



Tax Evasion and Avoidance through Financial Engineering

The State of Play in Europe

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Tax evasion and avoidance through financial Engineering:

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1. Introduction

Post-ante investigations into the financial meltdown of 2007-9 involving some of US largest banking houses, Lehman Brothers and Bear Stearns, revealed the use of sophisticated financial instruments in facilitating tax evasion and avoidance. In 2011, the Government Accountability Office (GAO) released an in-depth analysis of the use and potential abuse of financial instruments for tax avoidance by the US corporate sector. GAO reached the conclusion that derivatives are the main tools multinational corporations (MNCs) employ for tax noncompliance purposes (GAO 2011).

Following these revelations, governmental departments such as the Her Majesty's Revenue and Customs (HMRC) in the UK or the Senate Committee on Homeland Security and Governmental Affairs (HSGA) in the US are investigating the use of sophisticated financial instruments as techniques of aggressive tax avoidance (ATP). A number of court cases against tax-avoiding MNCs with resounding names (e.g. Google, Amazon, Apple, Starbucks), together with an admittedly modest but growing number of academics and tax experts have voiced concerns about the increasing use of complex financial instruments for the purpose of aggressive tax planning or outright tax evasion. It might seem that the political and economic environment is ripe for a regulatory overhaul that would render it difficult if not impossible to continue utilising sophisticated financial engineering for aggressive tax planning purposes.

In light of increasingly recognised importance of financial innovation in enabling tax abuse, COFFERS Work Package 1 (WP1) was tasked to investigate the following:

1. Whether financial derivatives and other sophisticated 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 addressing the problem of 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 tax avoidance and evasion.
5. Whether rapidly emerging new financial technologies generate any additional opportunities for tax evasion or avoidance.

1.1. Methodology adopted by this WP1 study

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

Second, we conducted extensive set of interviews, which took place primarily in the financial centres of the City of London, and secondarily in New York, with a variety of stakeholders, including bankers including senior managers of securitisation departments and derivatives traders; corporate lawyers and specialists in structured finance, corporate accountants, asset managers, hedge fund employees as well as ex-employees of any of the above, and some clients of the private banking and asset management industry.

Third, we analysed a series of studies and proposed regulations including OECD's BEPS, the EU's ATP program, 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 executed in such a manner 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 domains, 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 are 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 does not directly address 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 block, with technical expertise driven 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).
7. Despite the building momentum, what we find is that regulatory reform has been slow to catch up with developments occurring 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 goes 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: the former more granular and independent, the latter more systemic (though blind to 'in-between' spaces) and captured by industry.

8. Financial innovation and regulation have historically co-evolved, with technological and financial innovation usually outpacing the regulatory cycle. At present, a vast gap between developments in the industry and the regulatory sphere has been created by the rapidly growing financial technology (Fintech) sector. Fintech provides the Holy Grail for many areas of illicit finance including tax avoidance and evasion. It is very possible that Fintech will not only transform the financial sector, but also generate a whole new world of tax avoidance and evasion not addressed by regulators.

1.2. Policy recommendations

1. The EU should devote resources to build up bridges over the chasm that separate its fiscal and monetary policies. This would be both in the academic and the regulatory bodies.
2. The Fintech industry should be treated as a rapidly growing area that is likely to challenge existing infrastructure of fiscal and monetary controls.

3. The problem of inconsistency, indeterminacy, and lack of asymmetry in the rules and regulations of derivatives must be addressed, as indeed, the issue of economic form as opposed to transaction. Clever gaming of transactional form, the 'cubbyhole' system, must be addressed by regulators.
4. The apparent structural fragmentation of taxation in the EU regarding sophisticated financial products must be addressed as well.
5. Existing discretion in current EU regulations gives great advantage to the corporate world. While these discretion are necessary, due to the diversity of European economies. Nonetheless, a complementary granular approach (targeting specific markets or instruments) like the one that had been developed in the US (prior the Trump administration) is to be considered.

1.3. Structure of this report

With these issues in mind, our study continues as follows: first, we provide a primer on derivatives so we can set the backdrop for our further investigation. What makes them so important and why they are so amenable for tax avoidance or evasion purposes is our main focus. Then, we look at some court cases to illustrate the manner in which tax avoidance scheme operated through the use of derivatives.

2. Financial innovation and tax abuse: Theory and Evidence

To date, academic literature and empirical studies on financial innovation and tax abuse remain scant. Broadly, academic and policy understanding of the role of financial instruments and taxation falls into three main approaches.

The area of study of the relationship between finance and tax abuse that had been subject of considerable research concerns what we would term, the use of simple financial techniques such as 'thin financing', hybrid mismatch and arbitraging loans, bonds, dividends and the like as tax avoidance techniques. These have been studied extensively by researchers and regulators alike and will not be the subject of this report.

A second set of literature, which is of concern to this report, has evolved recently discussing the role of financial derivatives in the tax planning by non-financial corporations. This literature mirrors the more basic (and often illicit) practices of identified by the OECD's research on BEPs (including invoice manipulation, techniques of shifting and cost inflation). This literature shows that financial derivatives are often used to minimise and/or obscure the economic engagement of a firm's asset.

At the core of these practices can be described as techniques of *balance sheet arbitrage*. Derivatives and other sophisticated financial instruments emerge in the discussion during the later stages of the tax planning cycle. Financial advisers are deployed essentially to add layers of sophistication upon known practices including cost inflation, balance set arbitrage and manipulation of the economic impact of an asset held by the firm. The use of such instruments, in turn, usually is pre-determined by other factors, such as by the firm's operating markets, regulatory niches, ability to pay for the financial instrument.

Financial innovation, including derivatives, can be used by companies in the financial industry in tax planning as well. The use of derivatives here falls within the highly technical set of problems of taxing financial instruments. In banking, practices of investment and wealth managements, finance derivatives typically are embedded in the economic engagement of an asset, or a set of assets. Unlike in the non-financial realm, tax considerations, including aggressive tax planning, tend to emerge early at the planning stage of the structure themselves and involves tax specialists from the very start.

Financial instruments are designed, therefore, with one eye to the tax exposure of the asset. These practices have remained by largely outside the scope of current academic research, and have attached scant attention by national and international authorities. As a result, the lines dividing aggressive and non-aggressive forms of tax planning has not attracted much thought as well.

In truth, both set of practices, the practice of balance sheet arbitrage and the practice of tax planning of financial instruments, are not well understood in the literature. Up to 2007-08, financial innovation had not been analysed as a system-wide process; while taxation remained the subject of fiscal studies. The 2007-09 crisis has changed the state of play somewhat with financial innovation and its role in facilitating abuse became more prominent in market commentary and some scholarship. Despite many financial innovations facilitating abuse or precipitating financial instability, the dominant academic understanding of financial innovation as a set of improvements that reduce costs and/or improve the delivery of product or services.

If financial innovation has not attracted a great degree of attention, the connection or possible link between financial practices and tax abuse, attracted even less academic attention. 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 (Donohoe 2011). The thesis is entirely US-focused.

In contrast, the majority of market actors we interviewed believe that sophisticated financial instruments are the biggest ticket item of tax abuse. Post-hoc manipulation of taxable events, from transfer pricing, 'thin financing' to regulatory arbitrage are no doubt significant. But in the view of the people that we interviewed, on both sides of the Atlantic, balance sheet arbitrage – a concept that, to the best of our knowledge, is not used as yet in the literature, is MORE significant than any or all of those practices acknowledged by the OECD BEPS. Combined with tax planning of financial instruments, the potential for abuse is very significant. As the fiscal regulatory environment is tightening, the incentive to use sophisticated financial instruments is likely to increase.

Why then have conventional studies of tax avoidance and evasion by and large stayed away from questions relating to finance. We identify several sets of reasons for this continued gap.

First, conceptually, financial innovation and tax abuse are wide-ranging concepts. While financial innovation involves a wide spectrum of techniques, practices and products, investigations of abuse cases where illicit finance is involved tend to be very specific and usually point to only one type of an instrument or technique.

Second, tax abuse itself is a relatively fluid concept, where lines between tax optimisation, tax deferral, tax avoidance and evasion often blurred by the practical differences in legal and political jurisdictions. Connecting complex financial innovations such as for instance, derivatives, to tax abuse is challenging for both scholars and the authorities.

Third and perhaps more crucially, the financial system continually evolves in a spiral of regulation and system's response to the new sets of regulations. This dilemma is known as the Goodhart Law in finance. Financial innovation, enabled by legal infrastructure and increasingly, by technology, continues to move areas of financial practices away from the regulatory radar. In the area of fiscal regulation, this problem is exacerbated further by the structural disconnect between institutional regulation of the financial system (traditional the realm of the monetary authorities and designated institutions) and fiscal matters and taxation (the realm of national fiscal bodies).

Against these three sets of factors, we find that notwithstanding the post-crisis attempts to bring finance-enabled practices of tax abuse under regulatory focus, the practice of tax abuse – including tax arbitrage, tax avoidance and tax evasion – do continue.

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

Second, 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 banks) for fund-raising and balance sheet management means that financial practices such as structured finance including securitisation, as well as balance sheet management, continued to use 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 innovative tax planning has continued nonetheless, most recently received a further boost from the thriving fintech sector.

For the purposes of this report we propose to categorise financial innovation as a spectrum of techniques, ranging from (a) overt and aggressive schemes designed to bypass the 'spirit of the law', if not the letter of the law, (b) to legally acceptable practices of finance-enable tax planning, and (c) financial and economic operations that remain off the radar of any regulators, as in fintech. Since points (a) and (b) both centre on the use of financial derivatives, we turn to the subject of derivative in the next section.

3. The landscape of derivatives

Warren Buffet famously called derivatives 'weapons of mass destruction'. Back in 2002, few understood what Buffet was on about. Today we know that he was right on the money: derivatives and other exotic financial products help conceal and amplify risk, and they can do so on a vast, system-wide scale. What is less often noted, however, is that derivatives had become weapons of mass avoidance as well. Financial derivatives have emerged as the heart of schemes of tax avoidance through the use of derivatives, legal chicanery and financial havens.

3.1. *A Brief History of Financial Derivatives*

Derivatives have existed since time immemorial, but it is only in recent years that they have assumed a central role in the functioning of the global economy (Cecchetti and Schoenholtz 2017). 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 even a natural disaster.

Historically, such contracts served many necessary functions for the corporate sector. A European car company, for instance, sells cars in the United States. The company would need to price its cars in dollars, but its costs of production are denominated in euros. If the value of the dollar rises vis-à-vis the euro, the company gains. But if the opposite happens, the car company may end up selling cars in the US at a great loss. The company can come to an agreement with a bank or another financial institution for the purchase of dollars (or more often, for an option to purchase dollars) at a certain pre-determined rate in, say, two years' time. If the dollar falls

in the meantime, the car company would be still making profits because it hedged against the fall in the dollar. The car company hedged its currency risk by buying an 'option.'

Such contracts clearly are essential instruments in today's business planning. It is estimated that about 80% of global trade is intra-firm trade. It is necessary for such firms to hedge against currency, interest rates and commodity price fluctuations. Partly as a response to the varied needs of global businesses, a large secondary derivatives market has emerged, whereby those derivative contracts are traded with third parties. As a result, 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 2007-08 only effected a small dent in the derivatives market, which quickly bounced back to levels higher than pre-crisis ones. 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 (Figure 1).

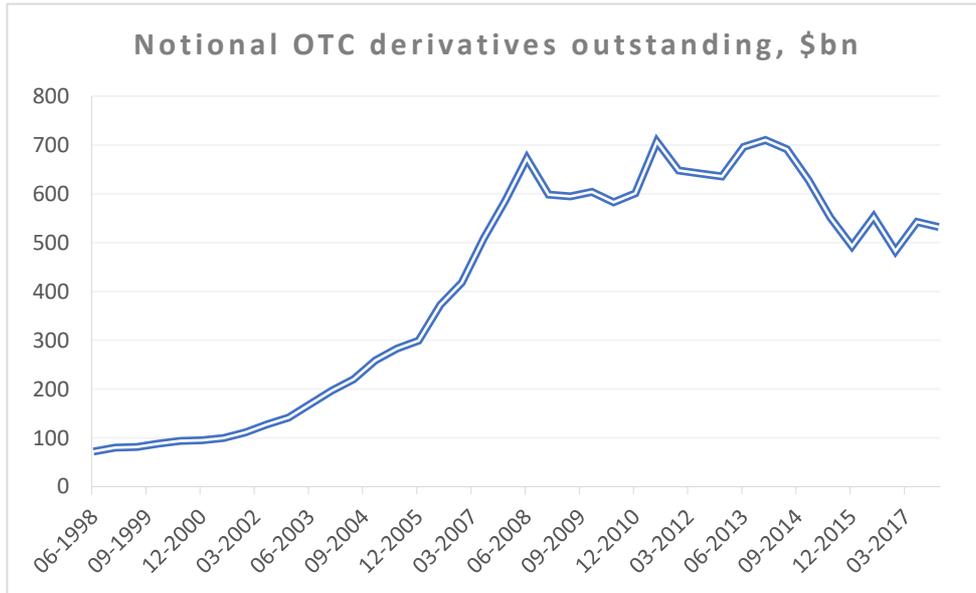


Figure 1. Source: BIS Derivatives Statistics

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).

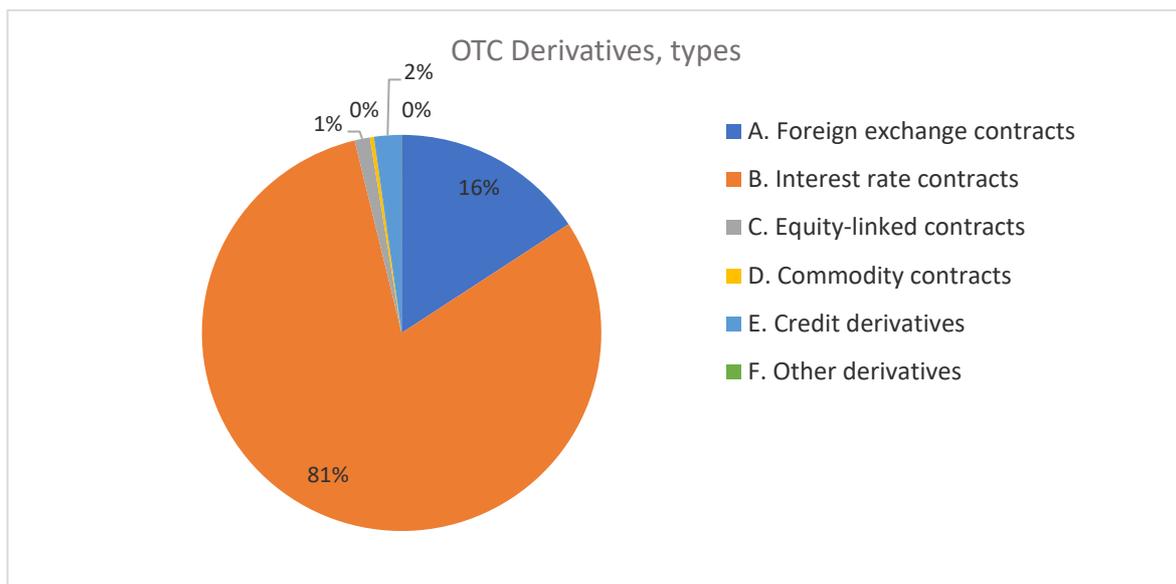


Figure 2. Source: BIS Derivatives Statistics

3.2. *Options, futures and Forwards and Swaps*

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 the derivative buyer 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 system 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). In a way, most derivatives are specialised instruments, given that by and large they are negotiated privately and traded on OTC markets, which 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 preliminary and can be later changed, as fitting to the parties.

MNEs are 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).

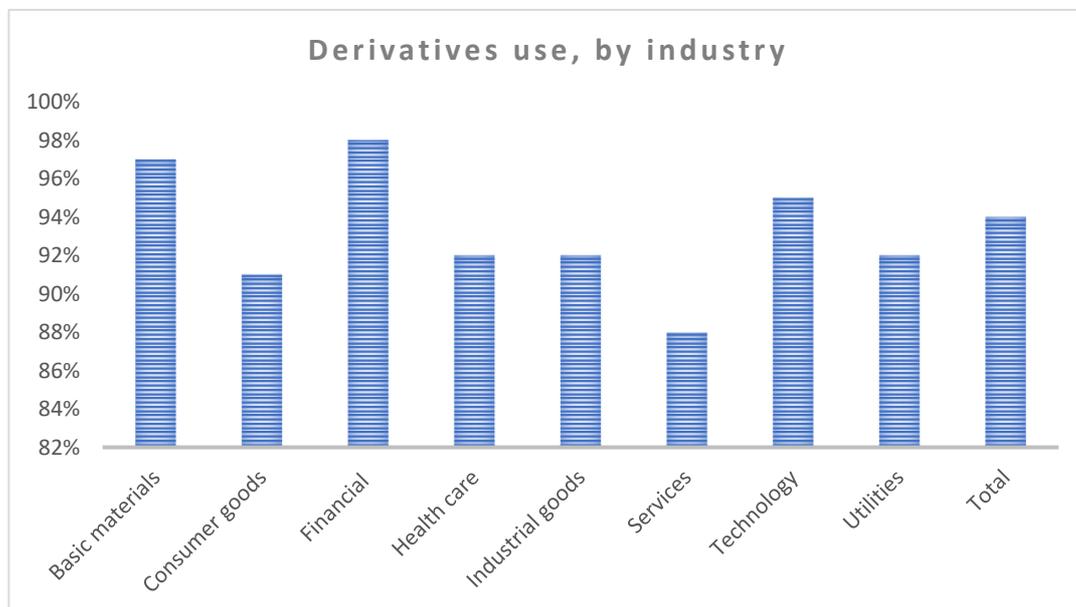


Figure 3. Source: ISDA Derivatives Survey

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. Unsurprisingly then, 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.

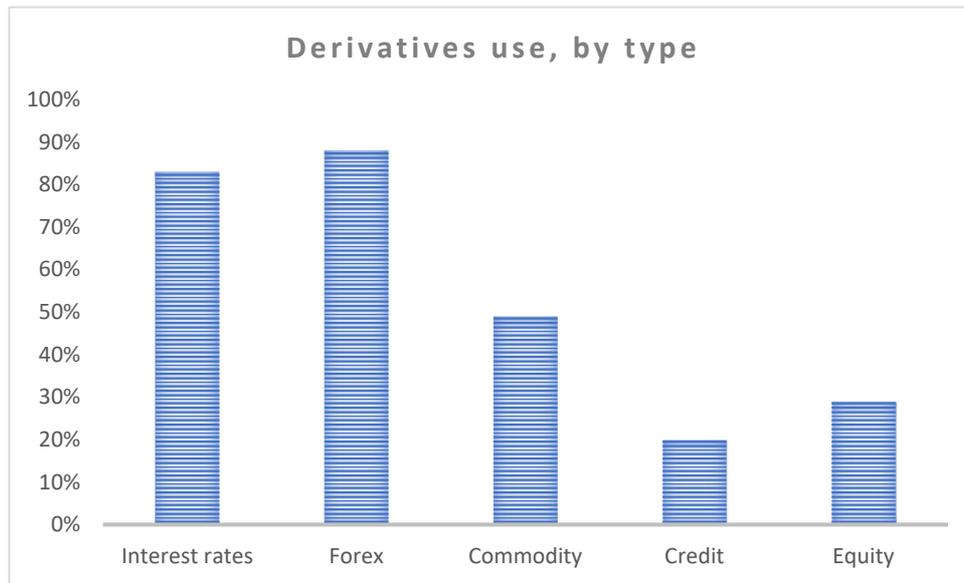


Figure 4. Source: ISDA Derivatives Survey

Regardless of the exact type of instrument used, derivatives afford 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.

3.3. *Hedging and Non-Hedging Derivatives*

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 reduce the volatility of taxable income, which can result in an overall lower tax bill. 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.

Furthermore, by reducing income tax volatility and shielding against risk exposure, the use of derivatives has the added benefit of increasing after-tax firm value (C. W. Smith and Stulz 1985). This increases debt capacity and, insofar as a company taps on this potential, it can end up in a situation in which an increase in interest rate expenditure is offset via tax deductibility and can lead, again, to lower rates of corporate taxation. In other words, a company may find it tax efficient to raise their derivative hedging exposure – an important factor explaining the size of the global OTC derivative market. Once more, by utilising derivatives for reducing taxable income volatility, a company can improve its economic position whilst at the same time reducing its overall tax bill, simply as a by-product of hedging practices.

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). Inconsistency is one of the most important aspects of the treatment of derivatives for tax purposes, and it relates to abovementioned fundamental pliability of derivatives. 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 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, because of 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.

Synthetic instruments, 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 upon 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 lagged behind 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).

3.4. Derivative and Tax Avoidance: estimates from the USA

The work of Michael Donohoe (2011, 2014, 2015), based on his study of US corporates, remains the most comprehensive source of research and policy lessons on the link between derivatives and tax avoidance. Donohoe's original premises were two-fold: first, that the inclusion of derivatives in tax avoidance schemes is economically significant yet

unexplored phenomenon (p. 1). Second, that the dominant literature on tax incentives for derivatives use does not dwell on the role of derivatives in tax avoidance (p. 1).

Donohue's original study was based on his analysis of Compustat database for the period of 2000-2008. In his sample, he included firms that were (1) publicly traded; (2) (US incorporated; (3) non-financial; (4) non-subsidiary; (5) have at least three years of consecutive data; and (6) non-missing data necessary to calculate basic descriptive variables.¹¹

On the basis of this criteria the scholar analysed 3,858 firms which generated 25,468 firm-year observations (2011, 2-3). He established correlation between the reduction of tax burden for the firms, and the implementation of their derivatives strategy. More specifically, he found that total notional principal and fair value of initial derivative positions are inversely related to changes in current tax expense and cash taxes paid (Donohoe 2011: 3). He then performed direct tests of the relationship between tax burden and the deployment of derivatives, and further complemented the findings with more granular analysis of why firms use these instruments. He established that tax burden reductions from effective hedging were substantially less than those from speculative and ineffective hedging. Also, there were no changes in the variability of income and reductions in debt usage following derivatives implementation. He concluded that "effective hedging, income volatility, and greater debt capacity cannot provide alternative explanations for the post-implementation tax burden reductions" (Donohoe 2011: 3).

His study suggests that corporations attain reductions in current taxes and cash taxes paid in the four years subsequent to deployment of derivatives. 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).

To complement his quantitative estimates in the sample Donohoe also manually reviewed 125 (5 percent) of randomly selected disclosures for evidence of tax avoidance activities. He found that firms do not mention tax avoidance in their explanation for the deployment of derivatives. This fell within the wider practice of 'concealment of tax planning strategies.' Instead, nearly all disclosures suggested that derivatives were used to offset exposures to foreign exchange and interest rate risks. Consequently, these new financial disclosures offer little assistance to tax authorities should they attempt to detect derivative-based tax avoidance from the financial statements (Donohoe 2011: 31).

Donohoe and colleagues estimate that 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, Donohoe, and Lisowsky 2018). In his later work, he estimates 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 2015).

Expert groups also identify derivatives as a key threat to global tax revenue (Schizer 2000; Warren 2004; GAO 2011; OECD 2011). Despite these details studies, no one, including Donohoe is prepared to provide a global estimate of tax avoided through sophisticated financial engineering.

3.5. Derivatives in the European Scene: Caveats Create Opportunities

There is no equivalent set of academic studies like the one conducted by Donohoe and colleagues applied to the European scene. Yet, our interviewees were of the opinion that derivatives are used as extensively by European firms and banks as in the US. In the corporate sector, company accountants did suggest to us the utmost importance of some of the new rules (derivative regulations) and greater scrutiny, and confirmed that tax avoidance can never be the goals of their corporation. When pressed for further, some of our interviewees confirmed what we have suspected, that tax optimisation and most specifically, tax deferral, were often the ultimate targets of the deployment of sophisticated financial instruments.

It would have been nice, therefore, to replicate Donohoe's range of studies and apply his logic and reasoning to the European scene. Or alternatively, apply his calculations to the Europe in order to gain some global estimates of the use of sophisticated financial instruments and tax avoidance in Europe.

Yet, replicating Donohoe's study in the EU is imperilled not only by the problems of required resources and scope, but most crucially, by the apparent structural fragmentation of taxation in the EU. In other words, whereas the financial tools may be the same on both sides of the Atlantic, the implications of those tools in terms of taxation are very different.

The main problem lies, as we will see in section 6, in the discretion afforded by the EU to individual member states in the taxation of financial instruments reported by EU companies. Putting these qualitative finding in the context of EU regulation of tax, there is little doubt that corporate treasures and accountants are using the loopholes embedded within the current EU regulation.

3.6. *Tax legislations and derivatives*

Donohoe notes that the IRS normally forms teams of highly specialised tax return examiners and financial experts to police aggressive tax strategies involving derivatives (e.g. A. McConnell 2007; Raghavan 2007)). Still however, he characterises the policy treatment of derivatives as 'reactive and particularized' response of tax law to financial innovation creates inconsistency, asymmetry, and indeterminacy in derivative taxation (Weisbach 2005; Warren 2004). 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.

In sum, tax legislation concerning derivatives suffers from at least a threefold shortcoming which stems from the ambiguities that derivatives engender. Inconsistency, indeterminacy, and asymmetry allow parties in derivative contracts to tinker with the transactional form and bury an economic position under layers of obscurity. This affords opportunities for changing the tax treatment of these positions. Regulators and lawmakers are left with having to regulate complexity only in a retrospective manner due to the quasi-uniqueness of these contracts. The following section provides some examples of these practices.

4. The use of derivatives for tax planning: Non- Financial firms, Examples and Scenarios

The key to understanding of the use of swaps and other types of derivatives in tax planning lies in the key distinction, from an accounting perspective, between the concept of the balance sheet (which contains information on assets and liabilities), and the concept of income statement (which contains information on income, outgoings and profits). Tax is paid on reported profits in the income statement. Derivatives, as well as other financial innovations, can be used to ensure that certain items on the balance sheet are either made to appear differently, or disappear altogether from income statement, thus reducing the overall tax.

Derivatives are mainly purchased for the flexibility they offer (parties can buy or sell in the future, but are not obliged to) and protection from changes in the market conditions (the price is pre-specified in the contract). But particular types of derivatives can provide something else. For instance, buying an option on an asset allows its holder to dissociate the ownership of the actual asset from the ownership of the options. In this case, the buyer obtains the economic gain from changes in the value of the asset, but does not pay the capital gain tax because he is only holding the financial derivative on the asset, and not the asset itself. This disassociation between the ownership of an asset from the ownership of value related to the asset is something that most national systems of taxation have not come to grips with as yet.

In the previous sections we have already alluded to some the common ways of deploying financial derivatives for tax planning purposes. Below we add some more, starting from individual level the firm and the investor.

Derivatives and swaps can be used in countless ways as tax avoidance tools. Here we narrate some of the simpler and best known methods.

4.1. Cost Inflation by the Use of Derivatives

A company's income statement works on the principle of operating revenue minus cost incurred in generating those revenue. The concept of the net revenue is then the basis for tax calculation. Financial derivatives can be used to move money away from your income statement. This, in turn, cannot be done outside of the TR system.

Regardless of its main area of market activity, firms would hold to various assets on their balance sheets, and those assets may lose value. Firms buy some insurance or hedge against those losses. Although within the current EU rules, the those insurance policies must be stated at fair value, in case of substantial increases in market valuation, fair value reporting may be economically accurate, nor advantageous to the firm.

For instance, firm X owns £1 million worth of assets. The firm estimates the assets may drop in value to £900,000. The firm calculates the probability of this risk occurring at 1%. The firm seeks insurance for £100,000. The cost of the insurance is £50. This figure can enter as cost on the company's income statement. Alternatively, according to the firm's calculation of 1% probability of this happening, the firm can buy a financial option contract to maximise the financial worth of the assets and minimise the impact of value losses. The option contract would allow the firm to regain £100,000 fully – and make sure the assets are actually worth £100,000. Given the estimated probability (1% x 100,000), the actual cost

of the option contract to the firm amounted to £1000 pounds, even though the cost of insurance is only £50.

The technique allows the firm to improve its balance sheet, in this case by £1000, and yet book a cost of £50 on its income statement. Financial gains from derivative trading over-the-counter (OTC) transactions are, in effect, an income stream. But in the accounts, those income streams are treated not as an income stream but as assets. This valuation can be used to buy more derivatives, or just keep as a derivative, and hence not place those income streams on the income statement. As a result, while the firm is benefiting financially from trading, the tax on this operations is not paid. These instruments are logged as an asset, and not as part of the company's income statement on which taxes are paid. The incentive to book as many operations as derivatives is obvious, particularly as those could be booked fairly easily through subsidiaries in no-tax jurisdictions such as the Cayman Islands.

4.2. *Income smoothing*

Academic studies concur that at the most fundamental level, taxpayers can use derivatives to strategically modify the timing, character, and source of gains and losses with little scrutiny from tax authorities (e.g. Donohoe 2011, 2014). One of the core reasons for deployment of derivatives includes tax function convexity and the debt tax shield. Because progressive tax rates imply expected tax liabilities are a convex function of taxable income (i.e., pre-tax value), volatile income may lead to higher expected taxes (Smith and Stulz 1985). Therefore, reducing income volatility with derivatives – for instance, through effective hedging - can have the opposite effect (e.g., (Graham and Smith 1999)). Likewise, by reducing the volatility of income and/or the probability of financial distress,

hedging with derivatives increases debt capacity which, in turn, may reduce taxes by increasing deductible interest payments (Stulz 1996). Mayberry et. al find that 'discretionary smoothness is associated with higher levels of future tax avoidance, consistent with managers smoothing taxable income as part of their tax avoidance strategy (Mayberry, McGuire, and Omer 2015).

These are relatively 'classic' and understood schemes of potential application of derivatives to tax planning. However, they do not capture the full rationale for derivatives deployment; nor do they touch upon the second and third layers identified by Donohoe (2011) as key means by which financial derivatives enable tax avoidance. These second- and third-level means concern important factors of derivatives reporting and regulation.

Let us take a typical example involving large-ticket item purchase. For instance, a sale of five Airbus planes to KLM, each at 110 million Euros. Typically it takes more than a year to build those planes, but the sale of such a big-ticket item can inflate income at a particular quarter, pushing Airbus into higher bracket tax-band during that specific year. The purchase is typically organised through a payment from KLM to a Special Purpose Vehicle set up by Airbus. To smooth the flow in income for its tax reporting purposes, KLM will loan the money to the Special Purpose Vehicle, which in turn will spread the payment to Airbus over 5 to 10 years, ensuring that the income would be spread in such way as to be logged under lower tax-band. Typically, Airbus would have less than 50% ownership of the SPV, ensuring the SPV does not enter Airbus's balance sheet.

4.3. *Cubbyholes*

Generic piecemeal approach to taxing sophisticated transactions has created a “cubbyhole” system that permits similar (and sometimes identical) economic positions to be taxed differently depending on transactional form (Kleinbard 1991). Because the tax system and reporting and tax obligations requirements treat the same economic position, only expressed in different instruments, differently, derivatives can be used to change the transactional form to the one that attracts least taxation.

For example, using the concept of put-call parity, a firm can acquire equity interests in another firm through at least five different transactions: (1) directly purchasing shares; (2) engaging in an equity swap; (3) executing an equity-linked note; (4) purchasing a call, selling a put (or entering a forward contract); and (5) buying a prepaid forward on equity. All five of these roughly equivalent transactions achieve similar ownership objectives, yet all are subject to disparate tax treatments (Donohoe 2011).

At the same time, the tax law distinction between different derivatives is generally untenable as financial equivalences allow one cubbyhole to replicate another. In doing so, taxpayers are essentially free to choose the alternative that provides an optimal tax outcome. The existing EU legislation, as mentioned above, only accentuates these opportunities, allowing important discretion both to member states in treating certain valuation and to corporations in choosing to report a particular position in a favourable way. The aggregated effect of such loopholes, exceptions and ‘cubbyholes’ is that relatively simple financial instruments, when combined, can magnify both the scope for tax manipulation and the regulatory opacity, as remains the case with many OTC derivatives despite recent EU moves to move some of the instruments to organised platforms.

4.4. *Synthetic reserves*

Intra-company structuring enables a technique which can be conceptualised as synthetic reserve system. Its function is to maximise the use of company's capital while minimising its tax exposure. Creating a synthetic reserve allows the company to report the funds as a reserve, but in reality, it is money that the firm can use, again and again. Effectively, this mimics an in-house bank account: you put the money into it and then the bank account gives loans to other elements within the company. While the funds are accumulated over there, these loans are seen as transfer within the company itself.

5. The use of derivatives for tax planning: Financial firms, Examples and Scenarios

In 2015, five of the largest banks in the world, JP Morgan, Bank of America Merrill Lynch, Deutsche Bank AG, Nomura Holding and Morgan Stanley, reported zero corporate tax in the UK, the largest international financial centre in the world. Together with Goldman Sachs and UBS, which paid off a bit of corporate tax in the UK that year, the seven banks employed 33,000 staff in the UK, reported £20bn in the UK and £3.5bn, but ended up paying a combined total of £21m in corporation tax¹.

Meanwhile, the 20 biggest European banks posted profits of at least £18bn in global tax havens in 2016 (Aubry and Dauphin 2017). Collectively these institutions made €4.9bn (£4.2bn) in profits in Luxembourg, more than they made in the UK, Sweden and Germany combined. CBCR data suggests that European banks did not pay a single euro in tax on €383m in profits made in tax havens in 2015 (Fino 2017).

Whereas in the previous chapter we discussed financial innovation, tax planning in the non-financial economy. The trifling payment of tax in the financial sector deserves full attention. It is the product of financial innovation and clever use of sophisticated financial instrument as way of engaging in regulatory arbitrage, inclusion tax arbitrage.

¹ In 2014, the most profitable investment and commercial bank in the UK, JP Morgan Securities Plc, had \$2.6bn (£1.75bn) in profits but paid no tax according to its country-by-country report (CBCR). JP Morgan had a UK tax liability of \$524m, but the sum was offset by foreign tax credits, overpayments in previous periods and “the benefit of other available tax reliefs” (<https://www.independent.co.uk/news/business/news/five-of-worlds-biggest-investment-banks-pay-no-uk-corporation-tax-a6783716.html>). Overall, corporation tax has fallen as a proportion of the total tax paid by the financial services sector in the UK from 40.8 per cent in 2007 to only 19.8 per cent in 2015 (<https://www.ft.com/content/1414b394-99dc-11e5-987b-d6cdef1b205c>).

Below we describe some only few of the better known technique of tax arbitrage in the financial sector.

5.1. Options and tax

Financial derivatives can be used as part of an efficient portfolio provided by asset management industry. Let us take a simple, run-of-the mill case scenario. A person lucky enough to have bought one million of Apple shares in the US stock market in 1996 would have seen his 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, a 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.

With a derivative contract one can bet on underlying values, in this case Apple's share, but in location of one's choosing. Cayman has been quite generous in helping 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. Perhaps it is not surprising then, that this small

island, with about 55,000 inhabitants (half of which are expats) has emerged as the fourth or fifth largest financial centre in the world.

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 result, nonetheless, are the same. HNI are able to reduce dramatically their tax bill through the use of derivatives.

5.2. *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 especially 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 (R. 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 essentially 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 employing 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 (P. 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 little as for instance 20% of the profits.

5.3. Regulators, Options and TRS: US, UK and Europe

These issues have 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.

5.4. Basket of Options

Another case of use of sophisticated financial instruments by hedge funds as techniques of tax avoidance for HNI is known as the practice of basket options – a derivative contract based on a selection of different types of assets.

What follows below is largely based on a scrupulous investigation by US Congress of two major banks – Barclays and Deutsche Bank – setting up and conducting elaborate tax avoidance schemes from the late 1990s through to at least to 2013, and rendering them a source of profit.

An option, as we mentioned above, is a contract that gives its holder the right to buy or sell an underlying asset at a specific price, on or before a certain date. Which is precisely what our European car company in the example above bought when it ‘hedged’ against the volatility of euro-dollar exchange. A basket option, however, is more complex because it involves

not one asset (e.g. the dollar), but a group or 'basket' of assets, which can include commodities, securities or currencies. Deutsche and Barclays understood that such baskets could be used to sabotage financial and tax rules and regulations and generate premium business with juicy profits (and bonuses) to boot.

For good many reasons discussed at length in financial literature and the media, like many other countries, the US government prefers longer-term investments over short-term speculations. The US has imposed, therefore, certain rules that specify that profits from investments held for less than a year are taxed at a rate of 39.6%. Trades held for 2 years or more, on the other hand, are treated as long-term capital investment and are charged in the US at the 20% capital gains rate. A number of successful hedge funds, however, make their money from hi-frequency trading, a core business model, and as such would be taxed (or their clients would) at the higher rate of 39.6% in the US. Deutsche and Barclays came to the rescue of those hedge funds and their clients, creating a semblance that those hi-frequency trades were longer term capital gains, subject to the lower capital gain tax.

Deutsche Bank developed and marketed a scheme it named 'Managed Account Product Structure' (MAPS). At Barclays, a similar scheme went by the acronym COLT. Under this scheme the two banks would hire the hedge fund to oversee a portfolio or a basket of shares options. The hedge fund, in turn, bought a two-year option linked to the portfolio. The reality was that the hedge fund controlled these portfolios completely and would trade frequently. These transactions were not taxed as short-term trades because the bank did not make profit out of them. The bank sold an option on those basket to the hedge funds, and hence, they were the one that made the profit. The hedge funds who traded in the basket of options often made good profits. But they did not pay the 39.6% tax on their profitable trading either because strictly, they only held 'options' on the entire baskets, and they held those options for at least two years (rarely,

in turned out, a day or two more than two years). The resulting profits from short-term trading were presented as long-term capital gains which were subject to a 20% tax rate (previously 15%) rather than the ordinary income tax rate (39%) that would otherwise apply to investors in hedge funds engaged in daily trading.

It was a sham. The US Congressional committee (the Levin Committee) found that often the overall composition of the securities basket changed on a second-to-second basis. One basket option account reviewed by the Securities and Exchange Commission (SEC) was found to have experienced 129 million orders in a year. ³ These were clearly short-term trades. The schemes marketed by Deutsche and Barclays had no other purpose but to sabotage the short-term trading's regulations.

The scale of the business was impressive. From 1998 to 2013, Deutsche Bank AG and Barclays Bank Plc, sold 199 basket options to hedge funds who conducted, in turn, more than \$100 billion in trades. One hedge fund, RenTec, purchased from Deutsche Bank a total of 29 basket options with terms exceeding one year, generated about \$34 billion in trading profits. A SEC examination estimated that between April 2003 and October 2007, five hedge funds utilising MAPS options, including RenTec, had "saved a total of \$779 million in taxes by exercising the option after one year."² Another SEC examination report on Barclays COLT option, used by RenTec as well, led to deferral of \$140 million of taxes over a five-year period from 2002 to 2007. ³

The banks did well out of the business, charging hedge funds fees for the financing, trading, and other services. They also loaned the hedge funds money to finance their trading in what was in the banks' proprietary accounts and reaped the resulting income. RenTec alone generated more than \$1 billion in financing and trading fees for Deutsche and Barclays. The US Senate report concluded that the scheme was an arrangement that "makes no economic sense outside of an effort to bypass federal taxes and

leverage limits" (p.2). In reality, the "option" functioned as little more than a fictional derivative, permitting the hedge fund to cast short-term capital gains as long-term gains and skirting regulations on legal limits for a customer's U.S. brokerage account².

² Deutsche and Barclays were not alone. It is generally believed that the first basket option structure have been designed by the Royal Bank of Canada (RBC) in 1996. The RBC marketed a basket option structure using a derivative option on a managed trading account in order to circumvent Canadian leverage restrictions of Regulation T. Similar ruses were often used to minimise when minimising the exposure to withholding taxes, and have been a popular loophole exploited by hedge funds since the 1990s (<http://www.businessinsider.com/irs-eyes-basket-options-tax-loophole-2013-7?IR=T>). Indeed, the MAPS basket option product at Deutsche Bank evolved from a similar product called MAIDS, which was initially designed by National Westminster Bank (NatWest). In 1998–1999, Deutsche Bank acquired NatWest Securities, including the team that had worked on the MAIDS, and brought over almost the entire group to help Deutsche Bank establish its Global Prime Services business.¹⁸⁸ At Deutsche Bank, the team refined the MAPS structure, using Deutsche Bank's trading platform to create facilities that would allow a basket option holder to place orders and execute trades directly through Deutsche Bank's proprietary trading accounts.¹⁸⁹ p.34-35 (word for word from report)

6. The Regulatory Landscape of Derivative Contracts

If derivatives and other sophisticated financial instruments can be used as tax avoidance tools, international and European regulations are decidedly behind the curve. In this section we provide a summary of the current state of play of European regulation. The summary is brief, because regulations are brief as well.

6.1. *BEPS and sophisticated financial instruments*

As mentioned above, MNCs are avid consumers of derivatives, and among other uses, they also 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.

Among these, 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).

The working premise of BEPS is that MNCs should end the damaging practice of inflating their costs in high-tax countries and shifting the majority of their profits into low-tax jurisdictions. The scope of the project

is thus to overhaul national tax systems but also international tax treaties, which are, by and large, the lifeblood of tax avoidance and evasion practices (Baker 2013). Not least, BEPS is meant to effect a behavioural change in the attitudes of both taxpayers (fostering a more restrained and conforming attitude towards taxation) and tax authorities (increasing self-confidence and aggressiveness towards the abuse of regulatory regimes).

Despite the relative appreciation and success that BEPS has enjoyed to date, as far as we can estimate, 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 and something requiring regulatory attention, 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 or at length 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 (PwC 2014; EY 2016). BEPS has already made strides in some of these areas (specifically the first two), whilst in others implementation is 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 (like 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, at least for the moment, from a chronic understaffing problem – there simply are not enough human resources devoted to this issue.

6.2. *The Role of the Financial Sector in Tax Planning- The EU*

Since February 2015, the European Parliament has set up special committees with the remit of looking, broadly, into taxation issues affecting the European Union. Already numbering four consecutive iterations, these committees have mostly an advisory role, and their mandate includes writing a final report based on a number supporting analyses, which also comprises a set of recommendations for the European Parliament's consideration³. The first committee, TAXE, dealt merely with the compatibility of tax rulings within the EU, and made suggestions regarding how to interpret and apply diverging national tax legislations, especially in the context of stringent State Aid rules; the current committee, TAX3, already introduces more sophisticated themes such as digital taxation or elusive financial crimes, particularly in the context of repeated revelations regarding tax avoidance (Luxleaks, Panama Papers, etc.).

The analyses supporting the three reports that have been published so far (with the fourth one from the TAX3 committee in the pipeline) are more akin to case studies forming the basis for the grander report. These

³ <http://www.europarl.europa.eu/committees/en/tax3/home.html>

range, for instance, from 'information exchange between national tax administrations' and 'the influence of EU law on taxation in EU countries' overseas territories' to 'the impact of Panama Papers schemes on the economy and finances of member states' and 'cryptocurrencies and blockchain'. They are indeed indicative of the broad remits of these committees.

Among them, however, is also a study on "The Role of the Financial Sector in Tax Planning"⁴, the only study looking particularly at 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 facilitated particularly 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).

We outline the mechanisms and the channels through which tax planning is made operational in Table 1. It essentially involves the manipulation of the rules and regulations governing the main pillars of taxation: location, pricing, qualification, and identity. Many of the mechanisms outlined in the study involve outright evasion, fraud, and misrepresentation, but there are a few, particularly undertaken through the channel of the qualification of capital flows, which involve creative financial engineering. Some examples, which we already mention in our report,

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[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)

include the creation of equity-debt hybrids, the creation of synthetic debts out of shares, or the conversion of ordinary investment income into lower-taxed capital gain. In the TAXE2 study, these schemes are simply outlined and are not analysed at length, but they are part and parcel of a wider narrative that emphasises the importance the financial sector has (or should have) on the construction and operation of any fair and efficient taxation system. As discussed, this study was included in the final report presented to the European Parliament, which adopted some of its conclusions as important building blocks any commission tasked with the issue of taxation should take into account in the drafting of future European legislation⁵. As yet, in our estimation, these insights have not been legislated on, and the two committees that ensued TAXE2 – PANA and TAX3 – have by and large abandoned the issue of financial engineering in tax avoidance and evasion.

⁵ <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P8-TA-2016-0310+0+DOC+XML+V0//EN&language=EN>

CHANNEL**MECHANISM**

CHANNEL	MECHANISM
LOCATION	<ul style="list-style-type: none"> ○ Investing in mutual funds through a tax haven account ○ Double dip interest deduction ○ Double non-taxation ○ Partner hip/corporation hybrid ○ Shifting foreign tax credits ○ 'Permanent establishment' avoidance schemes ○ Swap payments received as non-taxable foreign source income ○ Mutual funds routing commodity activities through offshore shell corporations
PRICING	<ul style="list-style-type: none"> ○ Shifting profit offshore through abusive transfer pricing arrangements ○ Remuneration for intangible assets held offshore ○ Risk transfer schemes – cost contribution arrangements ○ Holding accounts in 'insurance wrappers' ○ Excess-profit rulings
QUALIFICATION	<ul style="list-style-type: none"> ○ Equity/debt hybrid ○ Tax loss generator scheme ○ Conversion of accumulated losses into cash ○ Call option overlay ○ Shares-as-debt arrangements ○ Collateralised loan/sale & repurchase hybrid ○ Converting ordinary income in capital gains (or other lower-tax-rate receipts) ○ Corporate-driven tax planning ○ Allowance for corporate equity abuses ○ Private annuity trusts ○ Charitable remainder unitrust ○ Disguising dividends as portfolio interest
IDENTITY	<ul style="list-style-type: none"> ○ Mirror trades ○ Passive partnerships ○ Incorporation of private activities ○ Income or asset diversion ○ Inheritance tax evasion ○ Undeclared accounts in offshore centres ○ Hiding assets in bank accounts opened in the name of offshore entities ○ Difficult to trace cash withdrawals

Table 1. TAXE2 Aggressive Tax Planning using Financial Engineering

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.

6.3. 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 undertakings⁶. 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.

Specifically, Articles 8, 16 and 17 of the Directive make provisions as to the taxation of financial derivatives and other instruments. Within the directive, the general principle in the EU is formulated in Article 8, point 1a of the Directive. The article reads:

"[m]ember States shall permit or require, in respect of all undertakings or any classes of undertaking, the measurement of financial instruments, including derivative financial instruments, at fair value."

⁶ Amending Directive 2006/43/EC of the European Parliament and of the Council and repealing Council Directives 78/660/EEC and 83/349/EEC.

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 qualifies that the general principle does not apply to

- (a) non-derivative financial instrument held to maturity;
- (b) loans and receivables originated by the undertakings and not held for trading purposes;
- (c) interests in subsidiaries, associated undertakings and joint ventures, equity instruments issued by the undertaking, contracts for contingent consideration in a business combination, and other financial instruments with such special characteristics that the instruments, according to what is generally accepted, are accounted for differently from other financial instruments; contracts for contingent consideration in a business combination, and other financial instruments with such special characteristics that the instruments, according to what is generally accepted, are accounted for differently from other financial instruments.

Article 5 of the Directive 2013/34 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 (emphasis added).

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 block, 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 the financial sector. In January 2018, a senior partner in a large international law firm told us that despite the recent regulatory moves tax considerations have always been and remain the primary concern when setting up any financial structure including securitisation vehicles "the structure is determined by tax concerns and tax planning, which these days takes a lot of resources". Another senior partner in a London-based law firm shared his frustration with the sluggish speed of EU regulators in adopting some of the market-focused regulations of post-2009 securitisation and trades, despite the fact that "we placed a ready draft of the directive to his desk."

6.4. The European 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 seen 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.

The idea of imposing a minimal tax burden on financial transactions was originally proposed by the economist James Tobin in 1961. Back then, Tobin, along with many other Keynes-inspired economists, was concerned that the rapidly developing international financial market may generate excessive trading, the benefits of which were not shared by the wider economy. The old model of the manufacturing, ‘real’ economy was being increasingly outpaced by the more dynamic financial industry. In the decades that followed, the idea of a Tobin tax fell out of favour with the prevalent paradigm of market-driven and financially innovative capitalism, with at a practical level, there was no global agreements as to how to implement such a measure to avoid differential arbitrage by the industry.

In light of the crisis of 2007-09, the EU authorities seem to have overcome such disagreements at least partly. The FTT proposal, which is currently under discussion in the European Council, involves a minimum 0.1 % tax rate for transactions in all types of financial instruments, except for derivatives which would be subject to a minimum 0.01 % tax rate.

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. These revenues are calculated on the basis of a tax rate of 0.01 percent for derivatives. At a 0.005 rate, total revenue would dip to 16.6 billion euros (Chrysoloras 2018). Altogether, an FTT imposed in 10 EU countries could generate about

19.6 billion euros of annual revenue. These estimates are contingent on the shape and outcome of Brexit (with London being the main European hub for derivatives trade). Those estimates are based on the assumption that tax could be collected abroad, including in the U.K. after Brexit, on transactions involving a counterparty from one of the participating countries.

The idea of an FTT has come under criticism. Market-advocating parties continue to believe that any such tax would not interfere with the mechanism of an efficient market and discourage innovation, a position expressed by the UK at the EU debate on FTT. But interestingly in the progressive circles, FTT is also deemed to be a problematic political measure, implemented far too late from its initial inception (1961-63), and targeting the wrong parts of the financial system, where the markets are most organised and transparent. Both sides of the critique agree that while there will be some tax revenues harvested through the measure, the higher costs of transactions in the financial markets as a result of FTT will be passed on to the final consumer of financial instruments – the agents of the ‘real economy’, the households and the corporations - leaving the financial actors relatively immune to the costs of the new regulation. At the same time, some of the most evasive and parasitic aspects of financial trade, such as high frequency trading mentioned above, or the rapidly growing wealth management industry, remain outside the scope of new taxation measures (Grahl and Lysandrou 2003).

At present, plans on FTT in the EU are at a standstill⁷. We believe that the blockage in the practical implementation of the FTT underscores the points of these critique. While there has been some progress on the scope of the FTT for transactions in shares, the taxation of transactions in derivatives remains a key open question. The EU authorities admit that

⁷ Progress on this legislative package can be traced at: <http://www.europarl.europa.eu/legislative-train/theme-deeper-and-fairer-internal-market-with-a-strengthened-industrial-base-taxation/file-financial-transaction-tax>

'further reflection is required on the taxation principles to be applied for the FTT (residence principle, issuance principle)' and that additional work is needed on the mechanism to be used for collecting the FTT.

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. It may lead, however, to new set products that may affect the apparent location of derivatives contracts.

7. The FINTECH Sector: an Emergent Concern

Fintech is a technology-anchored universe that is changing very rapidly. Many of the innovations extend beyond financial services, where they have enabled a range of new fund-raising and investment opportunities on webs of platforms in cyberspace. The evolution of fintech has been both fast and diverse, and it is clear that it can develop in any imaginable and as yet, unimaginable directions. Currently, the aspect of fintech that raises particular concern from the perspective of illicit finance and tax abuse involves crypto currencies, blockchain technology, data mining, peer to peer (P2P) lending, crowdfunding, money transfer services and smart contracts.

Broadly, the rise of fintech is seen as a positive development. Mark Carney, the governor of the Bank of England, recognised fintech's 'huge potential for making the financial system more inclusive, efficient, effective and resilient' (Carney 2017, 12). As we reported above, the EU has commissioned studies of the effect of cryptocurrencies and blockchains on avoidance and evasion. In March 2018 the European Commission adopted an action plan on FinTech to foster a more competitive and innovative European financial sector⁸. The Fed is embracing Fintech too, although with some apprehension.

While technological progress and financial innovation tend to be as forces of economic improvement, fintech poses an unprecedented set of challenges to governance and public welfare. According to Izabella Kaminska of the *Financial Times*, fintech is nothing but the Eurodollar market 2.0⁹. It combines many elements, from encrypted transactions to

⁸ https://ec.europa.eu/info/business-economy-euro/banking-and-finance/fintech_en

⁹ Back in the late 1950s, the Eurodollar market, a market that emerged in London almost by accident, had swiftly plugged a hole in the entire post-war regulatory regime known as the Bretton Woods system.

hidden identities and e-wallets in cyberspace, each of which is perfectly geared to enable crime and tax evasion. Below we consider some of the case studies that capture some of the challenges of the fintech evolution to financial governance broadly and taxation in particular.

7.1. *Cryptocurrencies*

Bitcoin is a currency that virtualises in cyberspace as a reward for solving an algorithm. In 2013, US court officially recognised bitcoin as a convertible decentralized virtual currency; in 2015, the Commodity Futures Trading Commission (CFTC) classified bitcoin as a commodity. Today, bitcoin can be used to pay for things and services, investors use it as an investment, there are places around the world where you can convert bitcoins into real cash, and there are derivatives on the value of bitcoin.

The key problem with bitcoin and other copycat crypto currencies, Kaminska argues, lies in the security/access paradox. “If the sector is easily accessible (highly competitive) it’s not secure, and if it’s secure it’s not easily accessible. Put differently, the more entrants there are, the easier it is for criminal enterprises to exploit the sector for their own ends” (Kaminska 2016). And that is exactly what is happening in the cryptocurrency space. Moreover, serious crime, such as child pornography, drug and arms trade are attracted to cryptocurrencies because of its efficiency, secrecy and speed. Petty crime, like selling medicine online, ghost-writing essays for inept students, also uses crypto for secrecy¹⁰. An Australian study estimates that about 47% of transactions involving bitcoin

¹⁰ Until 2013, the so-called Silk Road (DEF) was the primary e-commerce platform on the dark web. After its founder Dread Pirate Roberts, or Ross Ulbricht, went down, it was succeeded by Alpha Bay and many other dark marketplaces. Dread Pirate Roberts is now in prison serving a life sentence. The authorities still cannot get their hands on most of his Bitcoins.

are conducted on the dark net (DEFIN). *Litecoin* is the second-most popular cryptocurrency preferred by Russians, is now accepted by nearly one third of all dark-web vendors (Katz 2018). The industry rejects any such claims.

The American IRS reacted to the tax implications of the use of bitcoin by treating it not as mere currency, but as a capital asset, subject to rules governing stock and barter transactions when exchanged for dollars. In other words, the IRS considers bitcoin a speculative investment. But for bitcoin users who prefer to trade on the black market, the IRS position is irrelevant. "As a steroid dealer and user... I think of bitcoin as the solution to the problem of illegal tender, our so-called 'paper money' economy," says a personal trainer who accepts the cryptocurrency as payment for his pharmaceutical services. When informed that the 16th Amendment of US Constitution allows the federal government to tax all income from whatever source derived, the trainer shrugged. "I don't believe in that... I never signed or accepted the Constitution, but bitcoin is real. It's real money and it can't be stolen from me" (Bateman 2016).

The IRS successfully sued Coinbase, a leading cryptocurrency exchange, in order to gain access to its customer records. The IRS showed the court that only 802 people reported gains or losses from Bitcoin in 2015. (The court ordered Coinbase to identify more than 14,000 customer accounts to the IRS.) In one survey of more than 2,000 American cryptocurrency owners¹¹ some 57% of respondents said they'd realised gains on their crypto investments, that is, profits the IRS considers taxable. Fifty nine percent of Americans said they had never reported any such gains to the IRS (Wieczner 2018). Early data from one popular tax preparation service shows that only a minuscule proportion—just 0.04%—of US tax filers have reported cryptocurrency gains or losses to the IRS in the first half of 2018. That's far fewer than the 7% of Americans who are estimated

¹¹ Conducted in January by Credit Karma Tax along with research firm Qualtrics.

to own Bitcoin or another cryptocurrency, and who are likely to owe taxes to the IRS on those investments.

Bitcoin is clearly used for tax evasion purposes. By now, bitcoin investors have gained a solid reputation for evasiveness. Some high-profile bitcoin investors have been warning their crypto compatriots to comply with IRS rules. “When I talk to the blockchain community, I’m always pushing them—I’m like, ‘Dudes... pay your taxes.’ Because nobody in that space pays taxes,” Mike Novogratz, a billionaire hedge fund manager who now primarily invests in cryptocurrencies, said at a conference in June. “Listen, the IRS is going to come after people. People are making real money now. So the IRS isn’t stupid”. (Malwa 2018)

7.2. *Bitcoin, Derivatives and Tax Evasion*

Bitcoin could theoretically allow wealthy speculators to complete complicated commercial transactions, such as tax-exempt stock and gold-swapping trades that involve buying agents acting as fronts by using local currencies to facilitate the exchange. That is exactly what appears to be happening in response to first stage of regulations of cryptocurrencies. The sale of bitcoin is, as mentioned above, is a taxable event; but a using bitcoin as *a collateral for a loan* is not. There has been a massive expansion of bitcoin-backed credit nurturing the shadow banking system. Similarly, now that bitcoin is recognised as a currency, financial derivatives based on bitcoin are also available, and those transactions are not subject to taxation.

In a world where anyone can create money, crime groups have interest in launching their own money transmission services and

popularising them as legitimate “fintech” alternatives. As more and more jobs and services go off the official economic radar into cyber universe.

This suggests that cryptocurrencies have the potential to become What University of California-Irvine law professor Omri Marian has dubbed ‘super tax havens’ (2013). In fact, all the evidence so far suggests they already are. To date, there exist no effective enforcement mechanisms to track the online movement of bitcoins or other cryptocurrencies. Cryptocurrency advocate Trace Mayer estimated that if even 1% of funds currently sitting in offshore accounts were transferred into bitcoin, the value of this virtual currency would grow exponentially. Since the number of Bitcoins in circulation is currently capped at 21 million, if these billions of offshore dollars migrate to that cryptocurrency, the worth of a single bitcoin could rise from \$580 to nearly \$3 million.

7.3. *ICOs*

Speaking of derivatives and further innovations, we turn to the third facet of crypto: initial coin offerings (ICO) and initial token offerings (ITO). In the cyber financial universe, ICO launches mimic an IPO of shares in a traditional stock market. Only that an ICO offering is an investment in a company launching a new cryptocurrency. In a relatively unregulated environment, the range of ICO/ITO schemes appears to be limited only by their creators’ imagination.

A study of recent offerings classified them into several categories: 81% were pure scams, ~6% failed, ~5% had gone dead, ~8% went on to trade on an exchange”¹². In US alone, naïve investors have drained more than a \$1 billion into these 271 projects, with some of them still raising

¹² <https://news.bitcoin.com/80-of-icos-are-scams-only-8-reach-an-exchange/>

funds. So far, only a total of \$273 million has been claimed in the form of lawsuits. Since 2017, over \$9 billion raised in the form of cryptocurrencies¹³.

Faced with such challenges, the authorities are trying to protect the investors. In the US, in almost desperate measure, the SEC launched a fake ICO. The mock website HoweyCoins.com represented a classic example of a fraudulent ICO website that touts an “all too good to be true investment opportunity.” The website includes such details as a misleading and blurry white paper, guaranteed returns claims, celebrity endorsements, and a countdown clock that is “quickly running out on the deal of a lifetime.” When a user clicks on “Buy Coins Now,” they are lead to the website Investor.gov, which was established by the SEC to help investors avoid fraud. The site warns that if users would have responded to an investment offer like HoweyCoins, they “could have been scammed”. (Partz 2018)

In the UK, the bank Santander had conducted a ‘fake job advert’ experiment to discover how many Brits would apply for a job as a money mule – a post that helps criminals to launder money. To appear alluring, the job ad drew heavily on “fintech” buzz. Out of 2,000 people presented with the ad, one third said they would apply for the job while only 15 per cent rightly identified the role as that of a money mule. Of those who fell for the ad, seven per cent said they would still apply for the job even after they were informed it was for a role as a money mule (Kaminska 2018).

This may, again, be seen as a very isolated test, but the scale of competition in the rapidly evolving industry creates a structural vulnerability. Even legitimate entrants can be easily taken advantage of by groups seeking to launder funds. The more money service companies there are, the easier it is for criminal networks to spread and disguise their illicit business and/or move from one service provider to the next as they get frozen out. Since many of their strategies involve the employment of money

¹³ <https://www.ccn.com/ico-scams-have-raised-more-than-1-billion-report-claims>

mules, the presence of more providers makes it easier to extend the life cycle of the money mules in the system before they get detected and frozen out.

8. Conclusion and Policy Implications

This study 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. The study of 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.

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, which took place 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 employees, as well as ex-employees of any of the above. We also interviewed some clients of the private banking and the wealth management industry.

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.

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.

The second set of conclusions we reached, not anticipated during the inception stage of the COFFERS project, was the degree to which a new re-alignment of high tech and finance, the so-called fintech sector, may not only be transforming the nature of finance, but also the essence of the techniques of tax avoidance and evasion. Izabella Kaminska's notion of 'Fintech as Offshore - II' is, in our estimation, broadly accurate. While like any other aspect of finance and financial innovation, fintech responds to real needs and often comes up with good solution to an economic opportunity, it can, and currently is, being often exploited by rogue elements seeking to either avoid or evade tax, launder money, organised crime, avoid visibility or defraud customers.

Despite the recent political attention given to the phenomenon of illicit finance, academic literature and empirical studies on financial innovation and tax abuse remain scant. Broadly, academic and policy

understanding of the link between financial instruments and taxation falls into three main approaches. First, 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.

Second and 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 abuses. One set of techniques may be described as techniques of *balance sheet arbitrage*. These techniques have developed with the purpose of changing, transforming or eliminating items on the corporate balance sheet, as they make their way to the corporate income statement – the latter is the relevant document for taxation purposes. Financial advisers are deployed to add layers of sophistication to known practices including cost inflation, balance set arbitrage and manipulation of the economic impact of an asset held by the firm. This literature mirrors the more basic (and often illicit) practices of identified by the OECD's research on BEPS (including invoice manipulation, techniques of shifting and cost inflation). It shows that financial derivatives are often used to minimise and/or obscure the economic engagement of a firm's asset.

Third, these types of post-hoc uses of financial instruments are to be differentiated by the techniques of financial innovation, including derivatives that are used by the financial industry in tax planning as well. In banking, practices of investment and wealth managements, finance derivatives typically are embedded in the economic engagement of an asset, or a set of assets. Unlike in the non-financial realm, tax considerations, including aggressive tax planning, tend to emerge early at the planning stage of the structure themselves and involves tax specialists from the very start. From their very inception, in other words, financial structures are designed with one eye to the tax exposure of the asset.

Current research into the use of derivatives and other financial instruments, scant as it is, is focused entirely on balance sheet arbitrage and as core techniques on 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 of financial instruments - 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.

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, starting from large banks and down to boutique asset management firms. 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 approach to tackling some of the pitfalls of MNEs straddling heterogeneous national taxing systems, do not focus directly on the opportunities created by financial engineering with regards to tax avoidance or evasion.

One major area of the impact of such chasm is BEPS. Despite the relative appreciation and success that BEPS has enjoyed to date, as far as we can estimate, BEPS does have a potentially major blind spot in its scope. It is the issue of sophisticated financial instruments put to use by MNEs for tax planning purposes. BEPS makes no mention, for instance, of derivatives, which are part and parcel of the financial toolkit that MNEs 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 (Trocme and Sylwander 2017). There are proposals at the core of BEPS which will affect the manner in which derivatives have traditionally been used by MNEs in their day-to-day business, but those emerge unintentionally. The industry is fully aware of those unintended consequences of BEPS and gears itself accordingly.

Four dimensions of BEPS' coverage are of particular relevance: treaty access, hybrids, interest deductions, and risk transfers (PwC 2014; EY 2016). BEPS introduces changes to limit the access to tax treaties (like 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. BEPS addresses, in addition, 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 impact in this area is very wide and on-going. Guarantees, captive insurance arrangements, and of course derivatives may be targeted as a result. Finally, the issue of risk transfer might have some bearing on the employment of derivatives for MNCs' tax planning activities. 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 MNEs could thus be subjected to queries regarding risk management capacities, both on the financial and on the operational fronts (PwC 2014).

8.1. European Regulations of Derivative and Financial Instruments

Compared with the US, the situation in Europe with regards to the regulation of derivatives and other financial instruments is probably worse, due to two related issues.

First, there is an issue of general paradigms and regulatory philosophy. European approach gives the illusion that it is more systemic than the US. 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 we argue that the two level

approach does not build into a comprehensive, systemic treatment of financially enabled tax abuse by 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 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 also increasingly, capital markets.

US regulations target those capital markets and adopt what appear as less systemic, but at the same time more granular approach. The European, ostensibly systemic approach ensures 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?

8.2. Policy Recommendation

It would have been ideal, as we wrote above, to be able to replicate some of the US studies in order to provide a measure of the degree of abuse through financial engineering that takes place in Europe. But such exercise would have required not only a great deal of resources (not available to us at this point), but also the building of unique set of teams and expertise to

mirror the unique philosophy of European regulations. Moreover, the apparent structural fragmentation of taxation in the EU renders such task ever more difficult.

Difficult as it may, it does not mean that the task is unnecessary. Our policy recommendation at this point is, therefore, fairly simple and straightforward. 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. 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, hopefully, by a more uniform response at the political level.

8.3. FINTECH

Today's scope for the financial sable interplay between technology and finance is quite unprecedented. This is an area that is changing at great speed. The industry shifts from one buzz to another. Big 'issues' of one day – cryptocurrencies, block chain technology, P2P lending – remain 'big' in public discourse rarely for more than a year. If three years ago, the link between fintech, tax and illicit finance was barely known and not even anticipated by the COFFERS project, today there is already evidence that a considerable portion of the fintech industry facilitates one or another form of abuse.

Again, we are sorry to report that the US is ahead, and Europe is behind the curve. The Federal Reserve, the US Treasury, and some US

research outfits have been conducting research into the phenomenon. There is little to match their efforts on the European side. At the moment, London is at the heart of the European fintech sector, and the effect of Brexit, could alter current equations considerably. Most importantly, fintech is not one or even a set of technologies, but a kind of Trotskyite 'permanent revolution' in finance, driven and motivated, at its very core, by tax avoidance, probably evasion and illicit activity. It is an area of change that Europe should be paying much greater regulatory attention than it has to date.

9. Bibliography

- Aubry, Manon, and Thomas Dauphin. 2017. "Opening the Vaults: The Use of Tax Havens by Europe's Biggest Banks." Oxfam.
- Baker, Philip. 2013. "Improper Use of Tax Treaties, Tax Avoidance and Tax Evasion." In *United Nations Handbook on Selected Issues in Administration of Double Tax Treaties for Developing Countries*, by United Nations, edited by Alexander Trepelkov, Harry Tonino, and Dominika Halka, 383–401. UN. <https://doi.org/10.18356/fd355079-en>.
- Bateman, Oliver Lee. 2016. "Bitcoin Might Make Tax Havens Obsolete." *Motherboard* (blog). June 22, 2016. https://motherboard.vice.com/en_us/article/wnxzpy/bitcoin-might-make-tax-havens-obsolete.
- Borstell, Thomas, and John Hobster. 2014. "Global Transfer Pricing Tax Authority Survey." Ernst and Young. [https://www.ey.com/Publication/vwLUAssets/EY-global-transfer-pricing-tax-authority-survey/\\$FILE/ey-2014-global-transfer-pricing-tax-authority-survey.pdf](https://www.ey.com/Publication/vwLUAssets/EY-global-transfer-pricing-tax-authority-survey/$FILE/ey-2014-global-transfer-pricing-tax-authority-survey.pdf).
- Carney, Mark. 2017. "The Promise of FinTech - Something New Under the Sun?" 2017. <http://www.bankofengland.co.uk/speech/2017/the-promise-of-fintech-something-new-under-the-sun>.
- Cecchetti, Stephen, and Kermit Schoenholtz. 2017. *Money, Banking and Financial Markets*. 5 edition. Dubuque: McGraw-Hill Education.
- Chrysoloras, Nikos. 2018. "EU Sees \$23.5 Billion in Revenue From Financial-Transaction Tax," May 14, 2018.

<https://www.bloomberg.com/news/articles/2018-05-14/eu-sees-23-5-billion-in-revenue-from-financial-transaction-tax>.

Demere, Paul, Michael P. Donohoe, and Petro Lisowsky. 2018. "The Economic Effects of Special Purpose Entities on Corporate Tax Avoidance." SSRN Scholarly Paper ID 2557752. Rochester, NY: Social Science Research Network.
<https://papers.ssrn.com/abstract=3269032>.

Donohoe, Michael P. 2011. "Financial Derivatives in Corporate Tax Avoidance." PhD, University of Florida.
<http://ufdc.ufl.edu/UFE0043096/00001>.

———. 2014. "Financial Derivatives in Corporate Tax Avoidance: A Conceptual Perspective." *The Journal of the American Taxation Association* 37 (1): 37–68.

———. 2015. "The Economic Effects of Financial Derivatives on Corporate Tax Avoidance." *Journal of Accounting and Economics* 59 (1): 1–24.
<https://doi.org/10.1016/j.jacceco.2014.11.001>.

EY. 2016. "International: Treading Carefully through the Murky Labyrinth of Intra-Group Financial Derivatives."
<https://www.ey.com/Publication/vwLUAssets/EY-international-treading-carefully-through-the-murky-labyrinth-of-intra-group-financial-derivatives/%24File/EY-international-treading-carefully-through-the-murky-labyrinth-of-intra-group-financial-derivatives.pdf>.

Fino, Jessica. 2017. "UK Banks Make £9bn in Profits in Tax Havens." *Economia*, March 27, 2017.
<https://economia.icaew.com/news/march-2017/uk-banks-hold-9bn-in-profits-in-tax-havens>.

- GAO. 2011. "Financial Derivatives: Disparate Tax Treatment and Information Gaps Create Uncertainty and Potential Abuse." United States Government Accountability Office.
<https://www.gao.gov/assets/590/585330.pdf>.
- Graham, John R., and Clifford W. Smith. 1999. "Tax Incentives to Hedge." *Journal of Finance* 54 (6): 2241–62.
- Grahl, John, and Photis Lysandrou. 2003. "Sand in the Wheels or Spanner in the Works? The Tobin Tax and Global Finance." *Cambridge Journal of Economics* 27 (4): 597–621.
<https://doi.org/10.1093/cje/27.4.597>.
- Gross, Phillip. 2010. "Withholding Tax on Total Return Swaps Owned by Foreign Persons – Recent IRS Director Directive and Proposed Legislation." Marcum LLP. 2010.
<http://www.marcumllp.com/insights-news/withholding-tax-on-total-return-swaps-owned-by-foreign-persons-recent-irs-director-directive>.
- HMRC. 2014. "Finance Bill 2014: Measures with Immediate Effect." GOV.UK. 2014.
<https://www.gov.uk/government/publications/finance-bill-2014-measures-with-immediate-effect>.
- Hull, John C. 2014. *Options, Futures, and Other Derivatives*. 9 edition. Boston: Pearson.
- JCT. 2011. "Present Law And Issues Related To The Taxation Of Financial Instruments And Products." The Joint Committee on Taxation.
<https://www.jct.gov/publications.html?func=startdown&id=4372>.
- Kaminska, Izabella. 2016. "Fintech's Security/Access Paradox Problem." *FT Alphaville* (blog). October 3, 2016.

<https://ftalphaville.ft.com/2016/10/03/2176471/fintechs-securityaccess-paradox-problem/>.

———. 2018. "Fintech as a Gateway for Criminal Enterprise." *FT Alphaville* (blog). January 12, 2018.

<http://ftalphaville.ft.com/2018/01/12/2197610/fintech-as-a-gateway-for-criminal-enterprise/>.

Katz, Lily. 2018. "Criminals May Ditch Bitcoin for Litecoin, Dash, Study Says," February 8, 2018.

<https://www.bloomberg.com/news/articles/2018-02-08/criminals-are-ditching-bitcoin-for-litecoin-and-dash-study-says>.

Kleinbard, Edward. 1991. "Equity Derivative Products: Financail Innovation's Newest Challenge to the Tax System." *Texas Law Review* 69: 1319–68.

Malwa, Shaurya. 2018. "ICO Scams Have Raised More Than \$1 Billion, Report Claims." CCN. May 19, 2018. <https://www.ccn.com/ico-scams-have-raised-more-than-1-billion-report-claims/>.

Marian, Omri. 2013. "Are Cryptocurrencies Super Tax Havens?" *Michigan Law Review First Impressions* 112 (1): 38–48.

Mayberry, Michael A., Sean T. McGuire, and Thomas C. Omer. 2015. "Smoothness and the Value Relevance of Taxable Income." *The Journal of the American Taxation Association* 37 (2): 141–67. <https://doi.org/10.2308/atax-51252>.

McConnell, A. 2007. "IRS Forms New Team to Oversee Derivatives." *Bond Buyer* (blog). June 8, 2007.

McConnell, Pat. 2015. "Making Money Is Taxing." *The Conversation*. 2015. <http://theconversation.com/making-money-is-taxing-49283>.

- OECD. 2017. "Background Brief - Inclusive Framework on BEPS." Organisation for Economic Co-operation and Development. <http://www.oecd.org/tax/beps/background-brief-inclusive-framework-for-beps-implementation.pdf>.
- . 2018. "OECD/G20 Inclusive Framework on BEPS: Progress Report July 2017-June 2018." Organisation for Economic Co-operation and Development. <http://www.oecd.org/tax/beps/inclusive-framework-on-beps-progress-report-july-2017-june-2018.pdf>.
- Partz, Helen. 2018. "SEC Launches Mock ICO to Show Investors Warning Signs of Fraud." Cointelegraph. May 16, 2018. <https://cointelegraph.com/news/sec-launches-mock-ico-to-show-investors-warning-signs-of-fraud>.
- Polillo, Simone. 2011. "Wildcats in Banking Fields: The Politics of Financial Inclusion." *Theory and Society* 40 (4): 347–83. <https://doi.org/10.1007/s11186-011-9146-4>.
- PwC. 2014. "Relevance of the OECD BEPS Project to Derivatives and Financial Instruments." https://www.ibfd.org/sites/ibfd.org/files/content/pdf/dfi_2014_06_int_3.pdf.
- Raghavan, A. 2007. "IRS Probes Tax Goal of Derivatives." *Wall Street Journal*, July 19, 2007.
- Raskolnikov, Alex. 2011. *Tax Reform and the Tax Treatment of Financial Products*. Washington, D.C: Government Printing Office. <https://waysandmeans.house.gov/UploadedFiles/Raskolnikov12611.pdf>.
- Smith, Clifford W., and Rene M. Stulz. 1985. "The Determinants of Firms' Hedging Policies." *The Journal of Financial and Quantitative Analysis* 20 (4): 391–405.

- Smith, Robert, and Thomas Hale. 2017. "Banks Push Total Return Swaps as European Credit Booms." *Financial Times*, October 16, 2017. <https://www.ft.com/content/a54ff9b4-b23e-11e7-aa26-bb002965bce8>.
- Stulz, René M. 1996. "Rethinking Risk Management." *Journal of Applied Corporate Finance* 9 (3): 8–25. <https://doi.org/10.1111/j.1745-6622.1996.tb00295.x>.
- Trocme, Johan, and Robin Sylwander. 2017. "The Future of the Corporate Treasury." Nordea. <https://www.finyear.com/attachment/600503/>.
- Warren, Alvin C. 2004. "US Income Taxation of New Financial Products." *Journal of Public Economics*, ISPE Conference, 88 (5): 899–923.
- Weisbach, D. A. 2005. "Problems with the Taxation of Financial Instruments." Teaching Notes. University of Chicago Law School.
- Wieczner, Jen. 2018. "Bitcoin Investors Aren't Paying Their Cryptocurrency Taxes." *Fortune*. February 13, 2018. <http://fortune.com/2018/02/13/bitcoin-cryptocurrency-tax-taxes/>.