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## Tax Evasion and Avoidance by Financial Engineering: Implications for Policy

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Tax Evasion and Avoidance by Financial Engineering:  
Implications for Policy

Anastasia Nesvetailova, Andrei Guter-Sandu and Ronen Palan

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# **Tax Evasion and Avoidance Through Financial Engineering: Implications for Policy**

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October 2018

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## Executive Summary

1. Financial innovation generally, and financial derivatives specifically, render these instruments particularly fertile for engaging in aggressive tax planning. This is due to the fact that derivatives can represent any economic position whilst changing its transactional form. Typically, derivatives can be deployed so that the contract falls under a different tax regulation than the one the original economic position called for. This pliability, together with the notorious complexity and obscurity of derivative transactions, makes these instruments ideally suited to be used in tax abusive strategies, with minimum traceability and relative impunity. In this respect, the situation in the EU is not different from the US.
2. There has been a number of important academic and high-profile political investigations of the use of options and swaps in the US context. Neither in academia, nor in the policy domain however, have there been an equivalent set of studies in Europe. In fact, tax optimisation and most specifically, tax deferral, continue to be the ultimate targets of the deployment of sophisticated financial instruments by firms and banks in Europe.
3. The reporting systems of derivatives in the US and in Europe remain to be inconsistent, asymmetric, and indeterminate, creating a fertile ground for arbitrage. The situation appears to be worse in Europe due to the discretion afforded by the EU to individual Member States in the taxation of financial instruments reported by EU companies.
4. There is a gulf between the fiscal and the monetary realms, replicated in the academia and in the regulatory infrastructure. But this is not

replicated in the world of finance. Quite on the contrary, in real life, financiers, lawyers, accountants and tax experts tend to work together in teams, in large banks as well as in smaller boutique asset management firms. As to be anticipated, such teams take full advantage of existing conceptual, analytical and regulatory 'blind spots'.

5. The new, post-2009 EU financial regulatory environment has not addressed the issue of financial engineering in aggressive tax planning purposes. While there is now a general recognition that financial innovation does enable tax avoidance, the EU's position on the taxation of derivatives deployment by companies remains highly varied across the bloc, with technical expertise typically provided by the financial sector itself, and with many existing provisions allowing considerable discretion to the companies and member states.
6. Initiatives like OECD's Base Erosion and Profit Shifting (BEPS) and EU's Aggressive Tax Planning Indicators (ATPI) are relatively comprehensive in their aims to tackle some of the pitfalls of MNCs straddling heterogeneous national taxation systems. However, they do not focus on the opportunities created by financial engineering with regards to tax avoidance or evasion.
7. Still, most tax authorities have increased the resources devoted to fighting derivative-facilitated tax abuse by MNCs. However despite the building momentum, regulatory reform has been slow to catch up with developments at the intersection between financial engineering and aggressive tax planning. As a result, regulatory authorities have remained somewhat inadequate in responding to concerns expressed by governmental departments and tax experts.

8. A more dynamic regulatory reform therefore, has been wanting. While the politics of vested interests go some way in explaining the regulatory lag, we find that the lag and resultant blind spots in the EU specifically, may be the outcome of two different philosophies of regulation of financial and real sectors in the US and the EU.

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## Introduction

Post-ante investigations into the financial meltdown of 2007-9 revealed that banks, including largest financial houses in the US, had been developing and employing sophisticated financial instruments in facilitating tax evasion and avoidance. In 2011, the Government Accountability Office (GAO) in the US released the first, and so far the only, in-depth analysis of the use and potential abuse of financial instruments for tax avoidance by the US corporate sector. GAO established that financial derivatives are the *main* tools multinational corporations (MNCs) employ for tax noncompliance purposes (GAO, 2011). The majority of market actors we interviewed tend to agree with GAO's findings, believing that sophisticated financial instruments are the biggest ticket item of tax abuse.

In light of increasingly recognised importance of financial innovation in enabling tax abuse, this study was intended to answer the following questions:

1. Whether derivatives and other financial instruments are used as techniques of tax avoidance and evasion by the European banking and corporate sectors as well.
2. If yes, whether there might be material differences in the type, range or mix of techniques of financial engineering that are used by the EU banking and corporate sector, due to divergent regulatory environment between the US and EU.
3. Whether the OECD initiative on Base Erosion and Profit Shifting (BEPS) or more recent EU-funded research into sophisticated aggressive tax avoidance schemes is tackling the problem of tax abuse via sophisticated financial engineering.
4. Whether EU post-crisis derivatives regulations are (a) intended, or (b) likely to address some of the loopholes used of financial engineering enabled tax avoidance and evasion.



5. Whether rapidly emerging new financial technologies generate any additional opportunities for tax evasion or avoidance.

To answer these questions we relied on three sets of sources:

First, we examined what is admittedly a relatively meagre set of literature on the link between financial instruments and tax avoidance, a literature that has been focused by and large, on the US scene.

Second, we conducted a series of semi-structured interviews, primarily in the financial centres of London and New York, with a variety of stakeholders, including bankers, traders, corporate lawyers and specialists in structured finance, corporate accountants, asset managers, hedge fund staff, as well as ex-employees of any of the above. We also interviewed some clients of private banking and the wealth management industry<sup>i</sup>.

Third, we examined the series of studies and regulatory initiatives, including OECD's BEPS, the EU's ATP programme, the EU's derivative regulations of 2013/14 and the financial transactions tax (FTT) proposals, in order to ascertain whether any of the above is likely to affect the use of sophisticated financial instruments as techniques of tax avoidance.

Our conclusions can be summarised as follows:

1. There are inherent characteristics pertaining to financial innovation, specifically concerning the use of derivatives that make these instruments particularly fertile for engaging in aggressive tax planning practices. This is due to the fact that derivatives can represent any economic position whilst changing its transactional form. Typically, derivatives can be deployed so that the contract falls under a different tax regulation than the one the original economic position called for. This pliability, together with the notorious complexity and obscurity of derivative transactions, makes these instruments ideally suited to be used in tax abusive strategies, with minimum traceability and relative impunity. In this respect, the situation in the EU is not different from the US.

2. There have been a number of important academic and high-profile political investigations of the use of options and swaps in the US context. Neither in academia, nor in the policy domain however, have there been an equivalent set of studies in Europe. In fact, tax optimisation and most specifically, tax deferral, continue to be the ultimate targets of the deployment of sophisticated financial instruments by European firms and banks.
3. The reporting systems of derivatives in the US and in Europe remains to be inconsistent, asymmetric, and indeterminate, creating a fertile ground for arbitrage. The situation appears to be worse in Europe due to the discretion afforded by the EU to individual Member States in the taxation of financial instruments reported by EU companies.
4. The new, post-2009 EU financial regulatory environment has not, as yet, addressed the issue of financial engineering for aggressive tax planning purposes. While there is a general recognition that financial innovation does enable tax avoidance, the EU's position on the taxation of derivatives deployment by companies remains highly varied across the bloc, with technical expertise typically provided by the financial sector itself, and with many existing provisions allowing considerable discretion to the companies and member states. This finding is confirmed by our interviews with corporate accountants of EU-based companies and senior partners in law firms servicing capital markets.
5. Initiatives like OECD's Base Erosion and Profit Shifting (BEPS) and EU's Aggressive Tax Planning Indicators (ATPI) are relatively comprehensive in their aims to tackle some of the pitfalls of MNCs straddling heterogeneous national taxation systems; yet they do not

focus on the opportunities created by financial engineering with regards to tax avoidance or evasion.

6. Notwithstanding this oversight, most tax authorities have increased the resources devoted to fighting derivative-facilitated tax avoidance by MNCs, and not one single tax authority has decreased resources (Borstell and Hobster, 2014). But despite the building momentum, we find that regulatory reform has been slow to catch up with developments at the intersection between financial engineering and aggressive tax planning. As a result, regulatory authorities have remained somewhat inadequate in responding to concerns expressed by governmental departments and tax experts. A more dynamic regulatory reform therefore, has been wanting. While the politics of vested interests go some way in explaining the regulatory lag, we find that the lag and resultant blind spots in the EU specifically, may be the outcome of two different philosophies of regulation of financial and real sectors in the US and the EU.

## **1. Financial Innovation and Tax Abuse: Theory and Evidence**

Broadly, academic and policy understanding of the role of financial instruments and taxation falls into two main approaches.

First, there is considerable research into the relationship between finance and tax abuse at the level of corporate funding structures. Such schemes typically deploy simple financial techniques such as 'thin financing', hybrid mismatch and arbitraging loans, bonds, dividends and the like as tax avoidance techniques. These have been examined extensively by researchers and regulators alike and were not, therefore, investigated further by us.

Second, a set of literature has evolved recently focusing on the role of financial derivatives in the tax planning by financial and non-financial corporations. Of this, the work of Michael Donohoe (2015a, 2014, 2011) stands apart. Donohoe conducted a series of studies of US corporations showing that many of those investigated attained reductions in current taxes and cash taxes paid in the four years subsequent to deployment of derivatives. He established that these benefits increase with the magnitude of derivatives employed; they result mainly from tax deferral opportunities, and are not driven by effective hedging of economic risks (Donohoe 2011: 31). Further, Donohoe and colleagues estimate that Special Purpose Entities (SPEs) facilitate over \$330 billion of incremental cash tax savings, or roughly 6% of total U.S. federal corporate income tax collections during 1997-2016 (Demere et al., 2018). In his later work, he estimated the corporate tax savings from financial derivatives amounts to between 3.6 and 4.4 percentage point reduction in three-year current and cash effective tax rates (ETRs). The decline in cash ETR equates to \$10.69 million in tax savings for average firm and \$4.0 billion for the entire sample of 375 new derivatives users. Of these amounts, \$8.75 million and \$3.3 billion,

respectively, are incremental to tax savings that theory suggests are a byproduct of risk management (Donohoe, 2015b).

Since February 2015, the European Parliament has set up special committees with the remit of inquiring, broadly, into taxation issues affecting the European Union. Having evolved through four consecutive iterations, these committees have mostly an advisory role, and their mandate includes writing a final report based on a number of supporting analyses, which also comprises a set of recommendations for the European Parliament's consideration<sup>ii</sup>. Analyses supporting the three reports published to date (with the fourth one from the TAX3 committee in the pipeline) are more akin to case studies forming the basis for the grander report.

Among them, however, a study on "The Role of the Financial Sector in Tax Planning"<sup>iii</sup> does stand out. It is only European examination of the manner in which financial engineering is being used for aggressive tax planning purposes. It was prepared by TAXE2 and its insights were partly included in the final report which was presented to the European Parliament. The study itself reviews the basic mechanisms that facilitate tax avoidance or evasion, specifically by MNCs and high net worth individuals (HNWIs). In particular, it highlights two conduits: the exploitation of mismatches in international taxation and financial sophistication; and the exploitation of the qualification of corporate cash flows. These mechanisms are being facilitated by banks, which are well-versed and equipped, through expertise but also through vast networks of cross-jurisdiction entities, to tailor-make "extremely complex financial securities [that] can respond to any conceivable tax planning demand" (p. 7).

The EU is beginning to recognise, therefore, some of the functions sophisticated financial products are playing in supporting tax avoidance. But current research is only at an early stage.

In our analysis, current literature, scant as it is and including the work of Donohoe, fails to differentiate sufficiently between two set of practices. One set of practices centre on what can be described as *balance sheet arbitrage* in the corporate realm. Here, derivatives and other sophisticated financial instruments are deployed to add layers of sophistication upon other known practices including cost inflation, balance set arbitrage and manipulation of the economic impact of an asset held by the firm. Typically, these techniques furnish the more basic (and often illicit) practices identified by the OECD's research on BEPs, (including invoice manipulation, techniques of shifting and cost inflation).

The other set of techniques concern practices within the financial industry itself. Here, financial innovations and engineering are deployed at the very inception of a business transaction, with tax planning and minimisation being one of the key determinants (rather than furnishings) of the financial structure. The use of derivatives here falls within the highly technical set of problems of taxing financial instruments. From the very start therefore, financial instruments are designed, with one eye to the tax exposure of the asset. These practices have remained largely outside the scope of current academic research, and have so far attracted scant attention of national and international authorities. As a result, the lines dividing aggressive and non-aggressive forms of tax planning in finance have not been examined closely.

We were able to identify only one post-2009 study that linked financial innovation with regulatory arbitrage (Polillo, 2011), alluding to tax arbitrage as well. The only quantitative estimates of the role of financial instruments (derivatives) in facilitating tax abuse is Michael Donohoe's PhD thesis (2011). The thesis is entirely US-focused.

## 2. The Landscape of Derivatives

A financial derivative is a contract that is based on the value of the underlying asset. The underlying asset can be anything – stocks and bonds, interest rate volatility or a natural disaster. In a way, most derivatives are specialised instruments, given that by and large they are negotiated privately and traded on Over-the-Counter (OTC) markets. These deals are inherently less transparent and less regulated, and as such entail greater risk than standardised derivatives trading on exchanges. That said, a great deal of OTC derivatives are governed by the International Swaps and Derivatives Association (ISDA) Master Agreement, which outlines the terms and conditions of the transacting parties in derivative contracts. These are only basic 'wrappers' however, the filling of which can be later changed, as fitting to the parties.

Derivatives have existed since time immemorial, yet, ever since the demise of the Bretton Woods monetary system, derivatives have become an important instrument to lubricate monetary flows throughout the world economy and mitigate financial volatility. The financial crisis of 2007-09 only effected a small dent in the derivatives market, which quickly bounced back to levels higher than pre-2007. It is estimated that today the notional value of over-the-counter (OTC) derivatives worldwide exceeds \$530 trillion, down from a peak of \$710 trillion in 2013, but up sevenfold from 'only' \$72 trillion two decades ago (**Error! Reference source not found.**).

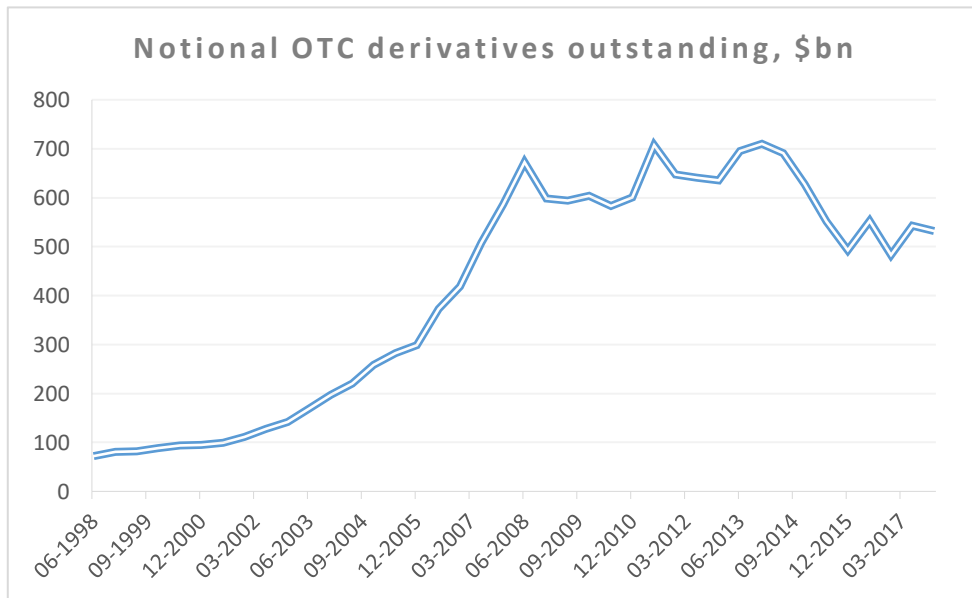


Figure 1. Source: BIS Derivatives Statistics

These figures attest to the fact that derivatives are an integral part of how MNCs manage risks and deal with intra-group monetary flows. The most common underlying by far are interest rate contracts, which represent four fifths of all OTC derivatives, and are followed by foreign exchange contracts, with 16% of all OTC derivative contracts (Figure 2).

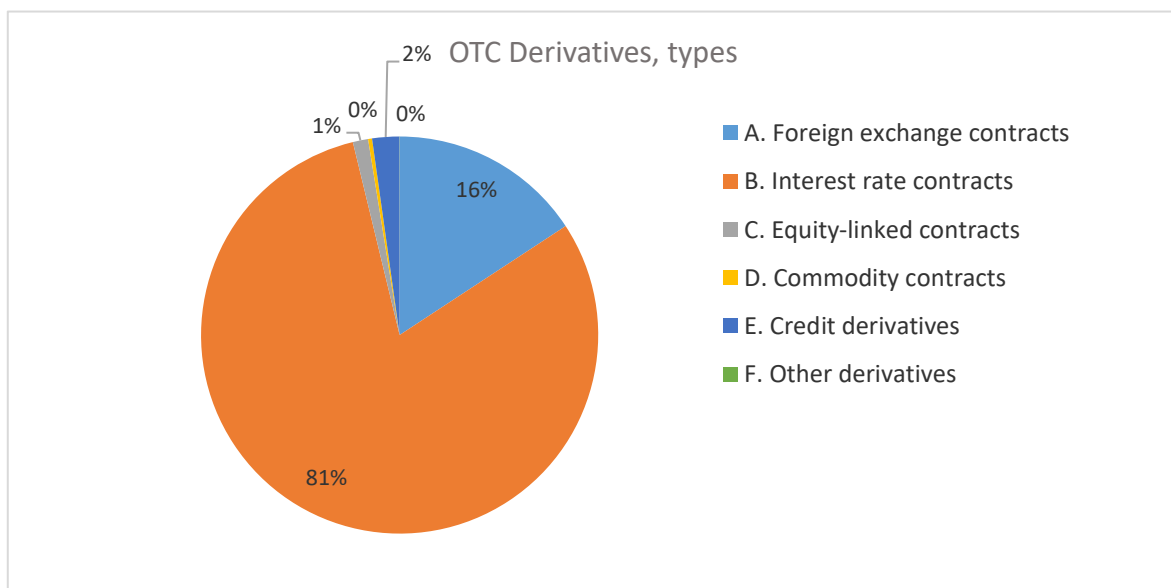


Figure 2. Source: BIS Derivatives Statistics



There are three main types of derivatives: options, futures and forwards, and swaps (Hull, 2014). Futures are usually standardised and are therefore traded in cash daily on exchanges, whereas forwards are normally privately negotiated and they are more frequently found in OTC exchanges; both involve the obligation to exchange the underlying at a forthcoming date for an explicit price.

Options provide its holder with the right, but not the obligation, to buy or sell the underlying at a set price within a stated period. Crucially, having an option on an asset allows its holder to dissociate the ownership of the asset from the ownership of the options. Something that most systems of taxation have not come to grip with.

Finally, through swaps, parties exchange particular streams of income flowing from the underlying over a predefined period. While commonly distinct, these types of derivatives can also be combined with other instruments or between themselves to create specialised instruments, like the creation of an option to enter into a swap – a ‘swaption’, or the creation of an option to enter a futures contract – a ‘futures option’ (Donohoe, 2014).

MNEs are regular and routine users of derivative contracts. It is estimated that fully 94% of all Global Fortune 500 companies employed derivatives for hedging and risk-mitigating purposes in 2009, with a maximum of 98% of financial companies and a minimum of 88% of service firms (Figure 3). MNCs use derivatives throughout the supply chain, including R&D, manufacturing, sales, and admin. Depending on their organisational structure, business culture, and risk appetite, they can employ these instruments in very distinct ways (EY, 2016).

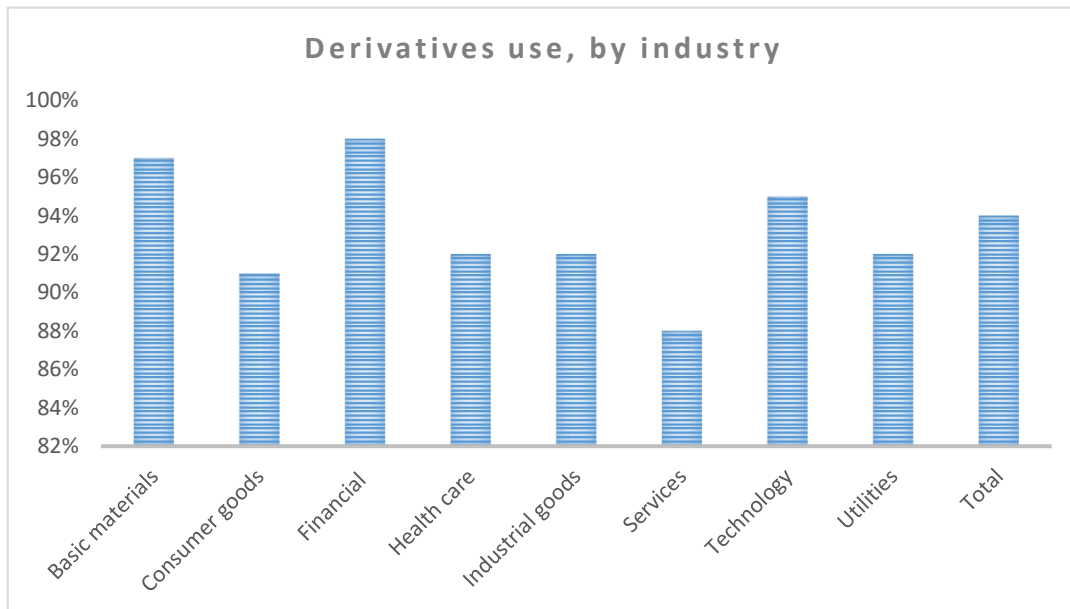


Figure 3. Source: ISDA Derivatives Survey

Given that MNEs are invested across different monetary and financial jurisdictions, a great concern that motivates the use of derivatives are risks regarding sudden changes in foreign exchange rates, interest rates, or commodity prices. The most common underlying are forex prices, with an estimate of 88% of companies using forex derivatives, 83% using interest rates derivatives, and 49% commodity price derivatives (Figure 4). There are sector specific reasons why some MNE are more inclined towards the use of particular type of derivatives as their predominant tools for risk management. While most of them use forex and interest rate derivatives, financial service companies, for instance, are expectedly more invested in credit and equity derivatives, while utilities and basic materials companies are avid buyers of commodity derivatives.

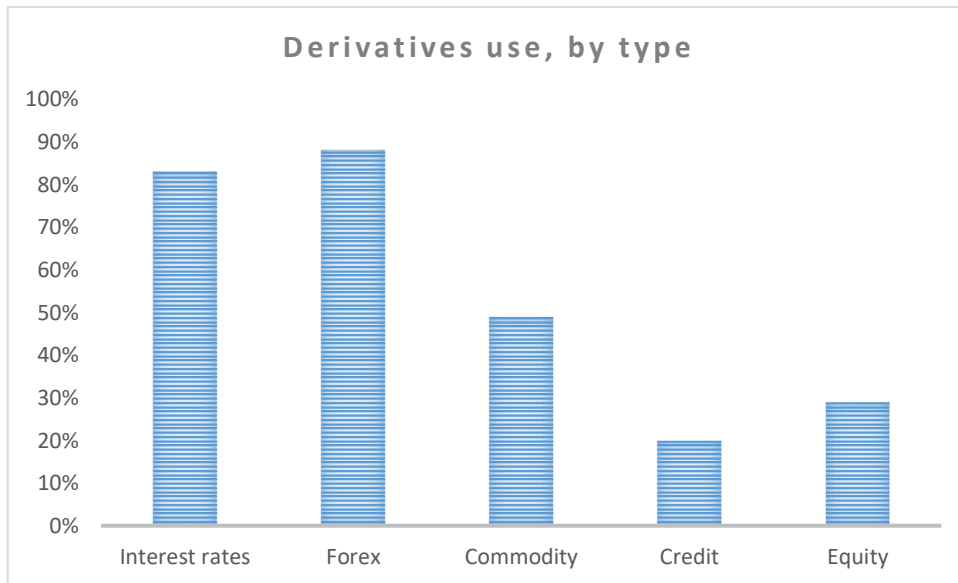


Figure 4. Source: ISDA Derivatives Survey

Regardless of the exact type of instrument used, derivatives afford ample possibilities for tax planning. This can come as a result of normal day-to-day management activities, but it can also represent a conscious attempt by particular MNCs to reduce their explicit tax rates.

### **3. The Corporate Sector: Balance Sheet Arbitrage**

The literature usually makes a distinction between hedging and non-hedging derivatives, both of which can be used by corporations in the normal running of operations, and both of which have implications upon tax obligations (Donohoe, 2014).

Hedging positions usually aim to reduce the volatility of taxable income, which can result in an overall lower tax bill. This technique is known as income smoothing. This can be due to the fact that in some countries, like the US, corporate taxes are structured progressively until a threshold-income, above which there is a constant rate of taxation. This creates a problem, especially when receiving earnings as one big chunk. In this situation, a company could smooth out its earnings over a longer period using a hedging derivative and could thus fit into a different tax bracket and reduce the effective tax rate.

At the other end of the spectrum lie the non-hedging uses of derivatives, and these generally stem from the ambiguity present at the heart of the tax treatment of derivatives. In particular, there have been three main sources of ambiguity in the approach to derivatives taxation, and they involve inconsistency, indeterminacy, and asymmetry, respectively (Donohoe, 2014, 37). Inconsistency is one of the most important aspects of the treatment of derivatives for tax purposes. Because derivatives can assume virtually any economic position whilst being clad in a different transactional form, they provide their users with the unique advantage of manipulating that cladding so as to make the derivative fall under the specific tax rule that is most fitting for them. This is the case because what matters, as far as the tax system is concerned, is the transactional form of the contract and not the economic position assumed.

In the literature, clever gaming of transactional form has been referred to as the 'cubbyhole' system – an inconsistent patchwork of rules

that emphasise form over economic substance in the tax treatment of derivatives (GAO, 2011). For instance, a firm can create a synthetic bond out of a stock by simultaneously buying a call option to buy the stock and a put option to sell the stock. If the market price of the stock goes above the strike price, the buyer can exercise the call option and buy the security for the strike price; conversely, if the market price falls under, the buyer can exercise the put option and sell the security for the higher strike price. In either of these cases, the stock essentially operates like a zero-coupon bond. This has tax implications, given that stocks do not accrue interest payment taxes and, together with the options, they are taxed at the realisation point. Similarly, a synthetic stock can be created out of a bond and two options, and it too might have a different tax treatment depending on the deductibility of taxes on interest, which could constitute synthetic expenditures that would otherwise not exist in the case of the actual possession of equity. In other words, due to the cubbyhole system, synthetic securities created through the use of derivatives can be taxed according to the transactional form they display, and not according to the economic position they replicate<sup>iv</sup>.

Synthetic instruments – i.e., derivatives that have as underlying other derivatives – add another layer of complexity when it comes to evaluating the taxation approach needed. The cubbyhole system is already relatively inadequate for making sense of the economic position and related tax treatment of derivative instruments, but layering derivatives upon derivatives implies that these hybrid instruments could now fit into several different cubbyholes, and that the appropriate one is not immediately determinable. In fact, companies increasingly rely on financial innovation to address their daily risk management needs, and this leads to the creation of bespoke instruments, very specialised and traded OTC. As such, these bespoke instruments are not covered by present tax legislation, not least because the latter are generally reactive and lag behind industry developments (JCT, 2011). Furthermore, tax law has normally been geared

towards treating hybrid instruments monolithically instead of breaking them into their constituent parts, which means that derivatives of derivatives (e.g. swaptions, future options) do not have a clearly defined statute in tax legislation, and buyers of such instruments can often pick and choose the cubbyhole that suits their interests better (Warren, 2004).

Lastly, because the tax treatment of derivatives depends also on aspects such as motive (hedge or speculate), the form of the entity (corporate or pass-through), or jurisdiction (domestic or foreign), derivative users can benefit from asymmetric treatment of the counterparties to the contract (Donohoe, 2014). The fact that one party to a derivative contract chooses one transactional form and associates that with a specific tax reporting obligation does not necessarily compel the counterparty to make the same choices. This means one party might receive ordinary treatment for any gain or loss, while the other party might not receive ordinary character treatment on, for instance, losses on the derivative (Raskolnikov, 2011).

## **4. The Financial Sector: Capital Market Arbitrage**

Financial derivatives are used as part of an efficient portfolio management provided by asset management industry. In a very simple scenario, a person lucky enough to have bought one million of Apple shares in the US stock market in 1996 would have seen her investment appreciate tremendously. The person would have paid, however, tax when shares are bought, and pay again capital gain tax when selling those shares. In an alternative scenario, the person would buy a derivative contract based on Apple shares. No share needed to be bought or sold. The derivative contract merely refers to an underlying asset, Apple shares, but has no direct link to those shares. In this case, no duty was paid on the purchase of the shares. If the contract was registered not in the UK but in the Caymans Islands, a small Caribbean British overseas territory that levies no corporate taxation, no capital gain tax or any other tax that could be remotely associated with this contract.

A derivative contract allows its holder to bet on underlying values, in this case Apple's share, but in location of one's choosing. Cayman has been accommodating to potential clients. The country has set up a Commodities & Derivatives Park for companies that undertake financial services activities directly or indirectly related to commodities, derivatives, futures, and options. The park can be used by fund and investment managers to prop trading accounts. The park even has physical electronic marketplaces for buying, selling of stocks, stock options, bonds or commodity contracts. The island with about 55,000 inhabitants (half of which are expats) has emerged as the fourth or fifth largest financial centre in the world (Palan et al., 2013).

Sophisticated asset managers would often use such techniques either directly or indirectly, by spreading a portfolio through hedge funds that would use such techniques. The results, nonetheless, are the same. HNWI's

are able to reduce dramatically their tax bill through the deployment of derivatives by their financial agents.

#### *4.1. Total return swaps*

The simple case above refers to individual behaviour. To take another example of a financial instrument which has been making headlines for its role in facilitating tax avoidance, total return swaps (TRS) are derivatives that allow the buyer to gain exposure to the performance of a set of underlying assets without actually owning them. TRS have been recently growing in popularity in the European market for investment grade and high-yield corporate debt. It is estimated that the monthly trading volume for euro and dollar-denominated additional tier 1 bonds (AT1) – equity debt designed to take first loss in case of distress – has increased four-fold during the past four years to \$12bn (Smith and Hale, 2017). TRS have been a boon for hedge funds looking to gain new channels through which they can expose themselves to high-yielding assets.

TRS work by swapping a set rate for a payment based on the performance of an underlying asset, which normally includes both the income it makes and the capital gain it accrues. This implies that the party buying the TRS can gain the economic proceedings from owning an asset, without actually having to put that asset on its balance sheet. This has an advantage for the counterparty which owns the assets too, given that it basically constitutes a form of protection from potential loss in value.

From a tax perspective, this constitutes a double whammy. For one, as in the case of a basket of options (discussed below), for taxation purposes parties to TRS can claim that the money they eventually receive constitutes capital gain rather than investment income, which results in a lower rate of taxation. This scheme infamously brought down Mitt Romney,



the Republican candidate to the US presidency, after it was revealed he was a keen user of TRS (McConnell, 2015). The second issue, however, arises when the investor is an intra-group firm based offshore, as has often been the norm. In this case, a firm operating say, in the UK, enters into a contract with another firm, part of the same group but located offshore, and agrees to route 100% of the profits to the second firm in exchange for a fee as - for instance, 20% of the profits.

## 5. The Regulatory Landscape of Derivative Contracts

Despite recent attention to financial techniques enabling tax abuse, international and European regulations are decidedly behind the curve of industrial developments. This section provides a summary of the current state of play of European regulation.

### 5.1. BEPS and Financial Instruments

Among the recent and ongoing efforts, one of the most resonant and far-reaching campaigns to combat unfair tax practices is the OECD and G20's Base Erosion and Profit Shifting (BEPS) project. Initiated in 2013 as a two-year project, it was meant to address the capacity of MNCs to take advantage of the regulatory divergences characterising different national tax regimes, BEPS is currently in its implementation phase and involves 116 countries, providing them with a platform for discussing taxation issues as well as developing policies to tackle the aspects that facilitate tax base erosion and monitor their implementation (OECD, 2017).

Despite the relative appreciation and success that BEPS has enjoyed to date, BEPS does have a potentially major blind spot in its scope. That is the issue of sophisticated financial instruments put to use by MNCs for tax planning purposes. BEPS itself makes no mention, for instance, of financial derivatives, which are, as argued above, part and parcel of the financial toolkit that MNCs deploy in managing the various international risks to which they are exposed. Furthermore, BEPS does not address the issue of corporate treasuries, which have increasingly centralised all global risk management operations and are the primary *loci* where MNCs make tax planning decisions and thus the source from which they deploy sophisticated financial instruments and techniques (Trocme and Sylwander,

2017). It appears BEPS mirrors some of the regulatory shortcomings present at the national level and described above: it is more concerned with the transactional form of international monetary flows rather than the economic position they express.

This is not to say that, although it does not explicitly mention financial engineering as a channel for tax avoidance, that BEPS will not have any consequences upon derivative use in MNC's risk management and tax planning activities. On the contrary, there are proposals at the core of BEPS which will affect the manner in which derivatives have traditionally been used by MNCs in their day-to-day, intra-company business. This is an issue which has been picked up on especially by accounting firms, who have tended not to expand analytically on the matter, but have been issuing some exploratory opinion pieces in which they voice their concern and urge to pay caution to the implications of BEPS on MNCs' derivative use.

Four dimensions of BEPS' coverage are of particular interest: treaty access, hybrids, interest deductions, and risk transfers (EY, 2016; PwC, 2014). BEPS has already made strides in the first two of these areas, whilst in others implementation is in progress. With regards to the first dimension, the BEPS project departs from the idea that tax treaties, instead of creating a transparent and homogeneous rulebook for dealing with standard issues such as double taxation, have in fact been an agent for abuse, particularly by various taxpayers interested in taking advantage of favourable treaty provisions. A common practice here is the elongation of the ownership chain through the insertion of intermediate entities. For instance, the re-routing of investment from country A through a firm set up in country B in order to take advantage of A-B income tax treaty benefits; benefits which, of course, would not exist in the case of direct investment without intermediation. As a result, BEPS introduces changes to limit the access to tax treaties (purpose and benefits tests). These changes do affect derivatives use, especially when parties entitled to access to a tax treaty enter into hedging or collateral arrangements with third-party agents

outside of those tax treaties. This might signal to tax authorities that intermediaries are used to abuse the treaty.

Whilst tax treaties are generally signed in order to resolve international problems such as double taxation, hybrid mismatches usually refer to what can be called the issue of double non-taxation. For instance, the hybrids identified and targeted by the OECD are comprised of payments deductible for the payer but not taxed by the recipient; payments that lead to double deduction for the same expenditure; and a combination of one of the previous two mismatches and a non-hybrid payment from a third party, which would result in an indirect hybrid for the third party and a non-hybrid for the counterparty engaging it (OECD, 2018). BEPS addresses these hybrid arrangements in order to reverse the tax benefits arising from their use. When heavily structured derivative products are assembled in order to change the transactional form of economic positions to take advantage of favourable tax stipulations (for instance by creating synthetic bonds for interest deduction purposes), this might naturally trigger these regulations and prevent the use of these sophisticated financial instruments.

Indeed, deductions are of particular interest to the BEPS project, and it appears the scope of its work in this area is very wide and as a result ongoing. The ambition here is not only to reverse unlawful deductions, but to actually reduce the potential for excessive deductions, especially those achieved through means other than interest payments. Guarantees, captive insurance arrangements, and of course derivatives are some of the prospective targets in this case.

Finally, the issue of risk transfer might have some bearing on the employment of derivatives for MNCs' tax planning activities. More generally, this is connected with the changing approach towards taxation that BEPS represents, which emphasises taxing profits where economic activity actually takes place and value is created, rather than where it these are booked. The practice of risk transfer usually involves an entity accruing unusually high returns simply by being contractually invested in managing

risks, whilst lacking the concrete capacity to financially and operationally manage those risks (OECD, 2018). The BEPS framework addresses this by introducing an obligation to demonstrate functional substance to the company offering risk management (personnel, finance, etc.). This might have consequences for derivatives use, given that these have as their *raison d'être* the management of intra-group risks. Counterparties to derivative transactions occurring in MNCs could thus be subjected to queries regarding risk management capacities, both on the financial and on the operational fronts (PwC, 2014).

These are some potential implications of the BEPS project on the use of financial engineering for tax planning purposes. To reiterate, even though the initiative itself does not mention derivatives and other sophisticated financial structures, there is scope for these to be affected by the wider move towards a more 'substantivist' approach to taxation which BEPS exemplifies. Such a move, however, is only in very early stages, and it is as yet unclear what consequences it might have in this area. Not least, the application of BEPS principles on the use of derivatives suffers from a chronic understaffing problem – there simply are not enough human resources devoted to this issue.

## *5.2. European Derivatives Regulations*

Generally in the European context, taxation of financial instruments including derivatives deployed by firms (defined as 'all undertakings') are regulated by the Directive 2013/34 of the European Parliament and of the Council on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings<sup>v</sup>. The general principle of taxation for financial and non-financial assets adopted by the EU is the fair value accounting, with fair value defined as an amount at which an asset could be exchanged between knowledgeable and willing

parties in an arm's length transaction. In theory, this stipulates that any EU company, big and small, should report the value of financial instruments on its balance sheet at a price at which such instrument can be traded in the market at the moment of reporting.

Yet, unlike the situation in the US, two important exceptions to this general principle create ample opportunities for tax arbitrage within the EU, and magnify the knowledge and expertise asymmetries between the corporate sector and the EU regulators.

Specifically, Article 4 of the Directive 2013/34 introduces important qualifications and Article 5 makes a further exception and notes that Member States may, in respect of any assets and liabilities which qualify as *hedged items* under a fair value hedge accounting system, or identified portions of such assets or liabilities, permit measurement at the specific amount required under that system. The result is a system that can easily be subject to abuse.

Article 6 of the Directive continues that by way of derogation from the general rule, Member States may permit or require the recognition, measurement and disclosure of financial instruments in conformity with international accounting standards (IAS) adopted in accordance with Regulation (EC) No 1606/2002.

This treatment suggests to us that while there is now a general recognition that financial innovations enable tax avoidance, the EU's position on the taxation of derivatives deployment by companies remains highly varied across the bloc with main expertise driven by the industry itself, and with many existing provisions allowing considerable discretion to the companies and member states. This finding is confirmed by our interviews with corporate accountants of EU-based companies and senior partners in law firms working in capital markets.

### *5.3. The European Financial Transaction Tax*

In 2011, the European Commission proposed to introduce the so-called financial transaction tax (FTT) as a measure to enhance accountability and economic contribution of the financial sector to the regional economy. Some member states opposed the levy, a smaller group sought a compromise under "enhanced cooperation" rules. Ten EU countries - Austria, Belgium, France, Germany, Greece, Italy, Portugal, Slovakia, Slovenia and Spain - are now regarded as FTT-implementing countries. Although FTT does not target tax abuse directly, it is the closest the European regulators have come to in terms of introducing an industry-wide measure to tax the financial institutions better.

In preparation for FTT, the EU commissioned a number of studies into the nature of derivative contracts. According to these calculations, derivatives would account for more than half of the projected revenue of FTT, with 6.2 billion euros coming from exchange-traded contracts and additional 6.1 billion euros from over-the-counter trades.) Yet crucially, some of the most evasive and parasitic aspects of financial trade, such as high frequency trading, or the rapidly growing wealth management industry, remain outside the scope of new taxation measures (Grahl and Lysandrou, 2003).

In our estimation, FTT is a blunt measure that, as far as we can see, would not affect or change the use of derivatives as instruments of tax avoidance. Conversely, it may in fact lead to new set products that may affect the apparent location of derivatives contracts.

### *5.4. Tax Regulators*

Some of the above issues caught the eye of tax legislators in the US and the UK. The IRS, already in 2009, issued an industry director directive regarding TRS, after noticing that offshore funds were using these derivatives to circumvent withholding taxes (Gross, 2010). Generally, lower rates of withholding taxes would be possible if tax treaties with the US allowed, though this does not usually apply to offshore funds. However, if payments to the offshore fund are subject to notional contracts like TRS, then these are normally sourced to the residence of the payee (the US company) and thus not covered by withholding tax.

Similarly, in the UK, the HMRC introduced measures in 2014 to address precisely the issue of derivative contracts between group companies, with special reference to TRS (HMRC, 2014). The concern of the UK tax regulator was that TRS facilitate what it calls 'disguised distribution arrangements', that is, the intra-group shifting of profits to other jurisdictions whilst claiming a deduction based on the fact that it was made under a derivative contract. The policy is aimed not at preventing the use of such a contract, but at making the said deduction unlawful.

The EU, as far as we can tell, has so far not issued any guidance with respect to the use of TRS for tax planning purposes. TRS are still covered by EU Regulation 2015/2365, which is meant to reduce the overall market risk associated with securities financing transactions by increasing transparency and the use of platforms such as trade repositories, which collect and maintain records of OTC derivatives. This is of course important, especially in an environment of QE-fuelled appetite for high-yielding bonds, but it should not preclude from taking measures against the use of these opaque financial instruments for aggressive tax planning.

The IRS normally forms teams of highly specialised tax return examiners and financial experts to police aggressive tax strategies involving derivatives (e.g. McConnell, 2007; Raghavan, 2007). Still, the policy treatment of derivatives as 'reactive and particularized' response of tax law to financial innovation creates inconsistency, asymmetry, and



indeterminacy in derivative taxation (Donohoe 2011, 37; see also (Warren, 2004; Weisbach, 2005). He finds that in the case of derivatives, the tax reporting system is fragmented, largely incomplete, treats similar instruments and opposing sides to the same transaction differently, and offers few provisions for determining the tax treatment of new or compound transactions.

## **Conclusion and Policy Implications**

This policy brief was prompted by the series of investigations conducted in the US during the past decade. They delved into the use and potential abuse of financial instruments for tax avoidance by the US banking and corporate sector. COFFERS WP1 was intended to ascertain whether sophisticated financial instruments such derivatives are being used as techniques of tax avoidance and evasion by the European banking and corporate sector as well; and if yes, whether there might be material differences in the type, range or mix of techniques of financial engineering that are used by the EU banking and corporate sector due to divergent regulatory environment between the US and EU.

MNEs are avid consumers of derivatives, and among other uses, they employ derivatives for aggressive tax planning purposes. The war against preventing MNCs from engaging in tax avoidance practices has been waged on many fronts, with initiatives coming from the grassroots, the third sector, and governmental agencies. One inescapable conclusion has been confirmed by nearly all of our interviewees, is that there are inherent characteristics pertaining to financial engineering, especially deployment of derivatives, that make them particularly fertile for enabling aggressive tax planning practices. Derivatives can furnish any type of an economic position whilst changing its transactional form, so that the contract falls under a different tax regulation than the one the original economic position called for.

This pliability, together with the notorious complexity and obscurity of derivative transactions, makes for a powerful instrument that can in some cases be put to illicit use with minimum traceability and relative impunity. In this sense, the EU is not different from the US. Many of our interviewees believe that financial engineering and sophisticated financial instruments are probably the largest source of tax avoidance world-wide. Furthermore,

many were of the view that in light of tightening OECD, US and EU fiscal regulations, the temptation to use sophisticated financial instruments as tax avoidance techniques is only likely to increase.

Despite the recent political attention given to the phenomenon of illicit finance, academic literature and empirical studies of financial innovation and tax abuse remain scant. And while there has been wide-ranging detailed research conducted by academics, governmental and non-governmental organisations into the use of what we describe as 'simple' financial techniques such as 'thin financing', hybrid mismatch and arbitraging loans, bonds, dividends and the like as tax avoidance techniques. In contrast, the literature on sophisticated financial engineering and tax avoidance is scant and fails to differentiate, we believe, between two very different techniques of abuse. Current research into the use of derivatives and other financial instruments, scant as it is, is focused entirely on corporate balance sheet arbitrage on the one hand, and core techniques of capital market arbitrage (tax included) in the financial industry. Correspondingly, due to meagre research, the lines differentiating between planning, aggressive tax planning and abuse have not been subject to a great deal of attention.

In truth, both set of practices - balance sheet arbitrage and the practice of tax planning through capital market structures - are poorly understood in the literature. The gulf between fiscal and monetary studies in the academia is a chasm that very few have been prepared to cross so far. Due to the chasm, several regulatory problems persist.

First, while some of the enablers of tax abuse - namely, banks - have come under some regulatory scrutiny post-2009, this new focus has been geographically uneven and politically slow.

Second, in the corporate realm, the legal practices of tax planning do continue to include tax optimising and deferral, where instruments such as derivatives have direct applications.

Third, the relative rise in importance of global capital markets (as opposed to traditional banking) for fund-raising and balance sheet management means that operations of capital markets, such as structured finance including securitisation, as well as balance sheet management, continue to deploy complex financial innovations. While bank-enabled financial assistance in aggressive tax planning may have been tamed in the wake of 2007-09 crisis, the very practice of tax arbitrage through capital markets has continued, most recently receiving a further boost from the thriving fintech sector.

The problem is that this chasm between fiscal and monetary matters, replicated in the academia and in the regulatory infrastructure, is not replicated in the world of finance. Quite on the contrary, in real life, financiers, lawyers, accountants and tax experts tend to work together in teams, in large banks as well as in smaller boutique asset management firms. This is crucial! Regulation are 'siloed' and compartmentalised. As to be anticipated, they take full advantage of existing conceptual, analytical and regulatory 'blind spots'. Derivatives are useful in this regard not only because of what they can do, but because of what Michael Donohoe calls, cognitive blindspots. The highly technical nature of derivatives, the complex mathematics and jargon, requires highly motivated experts to join the regulatory community, and deters most non-regulators from touching upon those issues.

The chasm has implications to current regulatory efforts. The new post-2009 EU financial regulatory environment does not directly address the issue of financial engineering for aggressive tax planning purposes. Initiatives like OECD's Base Erosion and Profit Shifting (BEPS) and EU's Aggressive Tax Planning Indicators (ATPI), while relatively comprehensive in their focus on the corporations straddling heterogeneous national taxing systems, do not focus directly on the opportunities created by financial engineering with regards to tax avoidance or evasion.

Compared with the US, we find the situation in Europe with regards to the regulation of derivatives and other financial instruments worse, for two related reasons.

First, there is policy discord between paradigms and regulatory philosophy. European approach gives the illusion that it is more systemic than the US. Indeed, on the one side, there are measures targeting intra-company accounting practices and tax abuse (BEPS, targeted action against giants such as Amazon and Google); there has been closer attention to jurisdictional abuse by practices such as Double Irish/ Irish-Dutch sandwich). On the other side, there are also market-wide measures such as the financial transaction tax aimed to ensure that the financial sector make a fair contribution to national tax systems. But the two-prong approach does not build into a comprehensive, systemic treatment of financially enabled tax abuse by banks and corporations in Europe.

By de facto differentiating between the corporate world and the financial sector, EU measures leave a vital 'in-between' space unaddressed. And yet the deeper tax abuse takes place at this very level of the financial structure. Most business dealings today are financed not by individual instruments but by complex, structured arrangements, involving several types of corporate assets, each of which can be financed differently, serviced by different arrangements financially and legally, often by a dynamic combination of financial instruments, sometimes involving banks, but increasingly, capital markets.

US regulations do target those capital markets and adopt what appear as less systemic, but at the same more granular approach. The European, ostensibly systemic approach ignores the role of capital markets, ensuring that important blindspots remain within the system – they are deep-seated, and hence pervasive.

Second, there is strong evidence that contrary to general impression, EU regulations in this specific area are much more captured by the industry

than in the US. EU rules specify, in fact, that national regulators may accept figures and structures as presented by the industry. How more captured can one be?

## **Take-Out for Policy-Makers**

It is clear that the EU has devoted considerable resources to the study of the more traditional aggressive tax planning techniques, including by the COFFERS project, culminating in a number of cutting-edge analysis of those practices. Our analysis has revealed institutional and policy gaps in these emergent regulations, suggesting that it is time to devote serious resources to build bridges in order to overcome the chasm that separates its fiscal and monetary matters. At first cut, this would require an initiation of academic research combining expertise of financial experts, structured finance professionals including lawyers and tax accountants. These steps have to be followed by a more uniform response at the political level of the EU.

## **Bibliography**

- Borstell, T., Hobster, J., 2014. Global Transfer Pricing Tax Authority Survey. Ernst and Young.
- Demere, P., Donohoe, M.P., Lisowsky, P., 2018. The Economic Effects of Special Purpose Entities on Corporate Tax Avoidance (SSRN Scholarly Paper No. ID 2557752). Social Science Research Network, Rochester, NY.
- Donohoe, M.P., 2015a. The Economic Effects of Financial Derivatives on Corporate Tax Avoidance. *Journal of Accounting and Economics* 59, 1–24.
- Donohoe, M.P., 2015b. The economic effects of financial derivatives on corporate tax avoidance. *Journal of Accounting and Economics* 59, 1–24. <https://doi.org/10.1016/j.jacceco.2014.11.001>
- Donohoe, M.P., 2014. Financial Derivatives in Corporate Tax Avoidance: A Conceptual Perspective. *The Journal of the American Taxation Association* 37, 37–68.
- Donohoe, M.P., 2011. Financial Derivatives in Corporate Tax Avoidance (PhD). University of Florida.
- EY, 2016. International: Treading carefully through the murky labyrinth of intra-group financial derivatives.
- GAO, 2011. Financial Derivatives: Disparate Tax Treatment and Information Gaps Create Uncertainty and Potential Abuse. United States Government Accountability Office.

Grahl, J., Lysandrou, P., 2003. Sand in the wheels or spanner in the works? The Tobin tax and Global Finance. Cambridge J Econ 27, 597–621. <https://doi.org/10.1093/cje/27.4.597>

Gross, P., 2010. Withholding Tax on Total Return Swaps Owned by Foreign Persons – Recent IRS Director Directive and Proposed Legislation [WWW Document]. Marcum LLP. URL <http://www.marcumllp.com/insights-news/withholding-tax-on-total-return-swaps-owned-by-foreign-persons-recent-irs-director-directive> (accessed 10.20.18).

HMRC, 2014. Finance Bill 2014: Measures with Immediate Effect [WWW Document]. GOV.UK. URL <https://www.gov.uk/government/publications/finance-bill-2014-measures-with-immediate-effect> (accessed 10.20.18).

Hull, J.C., 2014. Options, Futures, and Other Derivatives, 9 edition. ed. Pearson, Boston.

JCT, 2011. Present Law And Issues Related To The Taxation Of Financial Instruments And Products. The Joint Committee on Taxation.

McConnell, A., 2007. IRS forms new team to oversee derivatives. Bond Buyer.

McConnell, P., 2015. Making Money is Taxing [WWW Document]. The Conversation. URL <http://theconversation.com/making-money-is-taxing-49283> (accessed 10.20.18).

OECD, 2018. OECD/G20 Inclusive Framework on BEPS: Progress Report July 2017-June 2018. Organisation for Economic Co-operation and Development.

OECD, 2017. Background Brief - Inclusive Framework on BEPS. Organisation for Economic Co-operation and Development.



- Palan, R., Murphy, R., Chavagneux, C., 2013. *Tax Havens: How Globalization Really Works*. Cornell University Press.
- Polillo, S., 2011. Wildcats in Banking Fields: The Politics of Financial Inclusion. *Theor Soc* 40, 347–383. <https://doi.org/10.1007/s11186-011-9146-4>
- PwC, 2014. *Relevance of the OECD BEPS Project to Derivatives and Financial Instruments*.
- Raghavan, A., 2007. IRS probes tax goal of derivatives. *Wall Street Journal*.
- Raskolnikov, A., 2011. *Tax Reform and the Tax Treatment of Financial Products*. Government Printing Office, Washington, D.C.
- Smith, R., Hale, T., 2017. Banks Push Total Return Swaps as European Credit Booms. *Financial Times*.
- Trocme, J., Sylwander, R., 2017. *The Future of the Corporate Treasury*. Nordea.
- Warren, A.C., 2004. US Income Taxation of New Financial Products. *Journal of Public Economics*, ISPE Conference 88, 899–923.
- Weisbach, D.A., 2005. *Problems with the Taxation of Financial Instruments (Teaching Notes)*. University of Chicago Law School.

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<sup>i</sup> Altogether, we have conducted 18 semi-structured interviews with senior staff in the finance industry, accountants, partners in law firms, as well as former employees of banks and other financial institutions. The scope of our contacts was initially based on

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Nesvetailova's previous work on financial innovation and crisis, and were further expanded via personal networks or via a 'snowball' effect (i.e., an existing contact recommends a colleague).

We have interviewed staff and ex-employees of the following. London-based: Merrill Lynch, Goldman Sachs, Standard Chartered, Sidley Austin; Cisco Systems, Macquarie Group, Deutsche, Blackrock. New York: Deutsche Bank, Barclays, Morgan Stanley, Credit Suisse, two asset management boutiques, and the US Treasury and three persons from three different specialised legal firms. The latter are relatively small firms and our interviewees who asked that both their names and their firms' names to remain anonymous. Typically, interviews took between one and a half to two hours.

Many of our contacts found the subject of tax planning and avoidance too sensitive. Two senior executives (Deutsche NY and ING in London) had to run our invitation for an interview through their compliance office and ultimately declined the meeting. Few others declined in advance on similar grounds. In addition to the 18 semi-structured, number of others we made contact with were prepared to talk off the record, on condition of total anonymity and only on the broad topic of post-2009 regulation and the differences between the US and the EU. As a result, we had to tailor the conversation not around tax avoidance as such, but as the industry's and their institutional understanding of the dynamics of regulatory arbitrage phenomenon more broadly. Lawyers, both in New York and London were most direct in admitting that tax consideration have been and are at the very inception of any financial structure. Taping conversation was completely out of the question. We have taken notes during and after the meeting.

<sup>ii</sup> <http://www.europarl.europa.eu/committees/en/tax3/home.html>

<sup>iii</sup>

[http://www.europarl.europa.eu/RegData/etudes/STUD/2016/578980/IPOL\\_STU\(2016\)578980\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2016/578980/IPOL_STU(2016)578980_EN.pdf)

<sup>iv</sup> We acknowledge that these 'collar' type instruments can also have legitimate uses in terms of the management of capital structure and the maximisation of bond-based borrowing without default risk increasing if interest rates go up.

<sup>v</sup> Amending Directive 2006/43/EC of the European Parliament and of the Council and repealing Council Directives 78/660/EEC and 83/349/EEC.