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Research Article

Tax havens and transfer pricing intensity: Evidence from the French CAC-40 listed firms

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PUBLIC INTEREST STATEMENT

This paper discusses the phenomena of profit shifting by corporations for the purpose of paying less taxes. It concentrates on the impact of intangible assets, firm size, effective tax rate, and leverage on the intensity of transfer pricing in French publicly listed firms in the CAC-40. The results show that firm size and leverage are positively associated to transfer pricing intensity while intangible assets and effective tax rate have a negative impact.

1. Introduction

Many tax-related scandals were made public in the past few years involving some of the major corporations such as Amazon, Google or Starbucks (Barford and Holt 2013). These corporations were accused of practicing tax avoidance on an industrial scale by shifting profits to lower-tax jurisdictions through transfer pricing techniques. According to the OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations[1], the notion of “transfer price” relates to the monetary value attached to the cross-border transactions between related parties of a consolidated group but established in different jurisdictions. The transactions may relate to any type of intragroup business such as: transfer of tangible assets (buying/selling of goods and merchandise) or intangible assets (e.g. concession of trademarks), services provision (e.g. res nt), or financial yments). By nature, t ween related f evelopment of intrag x authorities around t oment (OEC worldwide total tra

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related party receiving the payment. At the heart of the international taxation of MNEs, transfer pricing represents the central challenge both for corporations and for tax authorities worldwide. Firms can take advantage of discrepancies in national's taxation systems and rates either by:

- Making the entities in lower tax rates charging the related entities in higher tax rates for goods or/and services to shift profits to a more friendly-tax jurisdiction;
- Manipulating the value of transfer prices: over-valuing payments to higher tax rates countries and under-valuing transactions to lower tax rate countries.

On the contrary, States pursue their objective of attracting the largest taxable base in their own jurisdiction. The challenge is not only concentrated between a taxpayer and a tax authority but rather between a multinational group and at least two different tax authorities. Therefore, transfer pricing management aims to avoid two issues at the same time. First, the artificial localisation of results and expenses to minimise the tax expense. Second, the risk of double taxation in two different countries. The transfer pricing guidelines are based upon the "arm's length principle", ruled by the Article 9 of the Model Tax Convention[2] published by the OECD. Transfer prices should be determined as if they were pertaining to a transaction between two independent parties on a free market. Indeed, if a transaction has to be made between two independent entities, the intragroup exchanges would systematically be affected with the market price therefore revealing, in virtue of the classic economic theory, the "right" and fair price. When the arm's length principle is not respected, it is allowed for the State authority to reintegrate all or part of the transfer price to its profit's taxable basis.

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- Following an adjustment, the tax authorities can decide on allocating the taxation power to the different authorities concerned and settle on an out-of-court, amicable agreement.

The "right" determination of transfer prices is a complex step. The OECD presented different valuation methodologies of transfer prices such as Traditional Transaction Methods (CUP method, Resale price method, Cost plus method), and Transactional Profit Methods (Transactional net margin method, Transactional profit split method). Although this study does not focus on explaining the differences between the generally accepted methods to determine an arm's length price, however, the introduction of these different methods in the transfer pricing would lead us to a few research questions this paper will examine:

- Can corporations lower its effective tax rate and increase its transfer pricing aggressiveness using hard-to-value intangible assets?

- Is the size of the firm plays a role in engaging in such aggressive practices as we have seen with Apple Inc. or Starbucks?

Accordingly, the purpose of this study is to determine the impact of intangible assets, firm size, effective tax rate, and leverage on the transfer pricing intensity of French listed firms in the CAC-40 index. We collect data for the period from 2012 to 2015 and apply appropriate regression analysis controlled for time fixed-effects. The results of the study explain that intangible assets and effective tax rate negatively effects transfer pricing intensity while firm size and leverage positively effects transfer pricing intensity. This stu of authors' knowled

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multinational and multidivisional structure, described as the “M-form”, opposed to the traditional “U-form” in which top management is in direct relation with functional divisions—e.g. finance, logistics, etc.,—of the group. In the traditional U-form, employees evolve “on their own” in their department and do not benefits trans-functional expertise or collaboration. This organisational structure is therefore limited in many ways: such as difficult innovation processes, limited performance assessment, strictness of production processes, possible loss of control when managing complex and/or foreign activities. The M-form meanwhile is referring to a parent firm setting the strategy guidelines in the long run and exercising control over the assets used in its affiliates firms. An “M-structured” group is comprised of business units, each one managing core functions for its operations. The purpose of such structure is to optimise the management of assets on a divisional basis and therefore on a group level.

In accordance with those evolutions, MNEs are comprised of a multitude of operational and non-operational entities, holdings and sub-holdings located in various jurisdictions —some of them being considered as tax havens. In their World Investment Report[3] in 2016, the United Nations Conference on Trade and Development (hereafter “UNCTAD”) examines the increasing complexification of MNEs’ structures and disclose that the first hundred corporations each detain on average 500 subsidiaries located in 50 different jurisdictions. The report also reveals that each of those MNEs own more than 70 affiliates in friendly-tax jurisdictions or tax havens. Until recently, those MNEs were considered as Nation’s jewels, carrier of a State’s image and as a model every firm in the world should follow. But in the beginning of the twenty-firstcentury, they became public and tax authorities’ targets because of several tax outrages. Today, everyone is aware th s and many have exa d research s effect on the tax b based on an indire

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industry, level of development of the host country, etc. Therefore, these factors are used to estimate the counterfactual level of profits, i.e. the profits which would have been observed if no shifting was possible. The initial approach by Hines and Rice (ibid.) used country-by-country aggregated data on U.S.-based MNEs to isolate the effect of tax rates variations between the parent firm and its subsidiary on the reported earnings of the affiliate. A few years earlier, Grubert and Mutti (1991) also performed one of the founding research on the topic. Indeed, the results of their U.S.-based cross-sectional panel data explained that U.S. multinational corporations tend to import and export more from their affiliates in low-tax jurisdictions where its investment was also greater. To continue on U.S. focused researches, we can refer to the work done by Grubert, Goodspeed, and Swenson (1993) for evidence of profit shifting by MNEs to more tax-friendly jurisdictions or known tax havens. Concerning European-based researches, we can mention the work of Huizinga and Laeven (2008) which study the spread of profits of European MNEs.

Further, the results presented by Mutti and Grubert (2009) show that the U.S. affiliates' earnings and profits increased way more than the royalties made to their U.S.-based parent entity and that R&D operations were a major determinant of settling in low-tax jurisdictions. As we mentioned in the introduction, the global economy has shifted to a dematerialized form and it raises one of the major challenges for transfer pricing. The golden rule being the arm's length principle, firms must find comparable transactions to price their own, but it is much more difficult when dealing with highly valued intangible assets rather than common goods for which transfer pricing managers can use public data or private databases which gather comparable. It is also a great challeng ecause of the lack ore, as those valuatio ent to take advanta e assets betwee , 2011).

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corporations' value is based on its intangible assets which often lead to competitive advantages. Some types of such valuable easily transferred assets may lead to tax planning and raise transfer pricing issues. Indeed, some multinational groups may allocate their intangible assets to lower-tax jurisdictions, generating royalties or license-fee from other entities of the group in higher-tax countries benefiting from such assets allowing profit shifting. The hypothesis is supported by a study which empirically observes a negative relationship of royalty flows on taxation (Dudar, Spengel, & Voget, 2015). Another study by Dischinger and Riedel (2011) on the geographical allocation of intangible assets in MNEs empirically demonstrates that lower a subsidiary's corporate tax rate relative to other affiliates of the multinational group the higher is its level of intangible asset investment. Accordingly, we develop our first hypothesis:

H1:

Intangible assets are positively associated with transfer pricing intensity.

The firm size can be defined as a combination of several factors such as number of employees, amount of sales, number of subsidiaries, profitability, production capacity, capital intensity, and stock valuation. Considering that large corporations perform more operations, on a larger scale, often worldwide, and may have affiliates all over the world, they are able to take advantage of different tax rates where they perform business operations. Indeed, MNEs may take advantage of their beneficiary and loss-making subsidiaries by setting a strategy which would make the latter entities in deficit to be the ones in high-tax countries and the profit makers in lower-tax jurisdictions. According to Scholes, Wilson, and Wolfson (1992) international profit shifting is mainly used by
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hurt their business and operations. But considering their small sample of listed firms in Sri Lanka we may challenge these findings as our paper is analysing much larger corporations listed on the CAC-40. Accordingly, we develop our second hypothesis:

H2:

Firm size is positively associated with transfer pricing intensity.

A consolidated group must consider the differences in tax rates in each jurisdiction where it performs economic activity, therefore, there are differences between global strategies that would be implemented in accordance with a local tax strategy. In other words, the optimal solution for the group may not be the optimal one for its related entities if considered as sole entities. The impact of tax can be measured by calculating the effective tax rate (ETR) which can provide information on whether the MNEs used tax avoidance techniques to minimise its tax charge. According to many authors, the effective tax rate can be used to measure and assess the efficiency of tax management in a group (Menchaoui, Jean-Luc, & Mohamed Ali, 2017; Rego, 2003; Shevlin, 1999) as the intra-group flows will greatly affect the ETR. However, there are differences in the literature on the way of calculating this ratio. Some researchers such as Gupta and Newberry (1997) do not incorporate deferred tax in the numerator ratio. Rego (2003) also justified this choice of not considering deferred tax to better represent the corresponding tax charge to the fiscal year analysed. While some other authors incorporated it in their ratio considering all taxes may relate to performed operations. In this research, deferred tax is not included in the numerator because these charges may reflect taxes due in the long-run future and therefore the tax charge will not accurate ng fiscal year as ally test the impact p our third hypothe

H3:

Effecti

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firm's value exceeds the value of an unleveraged firm by the value of tax savings allowed by the tax deductibility of interests. However, in real and imperfect capital markets, imperfections arise such as informational asymmetry, incompleteness and the weakness of contracts' implementation. Based on agency theory, the situation is that where a principal (tax authority) wants to attract the most income possible from taxation and the agent (corporation), on the contrary, wants to lower this taxation (Fama, 1980). Therefore, leverage can be used to reduce taxes paid through increased deductible interests costs, lower profit, and lower ETR. In their research study, Richardson and Lanis (2007) stated than the more a firm will finance itself by debt, the lower will be its ETR. Taylor, Richardson, and Lanis (2015) also demonstrated empirically that debt-financing has a positive relationship with tax avoidance. Accordingly, we develop our fourth hypothesis:

H4:

Firm leverage is positively associated with transfer pricing intensity.

Table 1 presents the variables, their measurement proxies, and the expected relationship of explanatory variables with transfer pricing intensity.

Table 1. Variables, indicators, measurement proxy and predicted sign

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3. Data

The sam ndex during the p blicly listed firms. F le because of mater ng estimate etreated or suspend lcatel S.A. on the 2 ur sample.

over the period of 4 years. The sample period was chosen represents the in-between period right after the global financial crisis and the OECD's BEPS projects and guidelines implementation. The data are hand-collected from each "Document de Reference" for each firm in our sample and for each year.

3.1. Econometric model

The aim of the study is to examine the impact of intangible assets, firm size, effective tax rate, and leverage on the transfer pricing intensity of listed firms in French-based index CAC 40. Therefore, we develop the following regression model:

$$TPIit=\alpha0+\beta1INTANGit+\beta2SIZEit+\beta3TAXit+\beta4LEVit+\alpha t+\varepsilon it \quad (1)$$

where

Indicator	=	Definition
α_0	=	= Constant
TPI_{it}	=	= Transfer Pricing Intensity
$INTANG_{it}$	=	= Intangible Assets
$SIZE_{it}$		
TAX_{it}		
LEV_{it}		
α_t		

ε_{it}	=	= Error term
i	=	= Firms 1–33
t	=	= Years 2012 − 2015

3.2. Estimation methods

We apply simple OLS and time fixed effects regression techniques to estimate Equation(1). We also test our models against multicollinearity and find variation inflation factor no greater than 10 (see Table 2 for reference)(Ott & Longnecker, 2015). Finally, we run Pesaran CD test and found cross-sectional dependence. Therefore, we correct the standard error using Driscoll and Kraay's standard errors which is robust to panel dependence (Al-Gamrh, Ku Ismail, & Al-Dhamari, 2018; Hoechle, 2007).

Table 2. Correlation matrix

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4. Emp

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Table 3 p escriptive statistics standard devia imum and maxi .592. Concern and maximu 71. The effective ch is lesser than the in our

recognition of deferred tax in some countries[5]. The maximum ETR in our sample amounts to 67.90%. The median is of 28.50%, quite close to the 3313% rate. For the leverage, we observe that the debt to equity ratio greatly vary from 0.382 to 7.841.

4.2. Regression results

To investigate the impact of the independent variables on transfer pricing intensity (Equation-1), we apply regression techniques. The following Table 4 shows the results of variations in transfer pricing intensity as a result of variations in the explanatory variables. Our regression models explain 7.2% to 7.6% variations in transfer pricing intensity due to Intangibility, firm size, effective tax rate, and leverage. Model 1 includes four explanatory variables while model 2 includes four explanatory variables along-with time fixed effects.

Table 3. Summary statistics

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Table 4. Regression results

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Table 4 s with transfer t support our hypothe nal or more intra-gro the results are supp oteli, and Maina or et al. (201 other plausible evel of corporat eir intangible properti therefore reducing er possible

In this article

such as intellectual property. As firms tend to reallocate their intangible assets in low-tax jurisdictions due to the difficulties of valuation and finding comparable to price transactions at arm's length, such an amount would be diluted into the consolidated financial statements and the individual entities' statements located in tax-friendly country then should be analysed and compared to other group's entities to assess the actual proportion of such practices. By doing this, firms can also benefit from the opportunity to shift profits offshore while paying royalties to their affiliate owning such as a patent right.

Further, we observe that firm size is significantly positively associated with transfer pricing intensity of the French firms suggesting that as a firm grows and develops internationally, it automatically increases the number and amounts of intra-group transactions to and from various locations (hypothesis-2). According to Rego (2003) MNEs having a large number of entities have a lower effective tax rate than those with less entities. This result is supported by a number of empirical previous studies (Cecchini, Leitch, & Strobel, 2013; Richardson, Taylor, & Lanis, 2013). A common conclusion of these studies is that the large MNEs may secure more long-run incoming cash flows than a smaller group. Therefore, creating higher profits with larger number of entities around the globe and providing them the opportunity to perform tax optimisation or even tax evasion.

We hypothesized effective tax rate to have a negative impact on transfer pricing intensity, meaning the lower the ETR, the higher MNEs are engaged in transfer pricing transactions. The results of the regression analysis show a coefficient of −0.042* (model I g that MNEs with a lo pricing transact 3). Previous studies o ower its tax charges. engaging in transfer orted earn nple (Richard lso tend to lower its e political costs wh may be involved ofile not to

transfer pricing intensity (hypothesis-4) explaining that French firms listed on CAC-40 use leverage to reduce their taxes paid through increased deductible interests costs, lower profit, and lower ETR.

5. Conclusion

The transfer pricing intensity of MNEs is one of the major interests when analysing the economic significance and the stakes of profit-maximizing firms for governments. Therefore, the identification of the practices is particularly important and the analysis of the variables effecting the transfer pricing intensity of MNEs is of academic and public usefulness. The study applied an innovative approach, as it is based on a large and tedious hand-collected data of French CAC-40 index, to investigate the determinants of transfer pricing intensity. The study reviews the relevant literature thoroughly and develops four hypotheses based on literature and previous empirical studies. The study tests these four hypotheses using linear regression controlled for time-fixed effects. The results of the study explain that the increase in intangibility and effective tax rate decrease the intensity of transfer pricing in French firm while increase in firm size and leverage increase transfer pricing intensity. The study explains supports the results in the light of previous empirical evidence.

This research project also has its limitations. Indeed, the rather small sample size cannot allow to extrapolate our results to all the French firms and some tax adjustments inflicted to some of the MNEs in our sample might have biased some of the correspo re for the most pa hose variables ay as in an America of transfer pricing a d a lot more detai enue Servi e informat heir study in the Fren t may be possible studies of greater

Future studies should examine multinationality and tax havens utilisation as it was empiricaiiy demonstrated that those factors are positiveiy associated with transfer pricing intensity by Taylor and Richardson (2012. Taylor et al., 2015) if the access to such data is possible. In the U.S. and Australia and made public by the IRS and the Australian Taxation Office, it is not yet publicly available for French corporations. Future researches may also concentrate on analysing such questions in developing countries.

Correction

This article has been republished with minor changes. These changes do not impact the academic content of the article.

Additional information

Funding

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Notes

1. First implemented in 1979 and continually revised and supplemented until the latest version dated 19 May 2017.

2. OECD (2003), “Article 9”, in Model Tax Convention on Income and on Capital: Condensed Version 2003, OECD Publishing, Paris, https://www.oecd.org/tax/treaties/1914467.pdf.

3. UNCTAD, World Investment Report, 2016, Investor Nationality: Policy Challenges.

4. Definition by the « Autorité des Marchés Financiers » (27 May 2013): “Any company with securities admitted to trading on a regulated market or an organised multilateral trading facility may prepare an annual registration document describing the company’s organisation, business, financial position, earnings and prospects. The registration document provides information and acts as a communication tool by supplying financial analysts, institutional investors and individual shareholders with the information that they need to make informed judgements about the company’s business, financial position, cial and accounti n of the company

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Abstract
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3. Data and methodology
4. Empirical results
5. Conclusion
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