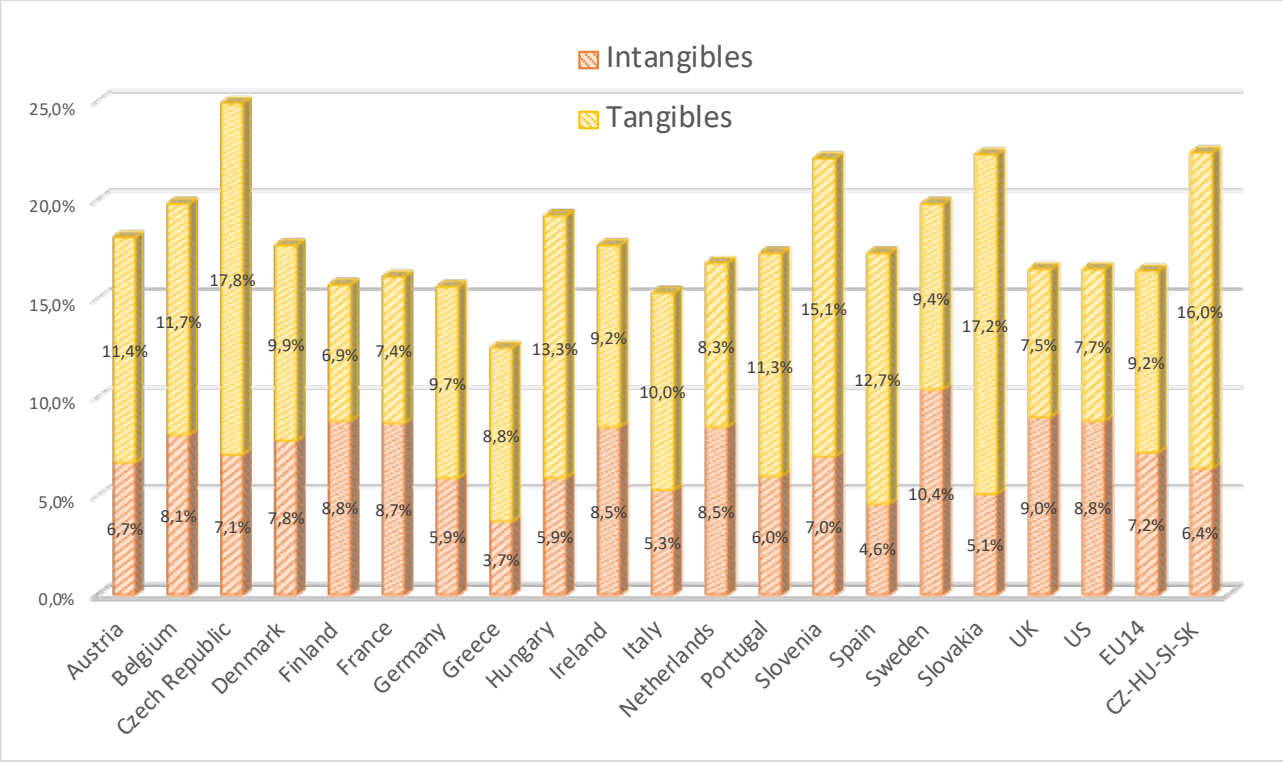
Source: Branstetter and Sichel, "The case for an American Productivity Revival", 2017

The American and Italian contexts differ a lot in terms of investments in intangible assets. Figure 32 shows the average share of intangible and tangible investments in GDP over the period 2003-2013 in 18 EU economies and US (EU14 refers to EU15 excluding Luxembourg). Intangible investments account for 8.8% in the US and 7.2%

in the EU14. In the US, intangible investments have outpaced tangible investments, while in the EU14 the latter still have a higher share.

However, Northern Europe and non-German-speaking continental countries (Denmark, Finland, Ireland, Sweden, UK, France, Netherlands and Belgium) have intangible investments outpacing tangible investments. On the contrary, Mediterranean and German-speaking countries are relatively less intangible intensive. Italy is well below the European average, and among the lowest (Corrado et al., 2018).

Figure 32: intangible and tangible investment as a % of GDP (average 2000-2013)

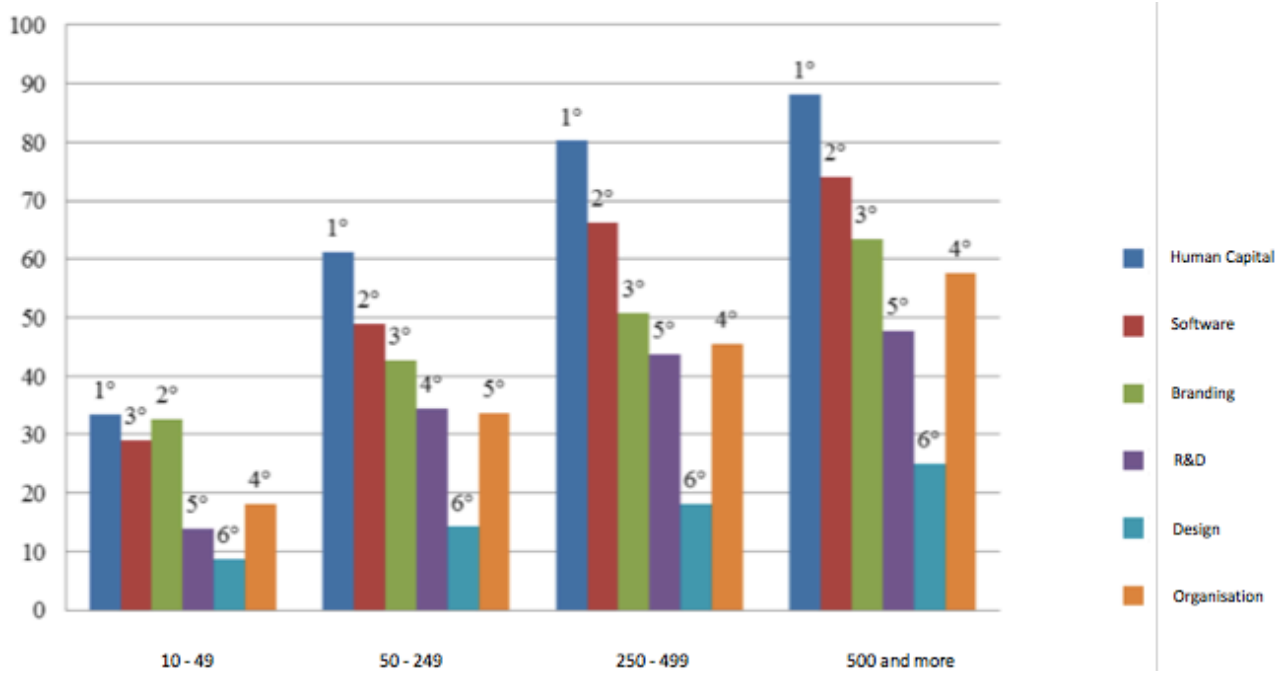


Source: author's elaboration from Corrado et al. "Intangible investment in the EU and US before and since the Great Recession and its contribution to productivity growth", 2018

In Italy, total investments account for 15.3% of GDP, but only 5.3% is in intangible assets. So, compared to 8.8% of the US, Italian companies invest in intangibles less than American companies. The difference in the size between US and Italian companies have an impact on intangible investments. Big companies tend to invest in intangibles more than smaller firms (Angotti R., Tersigni V., 2015). In the figure below, Italian firms are classified according to their size (measured by the number of

employees), and the percentage of firms that invest in six different categories of intangibles is shown. It is clear how bigger firms invest more in intangibles respect to the smaller ones.

Figure 33: % of Italian companies that invest in intangible assets



Source: Angotti R., Tersigni V., "Gli investimenti intangibili delle imprese nei risultati della Intangible Assets Survey", 2015

It is well known that the Italian scenario is characterized by small firms. In 2015, so called PMI ("piccole e medie imprese"), characterized by a number of employees below 250, represented 99.9% of total firms in the country. And, 95.4 % of PMIs was constituted by firms with less than 10 employees. The table below summarises the data about size of Italian firms. This situation is completely different to the American scenario, where firms are relatively bigger. This difference in size may have an influence over the investments in intangible assets, since, as mentioned above, bigger firms tend to invest more in intangibles; therefore, US multinationals may be characterized by larger investments in intangible assets.

This overview about intangibles has pointed out some differences between American and Italian companies, that may be important to take into consideration in the study of income shifting behaviours.

Figure 34: Italian firms size and industry sector (%) - 2015

	0 – 9	10 – 49	50 – 249	250 and more	Total
Manufacturing	82,8	14,7	2,2	0,3	100,0
Construction	96,3	3,5	0,2	0,0	100,0
Transportation and tourism	95,5	4,1	0,3	0,1	100,0
Other services	97,7	1,9	0,3	0,1	100,0
Total	95,4	4,1	0,5	0,1	100,0

Source: author's elaboration from annuario statistico italiano, 2017

9.1.3 Ownership and control

Ownership and control are important aspects that need to be taken into account in the analysis of the income shifting phenomenon. As it has been said, multinational companies may move income across different jurisdictions in two ways: manipulations of transfer prices and thin capitalisation structures. Ownership may have an influence over the capital structure of firms; therefore, it is a factor that may affect income shifting behaviour of multinationals. Historically, two main models of ownership and control of firms can be distinguished. Outsider systems are characterized by dispersed ownership, while insider systems are characterized by concentrated ownership (Fasan, 2012), where the controlling shareholder may be an individual, family, block alliance or financial institution (Maher M., Andersson T., OECD, 1999). In the former (notably in UK and US), the basic conflict of interest is between strong managers and dispersed shareholders, while in the latter (notably in continental Europe), the conflict is between controlling shareholders and minority shareholders. US belongs to the outsider systems, while Italy to the insider systems, therefore, American and Italian firms differ in terms of ownership and control, which is also reflected in their capital structure. Italian firms are characterized by family and state ownership, and tend to have a preference over debt financing rather than equity financing (Fasan M., 2012). Among the features of concentrated ownership there is the fact that it generally ensures more

effective monitoring of management, but at the same time it brings less liquidity and less possibilities of risk diversification. On the other hand, dispersed ownership ensures access to more liquidity, but it may not provide long-term relationships needed for certain investments (Maher M., Andersson T., OECD, 1999). This difference between ownership and control of firms is also reflected in the corporate governance, which has a strong influence over resource allocation of firms, and affects significantly the development of capital markets; it has also an impact on firms' performance and behaviour. It is thought that poor systems of corporate governance are related to poor corporate performance, and they have proved to be an impediment to economic growth. Corporate governance has historically been associated with the "agency problem" or "principal-agent problem", that arises when ownership (principal) and management (agent) of a firm do not coincide.

Figure 35: international comparison of ownership concentration

	Year	Number of companies	Average Largest Stake (% of equity)
Austria	1996	600 largest listed and unlisted non-financial companies	82.2
		62 largest listed companies	52.4
Belgium	1995	135 listed companies	44.8
France	1996	282,322 companies listed and unlisted companies	66.2
		680 listed companies only	57.9
Germany	1996	402 listed companies	55.9
Italy	1996	4173 listed and unlisted manufacturing companies	61.1
		214 listed companies only	48.0
Netherlands	1996	137 listed companies	26.9 45.3[a]
Spain	1995	394 listed companies	38.2 47.1[b]
United Kingdom	1992	189 listed companies	14.4
United States	1980	457 listed non-financial companies	25.4[a]
Japan	1984	143 mining and manufacturing companies	33.1[a]
Korea	1996	30 largest chaebols	44.1[c]

Source: Maher M., Andersson T., OECD, "*Corporate governance: effects on firm performance and economic growth*" 1999

The table above gives a comparison of ownership concentration among different countries. The numbers give a clear picture of the difference in the ownership structure of firms across several countries. In most of the continental Europe countries the largest equity holding is between 40% and 80%, while in US, UK, Japan and the Netherlands is substantially smaller. Italy has an average largest stake of 61.1% for listed and unlisted manufacturing companies and 48% for listed companies only, while US has an average largest stake of 25.4% for listed non-financial firms. These numbers give the possibility to appreciate the difference in the ownership structure between American and Italian companies, the former characterized by a dispersed ownership, while the latter by a concentrated ownership. Sometimes, ownership concentration may not reflect the actual control power of shareholders over the company. This is because of the existence of many devices that can separate ownership (cash-flow rights) and control (voting rights). For instance, there are some tools that, even in a dispersed ownership structure, can give rise to concentrated voting powers (Maher M., Andersson T., OECD, 1999). This brings to a situation with strong controlling blockholders and weak minority shareholders, similar to what happens in a dispersed ownership structure (with the difference that, in this latter case, managers are also weak in terms of control over the corporation).

The table below shows a voting power concentration comparison between different OECD countries. The average of the largest voting block is higher in continental Europe countries, than in US and UK. More specifically, US has an average of 3.6% for NYSE firms and 3.4% for the NASDAQ firms, Italian listed companies have an average of 48%. By looking at the median values, it is possible to note that in Italy voting control by large blockholder is the rule (54.4%), while in the US 50% of companies have the largest shareholder that holds less than 5% of voting rights (a 0% median largest voting block means it is smaller than 5% disclosure threshold).

These comparisons give a clear idea about the different patterns of ownership concentration and control across countries. Another important distinction that can be made is about the owners' identity.

Figure 36: comparison of voting power concentration in listed industrial companies (%)

	Number of companies	Median largest voting block	Mean largest voting block
Austria	50	52.0	54.1
Belgium	121	50.6	41.2
	BEL20	45.1	38.3
France	CAC40	20.0	29.4
Germany	374	52.1	49.1
	DAX30	11.0	17.3
Italy	216	54.5	48.0
The Netherlands	137	43.5	42.3
Spain	193	34.2	40.1
United Kingdom[a]	250	9.9	14.4
United States: NYSE	1309	0[b]	3.6
NASDAQ	2831	0[b]	3.4

Source: Maher M., Andersson T., OECD, "*Corporate governance: effects on firm performance and economic growth*" 1999

[a] Random sample of 250 listed companies.
[b] Below the 5% disclosure threshold.

Outsider and insider systems differ also in terms of who actually owns the companies. The table below provides a comparison of the distribution of share ownership for different OECD countries. Not surprisingly, outsider system countries are characterized by ownership of institutional investors, while insider system countries by individuals and other non-financial corporations. Ownership in the US is associated with the financial sector for 46%, of which insurance companies and pension funds represent 38%, and with the non-financial sector for 54%, where individuals represent 49%. In Italy the scenario is quite different, because 92% of ownership is held by non-financial sector actors: 25% is held by non-financial corporations and 50% by individuals. Only 8% is represented by the financial sector. Also, in Italy public authorities represent 8% of common stock ownership, while in the US this figure is absent.

Another important difference between outsider and insider systems is the preferred type of financing.

Figure 37: ownership of common stock (%)

	US (1996)	Japan (1994)	Germany (1996)	France (1994)	UK (1994)	Italy (1994)	Sweden (1996)	Australia[2] (1996)	Korea (1996)
Financial Sector	46	44	30	8	68	8	30	37	26
of which:									
Banks & other Financial Institutions	7	28[1]	10	4	10	5	1	4	12
Insurance Companies and Pension Funds	28	16[1]	12	2	50	3	14	25	6
Investment funds	12	–	8	2	8	–	15	8	8
Non-financial Sector	54	56	70	92	32	92	70	63	74
of which:									
Non-financial enterprises	–	24	42	58	1	25	11	11	21
Individuals	49	24	15	19	21	50	19	20	34
Public authorities	–	1	4	4	1	8	8	–	7
Foreign	5	7	9	11	9	9	32	32	12
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Note : Due to rounding, the figures may not add up to the total.
1. Pension funds in Japan are managed by trust banks and insurance companies. Division between banks and insurance companies are estimated. No data are available on the extent to which mutual funds own shares. Securities houses do manage such funds. These companies are included under other financial institutions.
2. Australian figures are for end September 1996.

Source: Maher M., Andersson T., OECD, "*Corporate governance: effects on firm performance and economic growth*" 1999

In insider systems, banks act as main external finance providers, and debt/equity ratio of insider system firms is generally higher. This is because firms tend to prefer debt over equity financing. On the contrary, in outsider system countries, firms tend to resort to capital markets, as external finance provider. This situation is reflected in the stock market capitalisation as a percentage of GDP, which is typically lower in insider systems. In insider systems, banks engage in longer term relationships with their clients, and perform monitoring and screening functions. Their close relationships with the corporate sector give them access to firms-specific information, which lowers the overall cost of capital. In bank-based systems, information asymmetry is generally lower and debt is cheaper. However, it is also true that this strong reliance on the bank sector can be a disadvantage for start-up firms, because banks, due to a lack of established track record, tend to bee excessively conservative in their lending policies, which translates in more expensive financing. Italian firms definitely rely more on debt rather than on equity financing. So, the preference over debt may lead to the following advantages: first of all, deductibility of interest expenses may represent a great incentive to use debt rather than equity, because it basically lower the amount of taxes

that are to be paid; second, as it has been said, the use of debt may lower the information asymmetry between insider and outsider actors, because banks can establish close relationships with the corporate sector, which give them access to firm-specific information; third, debt may act as a monitoring tool: management is more disciplined because debt reduces the so called free cash flow problem, which arises when managers have excessive liquidity available and tend to overinvest and spend money not in the best interest of the company; the obligation to repay debt, reduces this problem (Dallocchio M., Salvi A., 2004). The table below well points out this situation, since Italy has a market capitalisation as a percentage of GDP of 21 in 1996. US faces a completely different situation, with a market capitalisation as a percentage of GDP of 114 in the same year. So, as opposed to Italian firms, American firms heavily rely on equity financing, thanks to big and liquid capital markets, and the presence of venture capital markets.

Figure 38: market capitalisation as a % of GDP

	1975	1980	1985	1990	1993	1994	1995	1996
Australia (Assoc. of SE)	22	40	37	37	71	67	70	80
Austria	3	3	7	17	16	16	14	15
Belgium	15	8	26	33	37	36	37	44
Canada (Toronto and Vancouver)	30	45	45	43	61	59	66	86
Denmark	11	8	26	30	31	34	33	41
Finland	–	–	–	17	28	39	35	49
France	10	8	15	26	36	34	32	38
Germany (Assoc. of SE)	12	9	29	22	24	24	24	28
Greece	–	–	–	–	–	–	14	19
Ireland	–	–	–	–	–	–	40	49
Italy[1]	5	6	14	14	15	18	19	21
Japan	28	36	71	99	68	77	69	66
Korea	–	–	–	43	42	50	40	29
Mexico	–	–	–	16	50	31	32	32
Netherlands	21	17	47	42	58	67	72	95
New Zealand	–	–	39	20	56	53	53	56
Norway	–	–	16	23	24	30	30	36
Spain	32	8	12	23	25	25	27	33
Sweden	3	10	37	40	58	66	75	95
Switzerland[2]	30	42	91	69	114	109	129	136
Turkey	–	–	–	–	20	17	12	17
United Kingdom	37	38	77	87	122	114	122	142
United States (NYSE, Amex and Nasdaq)[3]	48	50	57	6	81	75	98	114

1. Italy – All Italy on a net basis since 1985.
2. Switzerland – only Zurich through 1990.
3. United States – including foreign shares in 1975.

Source: Maher M., Andersson T., OECD, "*Corporate governance: effects on firm performance and economic growth*" 1999

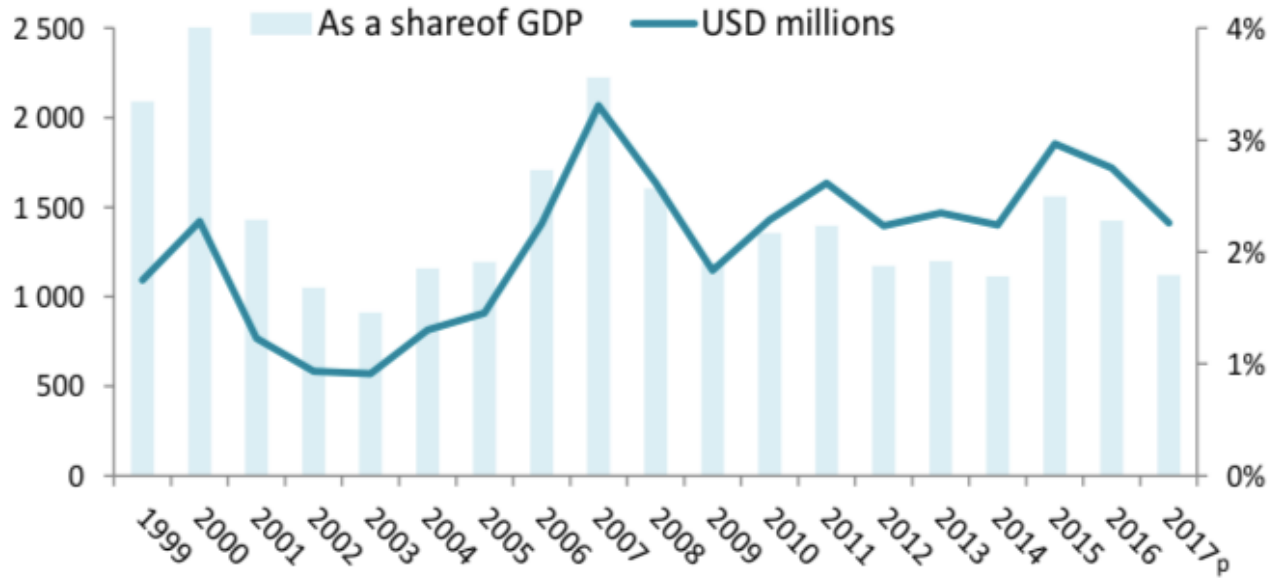
This overview about ownership structure, control power, identity of owners and financing preferences has highlighted important differences between American and Italian firms, which, as it has been mentioned at the beginning of this chapter, may have an influence over income shifting behaviour. In the following, another important factor, that can highlight some other differences between the American and Italian contexts, is analysed.

9.1.4 Multinationality

The degree of multinationality of multinational companies can be measured by foreign direct investments (FDI). FDI can be defined as "*the establishment of a lasting interest*

in and significant degree over the operations of an enterprise in one economy by an investor in another economy. Ownership of 10% or more of the voting power in an enterprise in one economy by an investor in another economy in evidence of such a relationship" (Measuring international investment by multinational enterprises, OECD, 2015). FDI are basically what create multinational companies.

Figure 39: global FDI flows

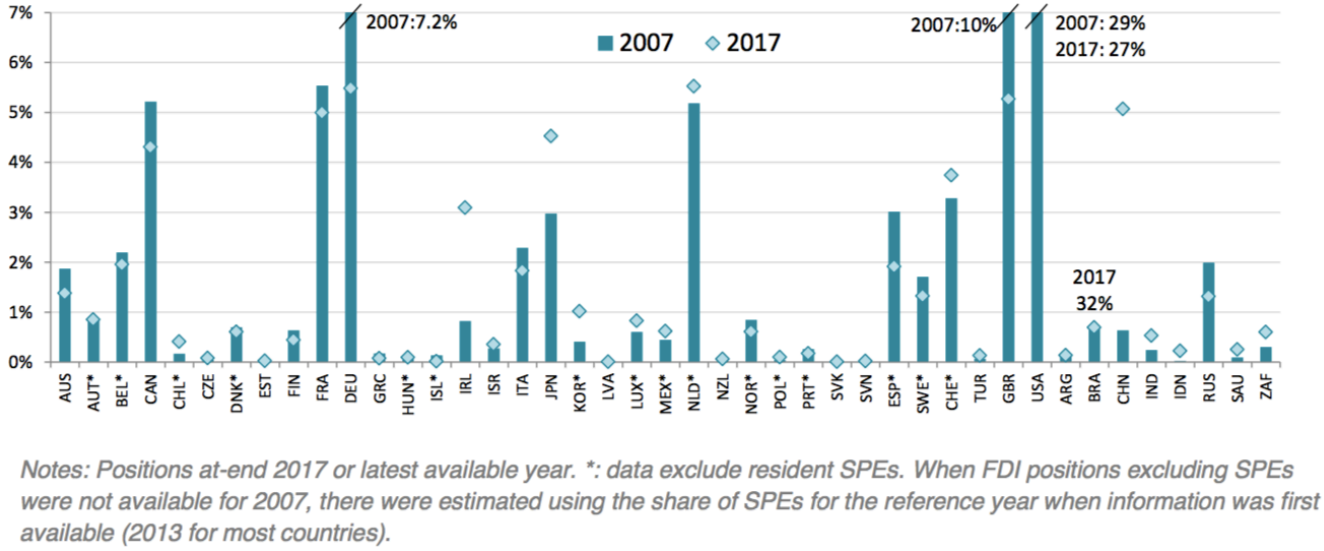


Source: FDI in figures, OECD, 2018

In the table above, global FDI flows are shown. In 2017, FDI flows have decreased by 18% compared to the previous year, to USD 1.411 billion. This is 1.8% of global GDP, compared to 2.3% in 2016. From OECD countries as a whole, FDI outflows have declined in 2017, but while Italy has contributed to this decrease, US has recorded a large increase. To give an overall picture of the relative importance of each country with respect the global outward FDI position, the figure below is provided. FDI position can be defined as the accumulated direct investment at a specific point in time[10].

[10] Three main measures of FDI exist: financial flows, which are debt and equity investments between associated companies; income, which is the return on equity and debt to the direct investor; and positions (or stock), which are the value of the accumulated direct investment at a specific point in time (Measuring international investment by multinational enterprises, OECD, 2015).

Figure 40: outward FDI positions as a share of global outward position



*Notes: Positions at-end 2017 or latest available year. *: data exclude resident SPEs. When FDI positions excluding SPEs were not available for 2007, there were estimated using the share of SPEs for the reference year when information was first available (2013 for most countries).*

Source: FDI in figures, OECD, 2018

It is clear the different role US and Italy play with respect global FDI outward flows. In 2017, US accounts for 27%, while Italy for less than 2%. These are absolute measures of FDI, therefore may not be the most appropriate for a comparison. The tables below better capture the difference between US and Italy with respect FDI outflows and stocks.

Figure 41: FDI financial flows overview – US (millions of dollars and %)

FDI flows	2005–2007 (Pre-crisis annual average)	2014	2015	2016	2017	as a percentage of gross fixed capital formation 2005–2007 (Pre-crisis annual average)	2015	2016	2017
United States									
Inward	**185 953**	**201 734**	**465 765**	**457 126**	**275 381**	**6.0**	**13.0**	**12.6**	**7.2**
Outward	***211 035***	***294 754***	***262 569***	***280 682***	***342 269***	***6.8***	***7.3***	***7.7***	***8.9***

Source: World investment report, UNCTAD, 2018

Figure 42: FDI stock overview – US (millions of dollars and %)

FDI stock	1995	2014	2015	2016	2017	as a percentage of gross domestic product 1995	2015	2016	2017
United States									
Inward	**1 005 726**	**5 456 888**	**5 709 658**	**6 555 622**	**7 807 032**	**13.1**	**31.7**	**35.3**	**40.2**
Outward	***1 363 792***	***6 276 783***	***6 007 773***	***6 361 419***	***7 799 045***	***17.8***	***33.3***	***34.3***	***40.2***

Source: World investment report, UNCTAD, 2018

Figure 41 and 42 show FDI financial flows and stock respectively for US, both in absolute terms and as a percentage of gross fixed capital formation or GDP. Figure 43 and 44 provide the same information for the Italian context.

Figure 43: FDI financial flows overview – Italy (millions of dollars and %)

FDI flows	2005–2007 (Pre-crisis annual average)	2014	2015	2016	2017	as a percentage of gross fixed capital formation 2005–2007 (Pre-crisis annual average)	2015	2016	2017
Italy									
Inward	36 574	23 223	19 628	22 243	17 077	8.5	6.4	7.1	5.4
Outward	*59 797*	*26 316*	*22 310*	*17 752*	*4 417*	*13.9*	*7.3*	*5.6*	*1.4*

Source: World investment report, UNCTAD, 2018

Figure 44: FDI stock overview – Italy (millions of dollars and %)

FDI stock	1995	2014	2015	2016	2017	as a percentage of gross domestic product 1995	2015	2016	2017
Italy									
Inward	65 350	352 502	340 505	347 490	413 246	5.6	18.6	18.8	22.9
Outward	*106 323*	*490 677*	*468 352*	*473 233*	*532 910*	*9.1*	*25.7*	*25.6*	*29.5*

Source: World investment report, UNCTAD, 2018

FDI outward flows as a percentage of gross fixed capital formation and FDI outward stock as a percentage of GDP give a clear idea about the degree of multinationality of the two countries. In 2017, the former figure, in the US, is more than 6 times bigger than in Italy (8.9% and 1.4% respectively), and the latter figure is 40.2% for US and 29.5% for Italy. These numbers highlight as US companies tend to invest abroad more than their Italian counterparts.

Other measures capable of capturing the degree of firms' multinationality may be the ratio between foreign assets and total assets, or the number of foreign employees. The table below provides the top 20 non-financial companies ranked by foreign assets in 2016.

Figure 45: top 20 non-financial companies ranked by foreign assets - 2016

Name (ISO code of domestic economy)	Assets (billion EUR)		Number of employees (1 000)	
	Foreign	Total	Foreign	Total
Royal Dutch Shell plc (UK) (')	315.9	371.6	67.0	92.0
Toyota Motor Corporation (JP)	274.4	393.9	148.9	348.9
BP plc (UK)	212.4	237.9	43.6	74.5
Total SA (FR)	210.7	220.0	70.5	102.2
Anheuser-Busch InBev NV (BE)	187.9	233.4	163.2	206.6
Volkswagen Group (DE)	178.2	390.2	346.7	626.7
Chevron Corporation (US)	170.9	235.0	28.7	55.2
General Electric Co (US)	161.3	329.9	191.0	295.0
Exxon Mobil Corporation (US)	149.9	298.4	35.7	71.1
Softbank Corp (JP)	131.5	199.0	42.0	63.6
Vodafone Group Plc (UK)	129.7	149.4	75.7	105.3
Daimler AG (DE)	125.5	231.4	112.4	282.5
Honda Motor Co Ltd (JP)	117.5	153.2	143.4	208.4
Apple Computer Inc (US)	114.5	290.6	45.7	116.0
BHP Billiton Group Ltd (AU)	107.5	107.5	11.0	26.8
Nissan Motor Co Ltd (JP)	105.3	148.8	87.6	152.4
Siemens AG (DE)	104.1	126.8	136.9	351.0
Enel SpA (IT)	100.5	148.2	30.1	62.1
CK Hutchison Holdings Ltd (HK)	99.8	118.1	263.9	290.0
Mitsubishi Corporation (JP)	97.4	127.3	52.3	68.2

Source: World investment report, UNCTAD, 2017

Among the top 20 non-financial companies ranked by foreign assets, 4 are American and only 1 is Italian. This gives an additional insight about the level of multinationality of American and Italian firms.

9.2 Theory and hypothesis development

The above chapters have pointed out important differences between the American and Italian companies, with respect to the corporate taxation system, intangible investments, ownership structure and level of multinationality.

The aim of this last part of the work is to study the association between a series of income shifting behaviour and the utilization of tax haven countries by Italian companies, similarly to what Richardson and Taylor (2015) did with respect to the US context. This study is based on the assumption that multinational companies have the capabilities to engage in tax motivated income shifting between variably taxed jurisdictions and that utilize tax havens to reduce their overall tax burden, and aims at capturing income shifting incentives that represent key drivers for tax haven utilization. More specifically, three income shifting incentives are selected and their association with the utilization of tax havens is studied. In the following, each hypothesis is presented.

9.2.1 Intangible assets

It has been said that the transfer of payments related to intangible assets may be used to transfer income across different jurisdictions, because of the difficulty in properly valuing them. The differences between the American and Italian contexts have been highlighted, and it has been found that US firms tend to invest more in intangible assets than Italian firms. It has also been said that the Italian scenario is characterized by small firms compared to the US, and this has an influence over the amount of resources companies invest in intangible assets. Bigger firms have a tendency to invest in intangibles, while smaller companies still rely more on physical investments, especially in Italy where investments in intangibles are 5.3% of GDP, while in US they account for 8.8%. It would be interesting to test whether the same association between investments in intangibles and utilisation of tax havens can be found in the Italian context. The expectation is that Italian multinationals that invest more in intangibles, will be more likely to incorporate a subsidiary in a tax haven country. This hypothesis is based on the same reasoning made by Richardson and Taylor (2015): tax revenue erosion is more likely to happen through the transfer of high-value intangible assets between related companies that are located in differently taxed jurisdictions. This is because of the lack of well established markets and subjective valuations of intangibles, that give companies substantial scope to shift income across variably taxed jurisdictions. Therefore, companies that engage in the transfer of intangibles, may be more incentivized to incorporate subsidiaries in tax haven countries, in order to take advantage of the favourable taxation regime.

Hypothesis 1 is the following:

> **H1**: multinational companies with more investments in intangible assets are more likely to have a tax haven incorporated subsidiary

9.2.2 Thin capitalisation

Previously, ownership and control structure has been analysed, and the main differences between American and Italian firms have been discussed. Multinationals can employ specific financing strategies aimed at reducing corporate taxes. It has been described how thinly capitalized firms are incorporated in the home country to take advantage of interest expense deductions and taxes on interest income are paid in low-tax jurisdictions. Each country employs different regulations to tackle this problem, the so called thin capitalisation rules. In US, before the Tax Cuts and Jobs Act, thin capitalisation rules consisted in limitations to interest deductions for companies that exceeded certain thresholds: more specifically, limitations applied to companies with a debt-to-equity ratio above 1.5 and net interest expenses that exceeded 50% of EBITDA. With the introduction of the Tax Cuts and Jobs Act, regulation has been aligned with the regulation in force in most of the OECD countries, including Italy. So now, deductibility of interest expenses is basically limited to 30% of EBITDA, and any debt-to-equity ratio threshold has been removed. However, American and Italian firms still differ a lot in terms of capital and control structure, and an overview has already been provided. Two main ownership models can be distinguished, the outsider system and insider system. The US model can be categorized as an outsider system, which is characterized by dispersed ownership, while the Italian one as an insider system, which features concentrated ownership. In the former, the basic conflict of interest is between powerful managers and dispersed shareholders, while in the latter, the conflict between controlling shareholders and minority shareholders is the most relevant. The two models differ also in the preference of the type of financing: American firms have a preference over equity and resort to capital markets as source of finance, while Italian firms prefer debt and less often resort to capital markets. These aspects have a strong influence over the capital structure of companies, so that different considerations about thin capitalisation may be done. Italian firms may be expected to be more thinly capitalized because of their reliance on debt rather than equity, and, in light of the above

considerations, it would be interesting to test whether this situation acts as an incentive to shift income to low-tax jurisdictions. A thinly capitalized company may have an incentive to engage in specific financing strategies that take advantage of differences in taxation among jurisdictions. For this reasons, thinly capitalized multinationals are thought to use tax haven countries to reduce the overall tax burden.

Hypothesis 2 is the following:

> **H2**: thinly capitalized firms are more likely to have a tax haven incorporated subsidiary

9.2.3 Multinationality

The third income shifting incentive that is analysed is the degree of multinationality. Profit shifting behaviour may be driven by the firms' international exposure. This means that companies with greater foreign operations may have more opportunities to engage in profit shifting behaviour. They may have the capabilities to shift income to low-tax jurisdictions, take advantage of differences in the tax rules of different countries, or allocate tax deductible expenses in order to reduce tax liabilities. A comparison of the level of multinationality between US and Italy has been done by looking at the importance of the foreign direct investments (FDI) in the two countries. The relevance of FDI has been measured by looking at FDI outward flows as a percentage of gross fixed capital and FDI outward stock as a percentage of GDP, and in both cases it has been noted how FDI assume greater importance in US, rather than in Italy. This gives an idea about the presence of American companies beyond their national borders, and about their international exposure. A higher degree of multinationality give companies greater opportunities to engage in income shifting behaviours. This is because, by definition, income shifting takes place when income is moved from one jurisdiction to another one, in order to take advantage of more favourable tax regimes; therefore, the higher the presence of a multinational company in several different countries, the higher the chances to shift income across countries.

Conversely, purely domestic firms do not have such opportunities, since they limit their presence within the home country. The considerations about firms' size that have been proposed with respect to intangible assets, can also be done here. Bigger firms are more likely to have a wider scope of action and be present in more countries; also, they may have greater opportunities and capabilities to reduce their taxes through tax planning (Richardson and Taylor, 2015). In light of these considerations, it can be said that US is characterized by firms with a higher degree of multinationality, compared to their Italian counterparts. Therefore, it would be interesting to test whether the multinationality works as incentive to shift income to low-tax jurisdictions for Italian multinationals too. For this reasons, companies with a higher degree of multinationality are thought to use tax haven countries to reduce corporate tax.

Hypothesis 3 is the following:

> **H3**: companies characterized by a higher degree of multinationality are more likely to have a tax haven incorporated subsidiary

9.3 Research methodology

The sample of firms is composed by all firms listed on the Italian Stock Exchange that do not belong to the bank and insurance sectors. Data used in the analysis are referred to 2017. Following Richardson and Taylor (2015), the dependent variable is represented by the occurrence of tax haven utilization: TAXH is a dummy variable, that is coded as 1 if the company has at least one tax haven[11] incorporated subsidiary, and 0 otherwise. In line with Richardson and Taylor (2015) this tax haven measure tries to capture the occurrence of material tax haven operations based on presence of a

[11] A country is considered a tax haven if it belongs to Hines (2010) tax haven list. The list includes Andorra, Antigua and Barbuda, Anguilla, Netherlands Antilles, Aruba, Barbados, Bahrain, Bermuda, Bahamas, Belize, Switzerland, Cook Islands, Costa Rica, Cyprus, Djibouti, Dominica, Micronesia, Grenada, Guernsey, Gibraltar, Hong Kong, Ireland, Isle of Man, Jersey, Jordan, St. Kitts and Nevis, Cayman Islands, Lebanon, St. Lucia, Lichtenstein, Liberia, Luxembourg, Monaco, St. Martin, Marshall Islands, Macao, Montserrat, Malta, Mauritius, Maldives, Netherlands, Nauru, Niue, Panama, Seychelles, Singapore, San Marino, Turks and Caicos Islands, Tonga, St. Vincent and the Grenadines, British Virgin Islands, Vanuatu and Samoa.

company in a tax haven jurisdiction. Then, consistent with Richardson and Taylor (2015) three independent variables have been selected: INTANG refers to intangible asset investments, and is measured as intangible assets over total assets. THINC refers to the thin capitalisation variable and is a dummy variable, that is coded as 1 if the debt-to-equity ratio is above 1.5 and net interest expenses exceed 50% of EBITDA; this measure is used by Richardson and Taylor (2015) and is calculated according to US thin capitalisation regulation (the already mentioned section 163 (j) of the US Income Tax Code). It is used here as well, since Italy does not have a thin capitalisation rule per se and in order to preserve comparability of the analysis. The third independent variable is MULTI, which is the degree of multinationality, and, following Dörrenbächer (2000), is measured as the number of countries a company is active in. Consistently with Richardson and Taylor (2015), three control variables are also included in the study. SIZE refers to companies' dimensions and is measured by the natural logarithm of total assets. It is thought that larger firms may have more opportunities to reduce taxes, compared to their smaller counterparts. CFO stays for net operating cash flow scaled by total assets, and it is included in order to control for the flow of funds from operations and company performance. Finally, ROA is included to control for firm performance and profitability, because more profitable firms may have more resources to incorporate subsidiaries in tax haven countries. It is measured as pre-tax profit over total assets.

The regression[12] used to study the profit shifting behaviour of Italian multinational companies is the following:

$$TAXH = \beta_1 INTANG + \beta_2 THINC + \beta_3 MULTI + \beta_4 SIZE + \beta_5 CFO + \beta_6 ROA$$

Before implementing the multiple regression, three univariate analyses have been conducted, in order to find out whether any pattern exist within the data. More

[12] Since the dependent variable is a dummy variable the hypotheses are tested employing a logit regression analysis.

specifically, three t-tests have been performed, for each of the three independent variables. Only then, the regression has been run.

9.4 Results

In the table below, a summary of descriptive statistics is provided. TAXH has a mean of 0.69, which means that 69% of the companies in the sample have at least one tax haven incorporated subsidiary. The mean for INTANG is 0.22, so Italian listed multinationals have, on average, a ratio between intangibles and total assets of 22%. Only 2% of the companies have at the same time a debt-to-equity ratio above 1.5 and net interest expenses exceeding 50% of EBITDA. MULTI has a mean of 18.36, meaning that, on average, Italian multinationals have subsidiaries incorporated in 18 different countries. The other values for the control variables are reported in the table as well.

Table 1

Descriptive statistics

This table provides descriptive statistics for the variables included in the analysis. The dependent variable is TAXH, and measures the tax haven utilization; it is coded as 1 if the multinational has at least one tax haven incorporated subsidiary, or 0 otherwise. The independent variables are the following: INTANG refers to intangible assets and is measured as the ratio between intangibles and total assets; THINC refers to thin capitalisation and is coded as 1 if a company has a debt-to-equity ratio above 1.5 and net interest expenses exceed 50% of EBITDA, or 0 otherwise; MULTI refers to the degree of multinationality and is measured by the number of countries a company is active in. The control variables are the following: SIZE refers to firm's dimensions and is measured by the natural logarithm of total assets; CFO refers to net cash flow from operations and is measured by the ratio between net operating cash flow and total assets; finally, ROA refers to firm's return on assets and is measured by the ratio between pre-tax profit and total assets.

Variable	N	Mean	Median	Standard deviation	Minimum	Maximum
TAXH	118	0,69	1,00	0,47	0,00	1,00
INTANG	114	0,22	0,19	0,18	0,0015	0,68
THINC	118	0,02	0,00	0,13	0,00	1,00
MULTI	118	18,36	14,00	16,33	1,00	71,00
SIZE	118	14,01	13,89	1,82	9,51	18,86
CFO	118	0,08	0,08	0,07	-0,16	0,27
ROA	118	0,06	0,05	0,09	-0,47	0,53

The correlation matrix is reported below, which shows a correlation between TAXH and MULTI of 0.52 and between TAXH and INTANG of 0.12. Correlation between TAXH and THINC is very low. The values for all the other variables are reported in the table.

Table 2

Correlation matrix							
This table provides the correlation matrix for all the variables included in the analysis							
	TAXH	**INTANG**	**THINC**	**MULTI**	**SIZE**	**CFO**	**ROA**
TAXH	1						
INTANG	0,12	1					
THINC	-0,05	-0,02	1				
MULTI	0,52	-0,12	-0,07	1			
SIZE	0,41	0,12	-0,19	0,46	1		
CFO	0,11	0,04	-0,20	0,11	0,03	1	
ROA	0,22	-0,03	-0,05	0,10	0,01	0,70	1

Before running the multiple regression, three t-tests have been conducted. The whole sample has been divided with respect the median of each independent variable (for THINC, that is a dummy variable, the sample has been divided according to the value assumed by the observations, either 1 or 0), and the mean of TAXH for each sub-sample has been observed. The null hypothesis that has been tested is that the difference in the mean of TAXH of the two sub-samples for each independent variable is equal to 0. The results of the t-tests are reported in the three tables below. The null hypothesis can be rejected only for the MULTI variable. Conversely, for INTANG and THINC the null hypothesis can not be rejected, because a p-value of 0.12 and 0.29 have been found respectively.

Table 3

T - test; INTANG		
A t-test is conducted; H0 is that there is no difference in the mean of the two samples; p-value is reported in the last row		
	TAXH when INTANG above median	**TAXH when INTANG below median**
Mean	0,74	0,63
Variance	0,20	0,24
N	57,00	57,00
p - value	0,12	

Table 4

T - test; THINC		
A t-test is conducted; H0 is that there is no difference in the mean of the two samples; p-value is reported in the last row		
	TAXH when THINC = 1	**TAXH when THINC = 0**
Mean	0,5	0,689655172
Variance	0,5	0,215892054
N	2	116
p - value	0,29	

Table 5

T - test; MULTI		
A t-test is conducted; H0 is that there is no difference in the mean of the two samples; p-value is reported in the last row		
	TAXH when MULTI above median	**TAXH when MULTI below median**
Mean	0,93	0,43
Variance	0,07	0,25
N	58,00	58,00
p - value	0,00000000027	

The null hypothesis can be rejected only for the MULTI variable, however, with the implementation of the multiple regression the results improve.

The following table provides the results of the regression. What it is found is that the degree of multinationality is positively and significantly associated ($p < 0.01$) with tax haven utilization by Italian multinationals. The use of intangible assets is also positively and significantly associated ($p < 0.05$) with the dependent variable. Thin capitalisation variable has a positive coefficient but it is not significantly associated with the utilization of tax havens. Looking at the control variables, it is possible to note a positive and significant association for SIZE ($p < 0.10$) and ROA ($p < 0.10$), which suggests that firms' dimensions and profitability are associated with the incorporation of subsidiaries in tax haven countries. R2[13] is also reported in the table.

[13] McFadden R^2 is reported.

Table 6

Regression results

	Coefficient	Standard error	z	p - value	
const	-7.81744	2.89758	-2.698	0.0070	***
INTANG	3.12419	1.54513	2.022	0.0432	**
THINC	0.0779036	1.78887	0.04355	0.9653	
MULTI	0.242907	0.0574917	4.225	2.39e-05	***
SIZE	0.369988	0.199364	1.856	0.0635	*
CFO	-9.23874	6.08782	-1.518	0.1291	
ROA	14.9581	7.68254	1.947	0.0515	*

R2 = 0.506

*, ** and *** indicate significance at 0.10, 0.05 and 0.01

Despite Italian multinational companies have a lower degree of multinationality and tend to invest less in intangible assets compared to their American counterparts, still a positive and significant association is found with tax haven utilization. This means that they still act as income shifting incentives to incorporate subsidiaries in tax haven countries. However, the thin capitalisation variable is found to be not significantly associated with tax haven utilization, differently to what happens for American multinationals according to Richardson and Taylor (2015). Only 2% of the companies in the sample (see Table 1) have a debt-to-equity ratio above 1.5 and net interest expenses exceeding 50% of EBITDA. It has been said that the Italian context, which can be categorised as an insider system, is characterized by companies that tend to prefer debt rather than equity as source of finance. This would lead to higher debt-to-equity ratios compared to what can be found in US, which is categorized as an outsider system, where companies present a dispersed ownership and tend to prefer equity over debt. So, the preference of debt by Italian companies may induce to think that the THINC variable should have played as an incentive to shift income across jurisdictions, even more than it does for American multinationals, according to Richardson and Taylor (2015). But, the explanation for the not significant association between thin capitalisation and tax haven utilization by Italian multinationals may exactly rely on their preference over debt. Indeed, it can be argued that, because of this tendency to use debt rather than equity, thin capitalisation rules are better enforced and are more

effective in Italy, rather than in US, so that the excessive resort to debt does not act as an income shifting incentive. In support of this argument, it is important to note the current change of the US corporate tax system from a worldwide basis to a territorial one. The Tax Cuts and Jobs Act, among many changes, is also affecting thin capitalisation rules: net interest expenses can be deducted only to the extent of 30% of "adjusted taxable income" (very similar to EBITDA), which is basically the same rule that is applied in Italy. This rule will get even more strict starting from 2022, when adjusted taxable income will be similar to EBIT (Nijenhuis E., Reich, Y, 2018), making the amount of deductible interests smaller. This rule substitutes the previous one, and there is no more reference to any debt-to-equity threshold. So, one of the reasons of this change may be related to the role thin capitalisation plays in incentivizing the shift of income towards tax havens, and it may be justified by the results of this study. So, the fact that a significant association between thin capitalisation and tax haven utilization is not found, which suggests that thin capitalisation does not act as an income shifting incentive, may rely in the differences in the capital structure between Italian and American firms, and can be motivated by the fact that in Italy thin capitalisation rules seem to work better. Furthermore, it has been said that, in Italy, banks play a relevant role with respect to the financing decisions of firms, so that they have the possibility to be in stronger relationships with the corporate sector. This gives banks greater incentives to be involved in business operations and monitor management conduct, in order to avoid any illegal behaviour or breaking the law. As a consequence it can be argued that, capital structure characteristics and preference over debt by Italian companies, which translate into a monitoring role of banks, may act as a form of control that prevent management to engage in illicit behaviours, including manipulation of transfer pricing and the use of tax havens for tax purposes. It follows that thin capitalisation does not act as an income shifting incentive to incorporate subsidiaries in tax haven countries for Italian multinationals.

10. Conclusions

This work has conducted an analysis of transfer pricing and income shifting phenomena, and has addressed many interesting challenges that the modern economy poses both to companies and policy makers. In a world economy characterized by the increasing relevance of multinational companies, where intra-firm transactions represent an important share of import and export among countries, double taxation and profit shifting phenomena are of increasing concerns for regulators and policy makers. In light of these facts, a detailed analysis of transfer pricing regulation and practices has been conducted. Importantly, the arm's length principle, which is at the heart of the OECD transfer pricing regulation, has been questioned, and an alternative approach has been proposed: the global formulary apportionment. The arm's length principle tries to artificially create a competitive market within multinational companies, where transactions deviate from competitive market assumptions. It tries to treat related companies as independent companies, in order to ensure parity with respect to taxation. However, the intrinsic problem is that relationships between related parties are different from those between independent companies. The mentioned alternative approach tries to overcome this problem by looking at multinationals as single economic units: the aggregated profit is allocated among group members on the basis of a series of allocation keys. The underlying rationale would be to allocate profit among jurisdictions according to measurable physical presence of multinationals in that specific jurisdiction. However, the OECD explicitly rejects this approach, because it would require international coordination for its implementation, that may be very challenging to pursue. The OECD, over the years, has addressed the transfer pricing problem by introducing 5 transfer pricing methods. The last two, so called transactional profit methods, try to solve some of the problems that may arise in the application of the arm's length principle, in the nowadays economy, where transactions' participants contribute more and more with unique and valuable assets or functions. Basically, they allow taxpayers to apply the arm's length principle, even when appropriate comparable

transactions can not easily be found. All methods are analysed and described in depth, and advantages and disadvantages of each of them are identified and discussed. The OECD dedicates a relevant part of the Transfer Pricing Guidelines to the comparability analysis, that is the most important part of a transfer pricing analysis, which in turn includes the functional analysis, that aims at identifying the best transfer method to use according to the specific circumstances of the case. The current features of the world economy, increasingly characterized by the presence of intangible assets, and new forms of firms' organisations, are making the application of the traditional transfer pricing methods more challenging. For these reasons, transactional transfer pricing methods may represent a more suitable alternative for multinational companies, because they do not require specific comparable transactions as reference, which may be very difficult to find for highly integrated transactions or characterized by the presence of intangibles.

The study then focuses on income shifting incentives and tax havens. An analysis of the association between a series of income shifting incentives and tax haven utilization by Italian multinational companies is proposed. Richardson and Taylor (2015) have already conducted this type of analysis in the American scenario, and have found a positive and significant association between several income shifting incentives and the incorporation of subsidiaries in tax haven countries by US multinationals. The numerous differences between the Italian and American economic scenarios have encouraged the implementation of this study in the Italian context, in order to test whether the same income shifting incentive act in the same way and have the same influence over Italian multinational companies too. The different corporate taxation system between the two economies is one of the main factors to consider: US has always been a worldwide taxation system, and only recently is moving towards a territorial taxation system, which is already in place in most of the OECD countries, including Italy. Ownership and control structure differs between the two countries: US can be categorized as an outsider system, where ownership is more dispersed and firms resort to capital markets to fund operations, while Italy is categorized among the insider

systems, characterized by concentrated ownership and dependency on debt as source of finance. Investments in intangible assets is also another relevant difference that needs to be considered. US is notably among the countries where corporations are heavily and increasingly investing in intangibles and playing leading roles in the knowledge-based economy. Intangible investments are outpacing tangible investments in US, while Italian corporations rely more on physical assets, that still represent the bigger share of total investments. In Europe, Italy is among the last countries in terms of investments in intangible assets. Finally, by looking at foreign direct investments, it is possible to say that US is more international than Italy. American firms have a higher degree of multinationality: foreign direct investment outward stock as a percentage of GDP is 40.2% for US multinationals, and 29.5% for their Italian counterparts, which clearly means that American firms have a higher tendency to invest abroad. In light of all these considerations, the association between thin capitalisation, use of intangibles, multinationality and tax haven utilization has been studied in the context of Italian multinational companies. Similar to the US study, a positive and significant association has been found between intangibles, multinationality and tax haven incorporated subsidiaries. This is consistent with the assumption that firms that invest more in intangible assets have more opportunities to engage in manipulation of transfer prices, because of the intrinsic problems intangibles pose in terms of valuation, and the difficulty to test the arm's length nature of transactions that involve intangibles. Also, companies with higher levels of multinationality have higher opportunities to be involved in cross-border transactions and can more easily exploit differences in taxation across different jurisdictions. However, differently from the US study, the association between thin capitalisation and tax haven utilization by Italian multinationals has not been found to be significant. This can be explained by looking at the different thin capitalisation rules implemented in the two countries, and one conclusion can be that in Italy they work better, and thin capitalisation does not act as an income shifting incentive for Italian multinationals. In support of this, the Tax Cuts and Jobs Act is reshaping the American corporate taxation system and among the

several changes there is also a change in the thin capitalisation rules, which will be more aligned with some other OECD countries, including Italy. Also, the monitoring role of banks in the Italian economic scenario, may explain the weak association between thin capitalisation and tax haven utilisation, since managers may be prevented from acting illegally and breaking the law, also with respect transfer pricing.

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