Focusing anti-avoidance policies to target MNE tax avoidance activities

1 Abstract

A mixed methods approach is implemented to generate new insight into an area where issues of confidentiality drive a lack of data. This study aims to enhance our understanding of tax planning phenomena and the way in which US MNEs are able to manage their Effective Tax Rate (ETR). It is an innovative study, providing new insight into the way in which tax planning is conducted within the MNE.

Mixed methods of qualitative and quantitative research are used including: a quantitative study examining 94 large US MNEs from the group perspective; in-depth interviews with subsidiary managers and tax experts to obtain their insights and views; a series of four case studies using published accounting data and other company information, providing detailed analysis of the companies involved over a ten-year time horizon.

The study reports on new findings into the tax planning process which policy makers can use to improve their targeting and the effectiveness of their anti-avoidance policies.

2 Introduction

Governments and supranational bodies are attempting to act to shut down corporate tax avoidance by multinational enterprises. This paper argues that a greater, more nuanced understanding of the factors that drive the adoption of tax planning strategies is needed. To be successful, policy making must be embedded in a comprehensive understanding of the factors that drive MNEs to adopt the specific strategy that they do. The lack of data in this area, driven by issues of confidentiality means that there is insufficient understanding of what happens inside the 'black box' of the MNE.

This paper reports on a mixed methods research project that was established to understand the diversity of approaches to tax avoidance taken by US MNEs operating in the UK. It has been noted (Hanlon and Heitzman 2010) that there is little understanding of what drives this heterogeneity and that accessing information is difficult. This research therefore contributes significant new understanding to this issue. The next section gives a very brief overview of the key pieces of extant research and what is known on this topic. It concludes that more research is urgently needed to understand the means by which MNEs adopt tax planning strategies.

The following section explains why a mixed methods approach was adopted and the way that this research framework can contribute. The paper then goes on to explain the research methods adopted; this section is longer than in a traditional paper which adopts either a quantitative or qualitative approach as it sets out the methods used for three separate pieces of research and the headline findings. Due to space constraints the paper reports concisely on the findings of the three methodologies employed but then brings these findings together in a longer discussion. The section on limitations of this research and potential areas for future research is fundamental to the conclusions of this work.

3 Literature Review

Research in the area of tax avoidance from an IB perspective, has grown over recent years. Tax is a cross cutting issue and work from accounting, public economics and law is also prevalent. This review therefore takes a cross cutting approach to the literature but remains very focused on the question of what drives the heterogeneity of approaches that is observed. Why is it that some MNEs appear to employ aggressive tax avoidance techniques whilst others do not? Government policy aimed at preventing or reducing tax avoidance needs to be based on a fundamental understanding of what drives the differences between countries.

One key stream of research into tax avoidance has attempted to evaluate the size and scale of the problem. This research concludes that the scale of the problem is significant and that tax avoidance is growing, affecting many of the key decisions MNEs take: where to invest, how much to invest and how to fund such investment

A second stream considers specific avoidance techniques, including mechanisms for shifting profits from high to low tax jurisdictions, the use of tax havens and the impact of tax competition between countries. IB research is well placed to take a holistic view of the impact of tax policy on corporate behaviour and strategy. Research in this area has looked at the extent of the use of different mechanisms including (but not limited to): transfer pricing manipulation, the use of internal company debt, the role of intellectual property (IP), the choice of locations and the role of size of the company. This work tends to focus on one (or more) avoidance mechanisms, considering the functioning of the mechanism itself, the extent of its use and the implications for governments and policy makers. The research does not address the issue of why some companies adopt and use that mechanism more than others and little research is able to explicate the different overall positions that are adopted by MNEs. Little is therefore known about what drives the heterogeneity between companies which consequently means that the knowledge base that policy makers can use to develop effective policy is limited.

The following sections review the limited literature which considers factors that affect the ability of MNEs to avoid tax. The company's characteristics, including size, ownership of IP, the role women within the governance of the company, its approach to Corporate Social Responsibility (CSR), how international the company is (the degree of multinationality) and its use of tax havens. Hypotheses are generated which are tested in the quantitative element of the research and further explored in the interviews and case studies.

Previous work which considers the size of companies and the impact on their ETR has mixed findings. Some research finds that larger firms are associated with more tax avoidance (Benvignati 1985; Zimmerman 1983; Lanis and Richardson 2015) and others finding a negative association (Porcano 1986), or none (Shevlin and Porter 1992; Gupta and Newberry 1997). Rego (2003) found higher worldwide ETRs for larger firms in a broad sample of US domestic firms and MNEs. All these studies used single year measures of ETR and considered only the GAAP rather than cash ETR. In the most recent work to consider this aspect of tax avoidance, Rego considers economies of scale that should offer larger companies greater opportunity to reduce their tax burden. Some counter pressures do exist however as larger companies are thought to be under greater levels of scrutiny reducing opportunistic tax avoidance. This therefore leads to the development of the first hypothesis:

H1: The size of the MNE is negatively related to LR ETR.

Intellectual property (IP) assets can be moved overseas to low tax jurisdictions with relative ease. Royalty payments for the use of IP can therefore be used to reduce the taxable profits in higher tax countries and increase them in lower tax countries. Empirical research examining TP (Vaitsos 1974; Grubert 2003) finds that companies with high levels of IP have higher levels of TP manipulation. Dischinger and Riedel (2011) find that the subsidiaries of European MNEs facing lower corporate tax rates have higher levels of intangible investments. MNEs with higher levels of intangible assets (Jones and Temouri 2016) or R&D intensities (Desai Foley and Hines 2006) are more likely to have subsidiaries in international tax havens. Transfer pricing manipulation in relation to IP can be hard to detect as there are likely to be fewer relevant external arms' length TP with which to compare it (Gravelle 2008, Shackelford et al 2011; Dyreng et al 2008).

Foley et al (2007) find that firms that are more technology intensive have a higher sensitivity of cash holdings to repatriation burden. This indicates that those technology intensive firms hold cash in a way that is particularly sensitive to the tax costs incurred when earnings are repatriated. The importance of IP is considered in the second hypothesis:

H2: *The level of IP is negatively related to LR ETR*

Corporate governance may be a key issue for affecting the tax planning position adopted by the business. Here, the role of women on the board is considered to capture differences that may be driven by individuals. Research shows key differences between male and female executives and directors particularly in terms of their attitude to risk (Torgler and Valev 2010, Francis et al 2014, Barua et al 2010, Huang and Kisgen 2013), their backgrounds (Hillman et al 2002, Singh et al 2008) and their approach to board membership (Eagly et al 2003, Eagly and Johnson 1990, Adams and Ferreira 2009). Boards with higher proportions of female directors appear to adopt higher levels of charitable giving (Wang and Coffey 1992, Williams 2003) and have greater concern for environmental CSR (Post et al 2011). Work has also examined the way in which women appear to work together on a board of directors with evidence that as the number of women on the board increases a critical mass maybe achieved, significantly increasing their influence (Bear, Rahman and Post 2010; Konrad, Kramer and Erkut 2008). Hypotheses 3a and 3b reflect the need to explore the role of women further:

3a: *The proportion of female board directors are positively related to LR ETR*
3b: *Having women in key executive positions (CEOs and CFOs) is positively related to LR ETR*

There is little published research specifically examining the relationship between CSR and tax and there have been calls for more detailed research into this area (Hanlon and

Heitzman 2010; Lanis and Richardson 2015; Muller and Kolk 2015). The research that has been published however, has produced interesting findings. Whilst Davis et al (2016) find that managers and other MNE stakeholders do not see a relationship between taxes and CSR Huseynov and Klamm (2012) conclude that the strength of corporate governance plays a moderating role, meaning that different aspects of CSR impact the ETR (both GAAP and Cash) in different ways. Lanis and Richardson (2015) find that firms with stronger CSR concerns are less likely to avoid tax and Muller and Kolk (2015) find that MNEs with stronger CSR reputations pay a higher ETR.

H4: *Concerns for CSR are positively related to LR ETR*

Tax considerations may increase the overall complexity of a MNE's structure or a long value chain with multiple international operations may provide scope for profit shifting. Apart from tax considerations other factors such as industry and the way that a firm chooses to structure operations may affect the MNE's structure. For example, retail companies may choose to operate using individual subsidiaries for each shop or may establish shops as branches rather than as legal entities in their own right. Within the sample analysed here, HCA Holdings has a total of 3,799 subsidiaries largely relating to individual healthcare outlets in the US. Union Pacific has a total of 29 subsidiaries included in the analysis. Both of these companies operate almost entirely in the US, demonstrating that it is not the most international of companies that use the most complicated of group structures. Corporate structures may also be a consequence of the company's history; those with a history of multiple M&As are likely to have more complex structures than those where size is a consequence of organic growth.

It is thought that firms with more international subsidiaries have greater scope to profit shift. Having more subsidiaries based in different locations may facilitate profit shifting by using TP or through the use of internal debt or royalty payments (Grubert and Mutti 1991; Rego 2003; Dyreng and Lindsey 2009). Slemrod (1998) also suggests that the pattern of multinational operations influences the ability to avoid tax.

H5: *The degree of multinationality is negatively related to LR ETR*

Tax havens are widely considered to play a significant role in tax planning by MNEs. Desai, Foley and Hines (2006) find that nearly 60 per cent of US firms with substantial foreign operations had at least one subsidiary in a tax haven country. Dyreng and Lindsey (2009) report that US MNEs with operations in at least one tax haven report an average worldwide tax rate that is 1.5 per cent lower than firms that do not use tax havens. Taylor, Richardson and Lanis (2015) consider any firm with a subsidiary in a tax haven to be tax avoiding. There may, however, be a legitimate economic purpose for some businesses to have subsidiaries in tax havens. More significant use of tax havens would be likely to denote a firm that is avoiding tax. The issue of tax havens is captured in the following hypothesis:

H6: The establishment of at least one tax haven subsidiary is negatively related to LR ETR

There is no single, clear definition of a tax haven (also known as Offshore Financial Centres -OFC) with different research focusing on different definitions. Subsidiaries based in OFC/

Tax Havens may have legitimate operational reasons for their location but it is more likely that they are based there for tax / financing reasons.

Hines and Rice (1994) and Desai et al (2006) distinguish between 'dot tax havens' and others. Dot tax havens are tax havens that have small populations and therefore lack the pull of a market for goods and services as a reason for MNE activity. Jones and Temouri (2016) take what they term a 'conservative' approach and use only dot tax havens in their research. MNEs may have reasons related to economic activity for locating subsidiaries in larger countries that may also be tax havens.[1] The sixth hypothesis reflects the role of tax havens in assisting MNEs to reduce their tax burden:

Another key factor that drives differences between companies and should be particularly of concern to policymakers is the use of losses made in earlier years which can be offset against current or future tax liability. This is something which is in the direct control of policy makers as it is the current regulations that enable companies to use losses in this way. Previous research has opted to ignore the impact that loss carryforwards can have on the ETR by removing loss making companies from the sample (Markle and Shackelford 2009, Dharmapala and Riedel 2008, Azemar 2003). Cooper and Knittel (2006) find that 50-60 per cent of losses are used by firms to offset against tax liabilities within ten years, 10 – 20 per cent remain to be used at some future point and that 25-30 per cent are never used. Losses are clearly valuable to MNEs, offering them the ability to reduce their LR Cash ETR.

H7: Registering losses for two or more years is negatively related to LR ETR

4 Mixed Methods Research

Mixed methods research typically refers to research which combines qualitative and quantitative methods within a single project (Creswell 2003, Teddlie and Tashakkori 2003, Symon and Cassell 2012). There is considerable variety in the way that methods are combined with some, for example, using qualitative methods such as interviews to help to design the quantitative element (e.g. a survey) or qualitative methods may be used to add depth to quantitative findings. The sole reason for the employment of a mixed methods approach must be that they enable the researcher the best means of investigating the research questions posed. The use of mixed methods should generate a better understanding than the employment of a single method (Creswell and Plano Clark 2007). Bryman (2007), reporting on his content analysis of the use of mixed methods within the social sciences argues that it is often unclear why, and how methods have been combined. This section sets out the reasons why this approach was adopted for this research.

It is often argued that the use of two or methods allows for triangulation of the findings, creating greater confidence in the results. Other key reasons for employing mixed methods have been suggested including: the ability to 'offset' weaknesses in one area

---

[1] Dot tax havens included by Jones and Temouri (2016) are: Andorra, Anguilla, Antigua, Barbados, Bahrain, Bermuda, Bahamas, Belize, British Virgin Islands, Cayman Islands, Cook Islands, Cyprus, Isle of Man, Jersey, Gibraltar, Grenada, Guernsey, Liechtenstein, Luxembourg, Macao, Malta, Monaco, Netherlands Antilles, Saint Kitts and Nevis, Saint Lucia, Saint Vincent, Seychelles and the Turks and Caicos Islands.

with strengths in another; the ability to generate a more comprehensive account of the area to add to research ‘completeness’; enhanced credibility and the ‘enhancement’ of the overall findings, where one method augments the findings from another (Bryman 2006; Molina-Azorin 2012).

Mixed methods have been used in this project to generate a more comprehensive view of the research question. The significant difficulty in gaining access to information is overcome by the use of three methods, which combine to generate a more comprehensive view of the area than a single method could contribute. The overall findings are enhanced by bringing together the results of the three individual methods. Greater confidence can be placed in the overall findings by their cohesive nature and the way that the findings from one method complement and reinforce the findings from the other. The findings complement each other but bring a different perspective which can be used to illuminate key overall findings.

4.1 Research Methods Employed

The first element of the research included in this study is a quantitative study of 96 US MNEs operating in the UK. The study employs rigorous statistical methods (regression) to generate an understanding of the key factors that drive a companies’ Effective Tax Rates (ETR). This study uses breadth to try to understand some of the complexity but is limited by the information that is available. Public companies are obliged to disclose some, limited, information about their tax position in their audited annual report to shareholders. They are not obliged to publish significant information about where profits are generated and where taxes have been paid which makes it difficult for researchers to generate an overview of their tax position. They must complete a tax return for the tax authorities which gives them a detailed view of their tax liability and payments for the year but there is no obligation to publish this data making it very difficult for researchers to access.

The second method reported is a focused study of 6 companies employing their annual reports to generate an understanding of their reported tax positions over a ten-year period. The case studies focus largely on unpicking and evaluating the information that is disclosed in their annual reports. As discussed above, the disclosures made are generally limited (to their legal obligations) and as such the picture generated is by nature incomplete. This work aims to explore the differences between companies by generating a holistic view of their tax planning approach. This element of the research also hopes to draw researchers’ attention to the information that *is* published. Whilst some of this is collected into the large online databases used by many researchers, there is a depth of information that is not collected in this way and is often ignored by researchers, particularly those that do not have specialist accounting knowledge.

The third component is a series of interviews conducted with senior tax executives from within US MNEs and those advising them. The interviews explored their experiences working in, and advising large businesses and what engenders the differences between them. The next sections provide an in-depth account of the individual methods employed and the headline findings. The findings are then drawn together in the Discussion section.

5 Adding Breadth: Quantitative Analysis

This section reports on regression analysis that is used to empirically test a number of hypotheses in a series of OLS regressions, focusing on creating an understanding of the impact of individual variables on companies' ability to avoid tax. As well as adding breadth to the understanding of factors affecting companies' tax planning strategy this section also aims to improve understanding of one of the key measures of tax avoidance, Effective Tax Rate (ETR). This is a much-cited measure by policy makers yet it does not always appear to be a good proxy for what it is measuring. The model presented considers the measurement of tax avoidance, developing the role of cash holdings as a mechanism for tax avoidance and incorporating and exploring two different measures of ETR.

The conceptual model incorporates Cash Ratio, LR GAAP and LR Cash ETRs as DVs. Using these three measures of corporate tax avoidance generates new insights into the measures themselves as well as the mechanisms by which MNEs reduce their corporate tax bill. This research, like most preceding work, focuses on US MNEs[2] partly due to the relatively high corporate tax rates faced at the time by US MNEs which generates significant motivation to avoid tax[3] and also due to their prominent role in global trade and investment. It is possible that companies in other regions have different priorities, incentives and abilities in relation to tax avoidance. Holding the home country constant facilitates comparison of the companies. Inflation is disregarded in this model as it would apply equally to all MNEs included in the study. There may be some foreign exchange differences between the firms as they do not operate equally in different host countries. There are unlikely to be any systematic differences that emerge from foreign exchange gains or losses and as a result they are not incorporated within the model.

ETR is calculated by taking a measure of tax paid divided by a measure of profit before tax.

$$\text{Effective Tax Rate (ETR)} = \frac{\text{Tax Paid}}{\text{Profit before Tax}}$$

The two measures of ETR used in this research are:

- LR GAAP[4] ETR (total income tax expense scaled by pre-tax income) and
- LR Cash ETR (cash tax expense divided by pre-tax income).

These measures have been used in many previous studies (including Desai and Dharmapala, 2006; Dyreng et al 2008; Minnick and Noga 2010; Huseynov and Klamm 2012). Firms undertaking tax planning may focus on reducing their Cash ETR, their GAAP ETR or both. This research follows the best practice set out by Dyreng et al (2008), calculating ETR over a ten year period.

---

[2] Some research does consider tax planning within the European context: Dharmapala and Riedel (2013), Glaister and Frecknall Hughes (2008) and Buettner and Wamser (2013).

[3] US MNEs faced a federal corporate income tax rate of 35 per cent plus any state taxes, far higher than the OECD average of 25.5 per cent (Tax Foundation 2016) although Trump's reforms introduced a base rate of corporation tax of 21% from October 2017.

[4] Generally Accepted Accounting Practices (GAAP) is an accounting term for calculations based on figures determined according to defined accounting standards.

Using the two measures allows for the comparison and greater understanding of differences between them, as well as further exploration of the impact of one on the other, which may be useful to future researchers and policymakers. The first measure, GAAP ETR, takes the Total Tax Expense (known as GAAP tax expense) as disclosed in the company's annual report (US 10K) and is therefore based on the firm's financial accounting earnings. It is composed of both the current year tax expense and any deferred or accrued taxes that are determined according to GAAP but may be subject to manipulation (Hanlon and Heitzman 2010).

Deferred taxes are those that arise as a result of temporary timing differences. It is a technical accounting term as defined in International Accounting Standard (IAS) 12, *Income Taxes.* IAS 12 defines a deferred tax liability as being the amount of income tax payable in future periods in respect of taxable temporary differences. Deferred tax is therefore simply, tax that is payable in the future. If a company is able to define tax as 'deferred tax' the current year's tax charge will decrease and the liability to pay future deferred taxes will increase. The key point here is that the GAAP ETR measure of tax will include all these movements and is, therefore, subject to change based not simply on the tax charge for the current year but also on any changes to deferred taxes. This can result in significant year on year variation of this measure of ETR. Understanding the details of a company's activity and its deferred tax will assist considerably with understanding its GAAP ETR. Deferred tax and the implications it has for annual ETRs are explored further in the Ford case study below.

Cash ETR is a simpler measure calculated using the annual cash paid for tax, net of any cash tax benefits. US companies are required to disclose this information in their annual report (10K) filing. A key difference between GAAP and Cash ETRs are tax credits such as R&D tax credits. These are used to reward certain company behaviour, such as investment in R&D by reducing taxes. These will be included in the company's tax calculation as included in their tax return. The information on credits claimed is included within the company's tax return and is therefore confidential. These will not affect the profit as determined in the annual report and will therefore not affect the GAAP measure of tax but will reduce the amount of taxes that are ultimately paid in cash and will therefore reduce the Cash ETR.

The model as specified shows that the GAAP ETR is determined by the company characteristics, the profitability of the company and the cash / asset ratio. Certain factors related to the company determine the profits that it generates, which in turn have an impact on the cash/asset ratio of the company. These factors will interact to determine the tax payable as presented in the annual report – the GAAP ETR. The Cash ETR is the ultimate measure of tax expense to the firm, determined by all of the preceding factors.

A long run (ten year) robust measure of both ETRs (GAAP ETR and Cash ETR) is used to capture the underlying rate rather than an annual ETR that would be subject to greater fluctuation. Previous work has demonstrated the greater accuracy of a long run measure in terms of the actual cost to the company (Dyreng et al2008; Harrington and Smith 2012).

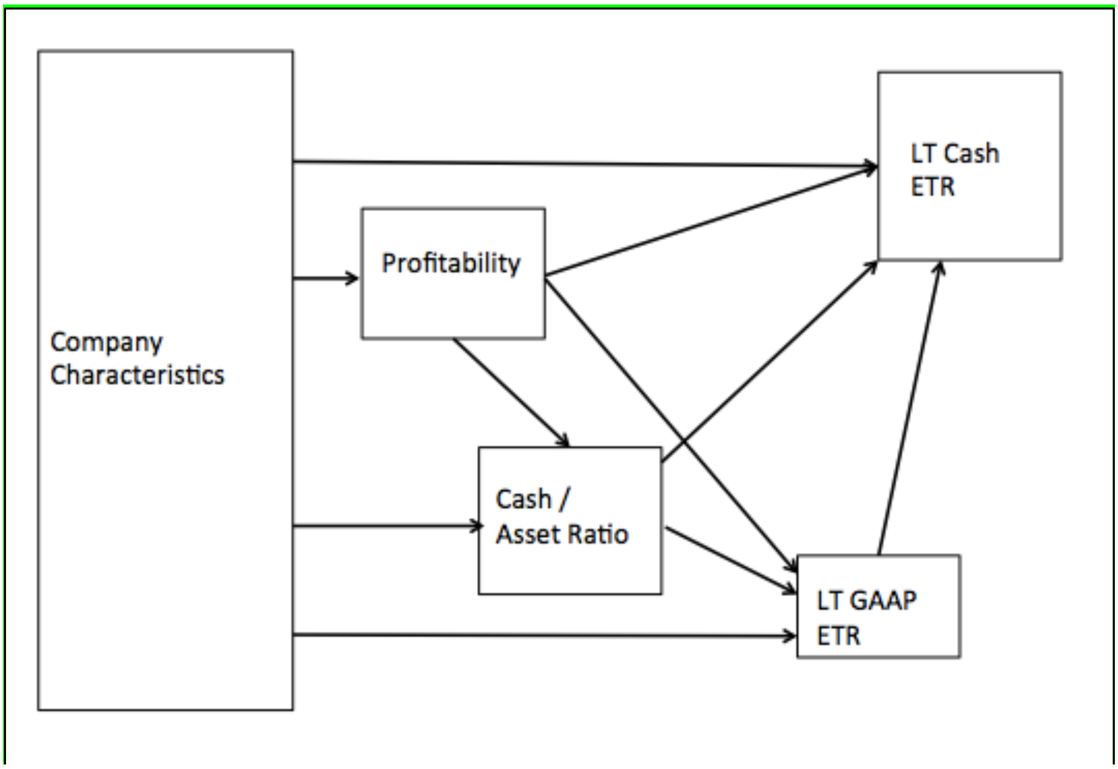
Using the two measures of ETR within the recursive structure enables conclusions to be drawn about the impact of the company characteristics on the two measures and areas where the measures differ. Other research also shows that tax directors incentives are negatively associated with GAAP ETR but not with Cash ETR. This suggests that the aim of the tax department relates to reducing the GAAP ETR rather than the Cash ETR (Armstrong et al 2012; Robinson et al 2010).

Deferred tax assets may be used to reduce a company's tax expense in a future period. They may arise from net loss carryforwards where a company has incurred losses in one period that may be used and set off against profits in future periods, therefore reducing the tax payable in the future. When a company records a deferred tax asset it must be convinced that they will be able to use them to reduce future liabilities. Where doubt arises, due for example to an early expiry date or because the company is continuing to make losses, it would record the asset in the balance sheet but then create a 'valuation allowance' which is used to reduce the overall value of the asset. The creation of a valuation allowance will impact the GAAP tax charge for the year and therefore the GAAP ETR. No cash tax is paid and therefore there is no impact on the Cash ETR. These charges are potentially large and do not indicate tax avoidance but could affect statistical analysis of ETRs.

A substantial difference could arise between the cash and GAAP ETRs even over the long run period examined in this sample. This could potentially distort the findings of the economic model. As noted above the sample was examined for evidence of companies that had booked or released significant valuation allowances during the period under examination. Two companies, Ford and Goodyear Tires were removed from the sample when they were found to have substantial differences between their LR Cash ETR and LR GAAP ETRs. These companies were therefore examined separately by looking in depth at their tax affairs as case studies, the case study on Ford is reported in Section 6. Other companies within the sample have created or released valuation allowances which will have affected their ETR but without such significant implications for their ETRs.

Cash may play a key role in tax avoidance. Firms may maintain higher levels of cash holdings overseas in order to reduce their taxable profits in the US (Foley et al 2007). Profits that are not repatriated to the US may be reinvested overseas resulting in no US tax charge. Research demonstrates the importance of tax to overseas cash holdings when significant sums were repatriated following the AJCA 2004 when firms were able to repatriate cash at a lower tax rate (Dharmapala et al 2011).

Figure 1. Conceptual Model of ETR Determinants



The conceptual model shows the impact that company characteristics have on the profitability of the firm, its cash / asset ratio and two measures of the ETR paid by the firm. Causality is unidirectional, flowing from left to right across the model. The model assumes that there are certain company characteristics that will affect the motivation and ability of MNEs to avoid tax. The company's characteristics, include size, ownership of IP, the percentage of women on the board, whether the Chief Executive Officer (CEO) or Chief Financial Officer (CFO) are women, whether the MNE was included in the Dow Jones Sustainability Index (2014) (DJSI), how international the company is (the degree of multinationality) and its use of tax havens. As discussed in the Literature Review, research on the impact of size on the propensity to avoid tax has been inconclusive. IP ownership is thought to facilitate transfer pricing manipulation. The model also focuses on corporate governance by considering one element of this, the role of women in influential corporate roles. The model also considers whether companies with stronger CSR records are less likely to be tax avoiders and the role of tax haven subsidiaries.

The first regression regresses the company characteristics and profitability on the cash / asset ratio. The second regression then incorporates the cash / asset ratio as one of the IVs where LT GAAP ETR is the DV. The third regression includes all of the previous factors as IVs that determine the ultimate DV, the LT Cash ETR.

Cash holdings are considered to be an endogenous variable within this model. The model assumes that other company characteristics are determined by the economic activity of the company and are less flexible – they would change only slowly over time. The level of cash holding is part of the overall strategy adopted by the firm and may be the result of a tax avoidance strategy by US firms. Significant earnings may be held offshore as cash rather than repatriated to the US when tax would become payable. The model assumes that the cash / asset ratio is determined by the company characteristics as well as by the profitability of the firm. A larger cash / asset ratio indicates a greater propensity to avoid tax, if only by the direct mechanism of failure to repatriate earnings.

The company characteristics combine with industry factors to generate the profitability of the firm that in turn should drive the levels of tax payable. It is unlikely that the empirical analysis will be able to capture the direct impact of company characteristics on profitability – if this were simple analysis it would present firms with a formula for profitability. Profitability is used as a DV as part of the analysis but the results are not discussed. As shown in the model, profitability is considered to be one of the mechanisms by which the characteristics tested may impact on the cash ratio or ETRs of the firm. The model is not attempting to determine the causes of profitability and therefore the results, whilst listed in the regression findings in Table 4 are not discussed.

Measuring profitability is relatively straightforward. Profits before tax are taken from the company's annual report over a ten-year period (2006-2015) and scaled by total assets. This is consistent with previous relevant work (Taylor et al 2015; Gupta and Newberry 1997).

Cash held overseas cannot be determined separately from cash held in the US as this information is not disclosed in the annual report. Therefore, the measure of total cash held by the MNE is used in this analysis. There may be operational reasons why larger firms may hold higher absolute levels of cash or they may be able to hold less cash due to their greater access to capital. Following Foley et al (2007) this variable was constructed by averaging the year-end cash balances for the ten-year period scaled by the average total assets for the same period of time.

5.1 Independent Variables

This section sets out the development and measurement of the independent variables (IVs) based on findings from previous literature.

5.1.1 Company Size

In this regression size is measured by the natural logarithm of total assets following Harrington and Smith (2012), Taylor et al (2015) and others. Rego (2003) uses natural log of sales to determine size. An alternative measure of size using Revenue (sales) was also calculated and used for this research (but not reported) with little change to the results.

5.1.2 Intellectual Property

Previous research has measured IP simply by taking the measure of Intangible Assets scaled by Total Assets (Taylor et al 2015) or more directly, the level of intangible assets in the balance sheet (Dischinger and Riedel 2011). Intangible assets are complex and difficult to measure. According to Lhaopadchan (2010) accounting for intangible assets is: 'one of the most controversial and intractable issues in accounting'. Much of the complexity relates to accounting for one section of intangible assets: Goodwill.

Goodwill is created when an asset or business is purchased. It relates to the value recorded for the purchase that is over the fair value of the assets acquired. Good will is thought to be open to management manipulation as they have considerable discretion over when its value should be reduced or written off following any impairment (Lhaopadchan 2010). Goodwill cannot play a role in profit shifting as it cannot be shifted to another subsidiary and royalties charged for its use. This research therefore takes a more precise measure of intangible assets by removing Goodwill from the Intangible Asset count.

The measure of IP used is, therefore, more accurate as a measure of IP that can be used to facilitate profit from shifting:

$$\frac{\text{Intangible Assets} - \text{Goodwill}}{\text{Total Assets}}$$

5.1.3 Role of Women Within the Company

Information on the gender of Board members, the CEO and the CFO was collected from the annual report for 2014. A limitation of this measure is that there may have been changes in the position of women in the companies studied over the time period. The number of women on the board over the ten year period may not be accurately captured in the data from 2014, however, it may take new board members some time to establish influence within the board generally and over the attitude adopted to tax planning therefore even using data for average ten year averages may fail to capture the true influence of women on the board.

5.1.4 Corporate Social Responsibility (CSR)

For this research the firm's approach to CSR is measured using the Dow Jones Sustainability Index (DJSI) for the year 2014. The index comprises companies that have been evaluated as being in the top 10 per cent of their industry in terms of their overall sustainability approach, measured across economic, environmental and social dimensions. An independent agency[5] compiles the index which is audited, considered to be a robust measure and has been used in previous academic research (Muller and Kolk 2015). A dummy variable is used with 1 representing inclusion in the DJSI and non-inclusion is coded 0.

5.1.5 The Degree of Multinationality

US MNEs must disclose the names and locations of all their 'significant' subsidiaries (in Exhibit 21 to the 10K). Donohoe, McGill and Outslay (2012) note the trend for US MNEs to reduce the number of subsidiaries that are disclosed in the 10K, as an effect of restructuring such as in the case of Google where a new holding company, Alphabet was created to be the parent of Google. Despite potential disclosure limitations, a MNE's internationality is measured using the total number of foreign subsidiaries scaled by the total number of subsidiaries. The number and location of subsidiaries are directly related to the MNE's ability to profit shift. Detailed data is taken from the OSIRIS database that

[5] SAM Research based in Zurich.

contains information on MNE subsidiaries. Data is collated in up to ten levels of subsidiary ownership. All subsidiaries that are more than 50 per cent owned by the overall parent company are included in the analysis. This research adopts a careful approach by cross checking and validating data from various data sources, 10K filing and OSIRIS database by Bureau van Dijk. It is found that the data contained in OSIRIS is in many instances, more detailed than the information given in the 10K.

Previous research has relied on the information disclosed by MNEs in their annual reports (Annex 21 to the 10K for US companies). This measure has been used in previous work: Rego (2003), Mills and Newberry (2004) Taylor, Richardson and Lanis (2015). This may however, be less accurate now than in the past due to an apparent trend to disclose fewer subsidiaries (Donohoe, McGill and Outslay 2012). Information for this sample was obtained from the OSIRIS database that takes data directly from the companies (as per discussion with OSIRIS). A comparison of a small sample of companies confirms that there are more subsidiaries recorded within OSIRIS than were disclosed in Annex 21 to the 10K.

5.1.6 Tax Havens

This research uses two different measures of tax havens to capture the effect. The first is that of 'dot tax havens' (Jones and Temouri 2016). The second measure of tax havens is based on work by the IMF (IMF 2000). The IMF published a list of 42 countries that they term 'Offshore Financial Centres', essentially tax havens. They split the 42 countries into 3 different groups:

- *Group 1 - Countries largely seen as cooperative with higher international standards and supervision.*
- *Group 2 – Generally have some procedures in place for supervising but where actual performance is below international standards.*
- *Group 3 - Jurisdictions with a low quality of supervision, with little cooperation with others and little attempt made to adhere to international standards.*

Group 1 countries are richer and larger, including countries such as Ireland and Luxembourg where a company could have a market motivation to locate there, but where many US MNEs base their European headquarters in order to reduce their tax payments. Group 2 and 3 countries have more overlap with the 'Dot tax havens'.

This research uses both measures of tax havens outlines above: the Jones and Temouri (2016) 'dot tax havens' as well as the IMF's categories. **Error! Reference source not found.** below provides the details of which countries are positioned within which category. Within the analysis a dummy variable is used with 1 denoting the ownership of at least one subsidiary in a tax haven and 0 where there is no such subsidiary.

5.1.7 Existence of Losses

This research includes companies that have made losses as their use over time can provide MNEs with an important reduction in their tax liability. A dummy variable is used to indicate whether a company has made losses for more than two years during the ten year time period. This measure captures only losses made during the ten-year period and it is possible that losses made before the start of this period could still be used and offset against losses made during this period.

The following table summarises the hypotheses that were developed in Section 5.1:

Table 1 Hypotheses Summary

Hypothesis 1	*The size of the MNE is negatively related to LR ETR.*
Hypothesis 2	*The level of IP is negatively related to LR ETR.*
Hypothesis 3a	*The proportions of female board directors are positively related to LR ETR.*
Hypothesis 3b	*Having women in key executive positions (CEOs and CFOs) is positively related to LR ETR.*
Hypothesis 4	*Concerns for CSR are positively related to LR ETR*
Hypothesis 5	*The degree of multinationality is negatively related to LR ETR.*
Hypothesis 6	*The establishment of at least one tax haven subsidiary is negatively related to LR ETR.*
Hypothesis 7	*Registering losses for two or more years is negatively related to LR ETR.*

5.2 Research Design

A sample of 100 of the largest US companies was collated taking data for the ten-year period 2005 - 2014. The companies were selected from the Fortune 500. The largest US companies with overseas subsidiaries were selected. Following other similar research (Taylor et al 2015) companies in banking and the oil and gas sectors where tax, disclosure and regulatory arrangements are significantly different, were excluded.

The relatively small sample allowed for in depth analysis, providing a holistic view of each company. Data was collected manually from the annual reports for each of the companies over a ten-year period. Information was read and analysed from the Statement of Consolidated Earnings, Consolidated Statement of Financial Position, the management discussion and the disclosure notes to the accounts. One company was subsequently excluded from the analysis as they sold substantially all of their overseas holdings during the time period analysed. Two companies were excluded from the sample, as they did not disclose their cash taxes paid, despite a SEC requirement to do so. Two companies merged during the time period under consideration and two further companies (Ford and Goodyear Tires) were removed from the sample, as discussed earlier, as an initial review of their annual reports revealed that their use of deferred tax provisions significantly distorted their tax payments. This leaves a sample of 94 US MNEs for analysis which is sufficient for statistical testing. Hair, Black, Babin, Anderson and Tatham (2010 p.174) suggest that at the .01 level this sample size, combined with the number of IVs used will result in the detection of relatively small R^2 values.

The sample is also large enough to generate findings that are generalizable to the wider population. Hair et al (2010 p.175) state that there should be minimum ratio of five observations for each IV in the regression. This sample comfortably sits within that ratio. Although the sample is relatively small it will not make the statistical significance tests overly sensitive as can be the case with large (1000+) samples.

A series of ordinary least squares (OLS) regressions have been conducted using SPSS and Eviews software to demonstrate the impact of factors on causality across the model. Regression 1 regresses company characteristics on profitability. Regression 2 regresses company characteristics on the cash / asset ratio and profitability. The impact of company characteristics, profitability and cash holdings on LR GAAP ETR and LR Cash ETR are then calculated in Regressions 3 and 4. The next section discusses the use of ETR in quantitative research and how it was calculated for this analysis.

5.3 Descriptive Statistics

This section sets out the descriptive statistics for the sample. The overall mean Cash LR ETR of the sample was 25.72 per cent. 13.83 per cent of this sample were able to maintain a LR Cash ETR of less than 20 per cent and 4.26 per cent were able to maintain a rate at less than 10 per cent. Descriptive statistics for the sample are presented in Table 2.

Table 3 reports the correlations between explanatory variables. The highest level of correlation is r=-.566. Hair et al (2006) suggest that this should be considered as only moderate collinearity (±0.25 and ±0.75). The higher levels of correlation are between the different measures of tax haven usage – Dot tax havens and the Group measures and the internationality index. This is not unexpected.

Variance inflation factor (VIF) values have been calculated for each of the IVs. No factor is greater than 2.2, which is well below the level of 10 cited by Hair et al (2006). Multi collinearity is therefore not a concern for this model.

Inclusion in the DJSI 2014 is positively correlated at the 1 per cent level to the presence of a female CEO and the percentage of women on the board. The relationship between female board members and executives and companies placing a greater emphasis on corporate social responsibility has been reported in the literature review.

Not surprisingly the two measures of LR ETR – cash and GAAP are correlated at the 1 per cent level demonstrating the systematic relationship between these two measures that is explored in the following regression analysis.

Table 2 Descriptive Statistics

Independent Variable	Minimum	Maximum	Mean	Std. Deviation
LN 2014 Assets	8.72	13.39	10.63	0.91
IP Assets/ Total	0.00	0.48	0.08	0.10
% Women on Board	0.00%	37.50%	22.65%	7.97%
Female CEO	0	1	0.074	0.2639
Female CFO	0	1	0.16	0.3682
Included in DJSI	0	1	0.351	0.4799
Profitability	-1,362.90	24,279.10	4,538.58	5,258.15
Internationality index	0	0.9	0.4144	0.26945
Dot Tax Havens	0	1	0.8404	0.36817
Group 1 Tax Havens	0	1	0.8617	0.34706
Group 2 tax Havens	0	1	0.6277	0.48602
Group 3 Tax Havens	0	1	0.7021	0.45978
2 or more yr loss	0	1	0.053	0.2256
Cash / Asset ratio	0.00	0.24	0.07	0.04

Table 3 Correlations

N=94	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. LN 2014 Assets	1															
2. IP Assets/Total Assets	.336**	1														
3. % Women on Board	0.194	0.009	1													
4. Female CEO	0.11	0.054	.230*	1												
5. Female CFO	-0.027	-0.195	.204*	-0.124	1											
6. Included in DJSI	0.017	-0.102	.283**	.301**	0.166	1										
7. Profitability	0.073	-0.039	0.133	0	0.118	0.098	1									
8. Internationality index	0.085	0.082	0.042	0.052	-0.076	0.157	.237*	1								
9 Dot Tax Havens	0.07	-0.005	0.072	0.013	0.031	0.199	-0.077	.445**	1							
10. Group 1 Tax Havens	0.155	0.152	0.192	0.114	0.006	0.166	.254*	.536**	.330**	1						
11. Group 2 Tax Havens	0.176	0.065	-0.032	0.135	0.095	.244*	0.112	.469**	.566**	.329**	1					
12. Group 3 Tax Havens	.263*	0.035	-0.016	.299**	-0.122	.285**	-0.038	.455**	.255*	.235*	.451**	1				
13. 2 or more year loss	-0.087	-0.035	-0.118	-0.067	-0.103	0.124	-.392**	-0.1	-0.026	-.317**	-0.112	-0.139	1			
14. Cash / Assets ratio	-0.148	-0.151	-0.168	-0.075	-0.04	0.052	.276**	.325**	0.134	0.194	0.181	.231*	-0.04	1		
15. 10yr GAAP ETR	-.269**	-0.194	.250*	-0.075	0.146	0.075	-0.001	-.333**	-0.133	-0.163	-.213*	-.373**	0.001	-.257*	1	
16. 10yr cash ETR	-.289**	0.063	.225*	-0.063	0.062	-0.007	.266**	-0.023	-.270**	0.029	-0.182	-0.158	-.297**	-0.137	.433**	1

** Correlation is significant at the 0.01 level (2 tailed)
*Correlation is significant at the 0.05 level (2 tailed

5.4 Overall Regression Results

Table 4 presents the results from the four regressions that make up the complete recursive model presented above. The results confirm the complexity of the relationship between the tax charged (LT GAAP ETR) and tax paid (LT Cash ETR) by a company with the company's characteristics and other factors related to tax planning. Whilst the regression results using profitability as the DV are presented in this table they are not discussed in detail in this section. The regression is a step towards explaining the next three regressions.

5.5 Further testing

The Breusch Pagan Godfrey tests for heteroskedasticity was conducted, with results showing an overall issue of heteroskedasticity at the 5 per cent level, although not at the 1 per cent level. Examination of the individual variables shows that Profitability is the only variable that demonstrates significant heteroskedasticity at 0.0027. The negative coefficient of -0.062120 indicates that there is greater variability of ETR in firms with very low or negative levels of profitability. This is likely to reflect the complexity of tax payments for these firms and in particular the use of losses brought forward to reduce tax payments as discussed above. The Jarque Bera test for normality was conducted and concludes that the data has a normal distribution.

Table 4 Regression Results

Dependent Variable	Profitability	Cash / Asset ratio	LR GAAP ETR	LR Cash ETR
Constant	0.062	0.118**	0.685***	0.556***
	(0.05)	(0.054)	(0.128)	(0.134)
1. Natural Log of 2014 Assets	0.002	-0.006	-0.038***	-0.04***
	(0.006)	(0.005)	(0.012)	(0.011)
2. IP Assets /Total Assets 2014	-0.036	-0.058	-0.086**	0.234**
	(0.054)	(0.049)	(0.114)	(0.103)
3. % Women on Board 2014	0	-0.001*	0.003**	0.002*
	(0.001)	(0.001)	(0.001)	(0.001)
4. Female CEO	-0.019	-0.009	-0.056	-0.038
	(0.02)	(0.018)	(0.042)	(0.038)
5. Female CFO	0.005	-0.007	-0.006	-0.008
	(0.014)	(0.013)	(0.03)	(0.026)
6. Included in DJSI 2014	0.014	0.002	0.021	0.006
	(0.012)	(0.011)	(0.024)	(0.022)
7. Profitability	-	0.221**	0.19	0.331
		(0.101)	(0.238)	(0.214)
8. Degree of internationality index	0.048**	0.037*	-0.103**	0.087*
	(0.023)	(0.021)	(0.05)	(0.046)
9. Dot tax havens	-0.033	0.014	0.045	-0.095**
	(0.02)	(0.018)	(0.042)	(0.038)
10. Group 1 Tax haven subsidiaries Y/N	0.01	0.013	0.008	-0.016
	(0.018)	(0.016)	(0.037)	(0.033)
11. Group 2 Tax haven subsidiaries Y/N	0.008	0.004	0.001	-0.002
	(0.013)	(0.012)	(0.028)	(0.025)
12. Group 3 Tax haven subsidiaries Y/N	-0.01	-0.014	-0.055*	0.017
	(0.015)	(0.013)	(0.031)	(0.028)
13. 2 or more year loss	-0.082***	0.009	-0.023	-0.122**
	(0.023)	(0.023)	(0.052)	(0.047)
14. Av Cash Av Assets 05-14			-0.603**	-0.294
			(0.256)	(0.238)
15. LR GAAP ETR				0.345***
				(0.101)
R^2	0.283	0.253	0.355	0.502
Adjusted R^2	0.176	0.132	0.241	0.407
F	2.659	2.089	3.109	5.247
Significance of F	.005b	0.024	0.001	0.000

Standard errors are presented in parentheses

*, ** and *** indicate statistical significance at the 10%, 5% and 1% level.

5.6 Hypothesis Testing Results

This section discusses the results of the regression and interprets the specific findings in relation to the individual hypotheses that were presented in the table above.

5.6.1 Size

H1: The size of the MNE is negatively related to LR ETR.

The size of the company as measured by the natural log of total assets is significant at the 1 per cent level for DVs LR GAAP ETR and LR Cash ETR. The coefficient of -0.38 for LR GAAP ETR and -0.04 for LR Cash ETR are similar, suggesting that these companies would pay 4 per cent less tax on average. This is clear support for Hypothesis 1.

Size is not significantly related to either profitability or the cash / asset ratio. Prior research has conjectured that larger firms have the finance and capability to invest in strategic tax planning. All of the firms included in this sample are large and should have the funds available to invest in tax planning if they are motivated. The impact of size on GAAP and Cash ETRs is clear but further investigation is needed to understand exactly what aspect of size generates the motivation or opportunity to reduce ETRs in this way. Further analysis of the sample shows that the top twenty firms by size are dominated by the tech sector and by pharmaceutical firms. The top twenty also include Walmart (retail), GE (conglomerate) and P&G (consumer staples). Further research is needed with a larger sample that explores the relationship between industry and LR Cash and LR GAAP ETRs.

5.6.2 Intellectual Property

H2: The level of IP is negatively related to LR ETR.

The coefficient for IP assets when regressed against LR GAAP as the DV, is -0.086, significant at the 5 per cent level. This provides support for Hypothesis 5, indicating that companies with higher levels of IP face a GAAP ETR that is 8.6 per cent lower over the ten-year period.

The LR Cash ETR the coefficient is much higher at 0.234, also significant at the 5 per cent level but is positive. This does not provide support for Hypothesis 5. As with the internationality index discussed above, this is likely to relate to the cash taxes paid overseas that are not set off against current GAAP taxes in the US. Taxes are due in the overseas subsidiaries and the US MNE pays these taxes but as the profits are not returned to the US there is no similar GAAP tax liability booked. Further case study analysis is required to confirm the extent of these differences and the distorting effects that these are likely to have on company behaviour. This is a substantial new finding, resulting from the comparison of LR GAAP and LR Cash ETRs. The level of IP does not have a statistically significant impact on the cash/asset ratio.

5.6.3 Role of Women on the Board

H3a: The proportions of female board directors are positively related to LR ETR.

The regression results show support for Hypothesis 3a. Women on the board have a negative impact, significant at the 10 per cent level, on the cash holdings of a company (cash / asset ratio). This is consistent with cash being held to reduce the taxes paid. As expected, the percentage of women on the board has a positive impact on GAAP ETR (significant at the 5 per cent level), indicating that if there are more women on the board the GAAP tax paid increases. Similarly, the cash ETR increases with the percentage of women on the board although this is only significant at the 10 per cent level.

Whilst the magnitude of the difference is not large, with women on the board effecting a 0.3 per cent change to LR GAAP ETR and an even smaller 0.2 per cent change to LR Cash ETR, it is statistically significant demonstrating support for Hypothesis 3a.

In this sample only two companies have no women on the board, six have a single female representative, 34 companies have two female board members and 32 have three. 20 companies have four or more women on the board. In total women represent approximately one quarter of all board members (253 board positions out of a total of 1,118 in the sample.) Supplementary analysis (not reported), using the absolute number of women confirms the robustness of the findings.

H3b: Having women in key executive positions (CEOs, CFOs) is positively related to LR ETR.

The variables measuring whether a company has a female CEO or CFO are insignificant across all of the regressions. There is no evidence to support Hypothesis 3b. The sample, however, includes only seven female CEOs[6] and 18 female CFOs which may have affected the results. Future research could consider the role of female executive decision makers within a larger sample of MNEs.

5.6.4 CSR

H4: Concerns for CSR are positively related to LR ETR.

The regression results show that there is no statistically significant support for Hypothesis 4. Whilst the coefficients have the expected positive sign, they are not statistically significant across the Cash / Asset ratio and both measures of ETR. The hypothesis is rejected.

5.6.5 Internationality Index

H5: The degree of multinationality is negatively related to LR ETR.

The results for internationality are striking. The coefficient for the internationality index is significant across all four regressions. As might be expected it has a positive impact on profitability and the propensity to hold cash. It has a negative impact on the LR GAAP ETR, with a coefficient of -0.103 indicating that the most international companies pay a 10.3 per cent lower tax bill, significant at the 5 per cent level. This provides support for Hypothesis 5; companies that are more international are thought to have greater scope to use TP to shift profits and reduce group tax liabilities. These findings confirm earlier work by Grubert and Mutti (1991), Rego (2003), Dyreng and Lindsey (2009), Mills and Newberry (2004), Taylor, Richardson and Lanis (2015).

The coefficient for the LR Cash ETR is however, positive and significant at the 1 per cent level. More international companies are paying 8.7 per cent more cash taxes. This finding does not support Hypothesis 5. This result is likely to reflect the fact that these companies do still have to pay cash taxes in the overseas jurisdictions where they are located. MNEs can net these cash taxes paid off against the taxes due in the US but if they do not repatriate earnings to the US or use other methods to reduce their GAAP tax payable in the US they will have little liability to offset this against. It is likely that this overpayment of cash

[6] Lynn Good at Duke Energy; Phebe Novakovic at General Dynamics; Virgina Rometty at IBM; Marillyn Hewson at IBM; Irene Rosenfeld at Mondelez; Indra Nooyi at Pepsi; Ursula Burns at Xerox.

taxes is then recorded as a deferred tax asset by the MNE as they may be able to set these taxes off against domestic US taxes in the future. The differences in these coefficient signs provides significant new evidence that firms are able to reduce their GAAP taxes payable whilst earning profits overseas on which tax must be paid. The difference here between LR GAAP and Cash ETRs adds significantly to our understanding of these measures and of corporate behaviour.

5.6.6 Tax Havens

H6: The establishment of at least one tax haven subsidiary is negatively related to LR ETR.

The model makes interesting, complex new findings in relation to tax havens. The measure of dot tax havens has a negative coefficient of -0.095, significant at the 5 per cent level when LR Cash ETR is the DV. This provides support for Hypothesis 6; if MNEs have a presence in dot tax havens their LR Cash ETR is reduced by 9.5 per cent. Analysis (not reported) however, that considers the total number of subsidiaries in dot tax havens found no similar relationship. It appears that simply establishing a single subsidiary in a tax haven is sufficient to gain the reduction in LR Cash ETR. The coefficient for Dot Tax Havens when LR GAAP ETR is the DV is not significant but it is interesting as the sign is positive. Firms are not using tax havens to reduce their overall GAAP ETR; the GAAP ETR finding does not provide support for Hypothesis 6.

A second measure of tax havens using an IMF definition and looking at the three groups of tax havens was also examined. A small effect, significant at the 10 per cent level was discerned for Group 3 Tax Havens with GAAP ETR as the DV, supporting the hypothesis. No effect was found for Groups 1 and 2. Group 3 Tax Havens are small countries, most similar to the Dot Tax Havens measure and therefore include only countries where investments are likely to be driven solely by tax haven motivations. Groups 1 and 2 include larger countries where market access may also be a factor, making isolating the tax haven effect more difficult. None of the tax haven measures have a statistically significant impact on the cash / asset ratio. Overall the findings show mixed support for the hypothesis, demonstrating the complexity of the use of tax havens.

5.6.7 Losses

H7: Registering losses for two or more years is negatively associated with LR ETR.

As expected, the variable capturing whether a company had incurred more than two losses over the last ten years is negatively related to the profitability of the company, significant at the 1 per cent level. It is also negatively related to the LR Cash ETR at the 5 per cent level. This provides strong support for Hypothesis 7, suggesting that MNEs are able to use losses to reduce the taxes paid. It seems likely that some of the losses are incurred overseas where the cash payments are then reduced. No effect was found for LR GAAP ETR. This is a new finding as previous studies have excluded companies with losses from their analysis. Further exploration of losses and how they contribute to tax planning is required.

5.7 Conclusion

This quantitative research provides new information, contributing to our understanding of the key company characteristics that affect a MNE's profit shifting strategy and the reduction in their taxes paid. Size was consistently a factor, significantly (at the 1 per cent level) for both measures of LR ETR. Industry may be a factor here, as the top twenty firms by size are dominated by the tech sector and by pharmaceutical firms which may have more opportunity to shift profits via TP. IP assets were also shown to be an important mechanism to shift profits, affecting both LR Cash and LR GAAP ETRs. The difference here between the negative impact on LR GAAP ETR and the positive impact on Cash ETR is an important new finding. This repeats the findings of the impact of internationality where more international companies report lower LR GAAP ETRs but higher LR Cash ETRs. The different impact on these two measures demonstrates the complexity of the relationship of the two measures. What is clear is that MNEs may face a choice between measures that increase the volume of cash tax paid overseas and the GAAP tax charged in the USA. Further exploration of the manner of these choices and the way in which MNE evaluate the outcomes would add to understanding of this key issue and enable policymakers to effectively target policies.

Tax havens play a key role in reducing tax liabilities with MNEs with dot tax haven presence reducing their LR Cash ETR by 9.5 per cent. A substantial new finding from this research is the role that women play on the board of these companies and their impact on the LR ETRs. There is a clear relationship between the percentage of women on the board and the Cash Ratio as well as both measures of LR ETR. The proportion of women on the board clearly operates as a brake on corporate tax avoidance. Women may take a longer-term view of the company, with greater consideration of the potential for tax avoidance to impact on areas such as corporate reputation. Women may therefore place even more emphasis on tax optimisation rather than tax minimisation. More research into the specific manner of this influence is needed to understand how women are able to influence boards in this way.

6 Case Studies

There has been significant debate about the role of case studies within IB research (Piekkari and Welch 2011). Debate focuses on the underlying purpose of the case study in terms of what can be learnt and how robust or generalizable are the findings. Case studies are a particularly useful method of research for increasing the understanding of a phenomenon (Stake 1995; Ghauri and Grønhaug 2002). The in-depth approach offered by the case study enables a detailed, holistic view of the focal company to be developed. Piekkari and Welch (2011) point out that the value that case studies offer in terms of generating deep insight into a phenomenon can be lost when the research methodology is driven by a positivist desire to provide quantifiable findings in order to generate conclusions that can be generalized to a larger population. They argue that the insight that comes from depth is sacrificed when much research design over emphasizes the importance of breadth.

This paper uses mixed methods including the quantitative use of regression analysis to generate breadth of coverage and the case studies and interviews to add two different forms of depth. Rather than aiming to provide statistical representativeness, case study research enables a detailed, in depth view of the phenomenon being studied to be established. Using case studies has enabled a detailed, holistic picture of the focal companies to emerge. In-depth case studies allow for the exploration of an issue and the generation of theory. The heterogeneity of approaches presented in these case studies underlines the importance of this form of data gathering. Further research is needed to generate a body of evidence that can be used to generate new IB theory that encompasses the role that tax plays in stimulating behaviour and the adoption of strategies by MNEs.

This study includes four case studies of US MNEs: Amazon, Ford, Starbucks and Nucor. The case studies examine their tax planning strategies in detail to provide an overview of how companies are able to use tax avoidance mechanisms and how the characteristics of these companies influence their overall tax liabilities. The case studies aim to provide an overview of how these specific companies operate which is invaluable for policy makers. The research also focuses the attention on the detailed elements of annual reports and the information that they contain. Ford highlights in particular the role of deferred tax and suggest that future researchers incorporate a greater understanding of how this impacts on their selected measures of tax avoidance.

These case studies are based largely on an analysis of the content of audited company annual reports, (content analysis methodology Wright 2011). These provide a rich source of information that is often neglected in IB research but are frequently used in the accounting and international tax literature (Chen, Su and Wu 2010, Bewley and Schneider 2013, Hageman and Bobek Schmitt 2014). Quantitative research tends to focus on the comparison of large-scale data on a panel or longitudinal basis. Figures may be extracted from the annual report for use in these databases but there is little research that uses the depth of information that is provided. Whilst there are severe limitations to the disclosures made by companies in annual reports there is still scope for researchers to utilise this public information to a greater extent. This is a new approach to tax research providing detailed information about the tax planning approaches of these companies and exploring mechanisms neglected by previous research. Focusing on these neglected elements of previous research, notably the impact of deferred tax and corresponding valuation allowances on LR ETRs, provides substantial new insight that must be reflected in future analytical techniques.

The case studies are not designed to generate comparisons between the cases themselves but to supplement the findings from the interviews and the quantitative analysis. They are intended to work together to form a collective piece of evidence. A detailed analysis of each company was generated but are not reported due to space considerations. Instead, some key data across all of the companies is presented and we then discuss in detail the key features of any tax avoidance mechanisms used by the company.

In this study the population is the subsidiaries of US MNE operating in the UK. The case study companies are taken from the sample generated for the quantitative analysis reported in Section 5 above. The companies were selected from the overall sample as those where detailed attention could generate significant insight. The Ford Motor Company was excluded from the statistical analysis as their extensive use of deferred tax assets and valuation allowances would have distorted the evidence generated there (See Section 5). Starbucks and Amazon have been widely cited as 'tax avoiding' companies. Starbucks operates a traditional 'bricks and mortar' business and the case study focuses on their UK tax payments and how these are affected by their internal company transfers. Amazon is at the forefront of digital delivery; considering their methods adds insight into the way that tax affairs are planned by digital companies. These case studies highlight real policy issues facing governments when dealing with this industry. A final case study considers Nucor, a company that appears to adopt less aggressive tax planning techniques. Nucor was selected from the larger sample as the two measures of ETR (cash and GAAP) were close together and close to the statutory rate. Nucor's annual reports were then analysed to examine whether any evidence of tax avoidance could be found.

6.1 Discussion

The table below gives the two measures of ETR discussed above in section 5 for each of the case study companies over a ten-year period. What is immediately clear is the level of variety in the figures for each of the companies. Nucor has the most consistent ETRs over the two measures. Nucor has an overall GAAP ETR of 32.93% which compares to only -241.64% for Ford. The substantial variation for Ford Motor Companies is apparent, demonstrating why they were extreme outliers, and therefore excluded from the statistical analysis. Ford's GAAP ETR varies from a negative figure of 132.95% to a positive tax charge of 34.54%. Employing a case study methodology confers the ability to conduct a focused investigation into these substantial variations.

The annual ETRs act as a signal to the researcher for key areas to investigate. The emphasis in each case study varies as we investigate the different factors that lead to the observed ETRs.

Table 5. Effective Tax Rates

%	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	TOTAL
Amazon											
GAAP ETR	-150.45*	31.82	78.68	31.16	23.51	21.79	27.41	27.88	49.60	22.20	34.29
Cash ETR	-159.46*	33.40	20.59	3.53	5.01	4.13	5.88	3.64	3.98	2.80	10.41
Ford											
GAAP ETR	26.62	(1.92)	26.53	(132.95)	8.28	(4.35)	(0.44)	34.54	17.61	(81.12)	(241.64)
Cash ETR	10.76	7.64	4.50	3.09	1.02	(29.40)	(4.76)	5.95	-2.81	36.24	41.54
Nucor											
GAAP ETR	32.28	26.04	30.48	31.23	22.85	42.65	34.37	34.66	34.78	35.03	32.93
Cash ETR	33.11	8.22	36.81	25.72	(91.76)	(51.330	34.16	38.88	36.08	39.81	34.09
Starbucks											
GAAP ETR	34.57	103.4	32.73	31.09	34.03	30.00	31.58	36.36	35.87	37.94	32.50
Cash ETR	34.33	(350.57)	30.24	19.33	36.67	28.93	57.02	32.39	30.24	28.64	38.77

Source: Author's calculations based on company annual reports 2005 -2014.

*Amazon made a loss in 2014 therefore the tax payment shows as negative despite being a payment.

6.1.1 Amazon

This case study explores how Amazon operates as a 'footloose' digital company. It is able to choose where to locate its business. Amazon has been criticised in the UK in particular for tax avoidance. Companies are liable to tax in their host country only when they have a Permanent Establishment (PE)[7]. The UK subsidiary provides services to other group companies, the largest of which is its direct parent company, Amazon EU Sarl, that is located in Luxembourg. Amazon.co.uk Ltd fulfils orders that are placed online but does not own any of the inventory (or bear any of the risk) and consequently makes no money from the sale of goods. The UK subsidiary is merely a service company providing logistics and customer support services as well as some financial services to other group companies at the instruction of Amazon EU Sarl. The annual report, filed at the UK Companies House states that: *'The principal activity of the Company is the provision of fulfilment and corporate services to other Amazon group undertakings'* (Amazon.co.uk 2014 p.5) The report also indicates that the key performance indicator (KPI) for the company is the control of administrative expenses (Amazon.co.uk 2014 p.5).

Amazon EU Sarl does not have a Permanent Establishment) in the UK and so is not liable to pay UK taxes. The only tax that is paid in the UK is that relating to Amazon.co.uk's income from providing services to other group companies. This company runs the European region business, operating out of Luxembourg across 27 EU countries. As Amazon's European sales are based in Luxembourg it must pay tax there on all its European sales. It also applies the Luxembourg VAT rate where appropriate to its sales. The VAT rate on electronic books in Luxembourg is only 3% compared with 20% in the UK. Amazon is therefore able to provide e – books to UK customers at a significantly lower price than a UK retailer (The Guardian 2012).

Amazon EU Sarl (Luxembourg) is owned by Amazon Europe Technologies Holding SCS (Technologies, Luxembourg) which is ultimately owned by Amazon Inc. (the US). Technologies, Luxembourg owns the rights to the intangible assets (IP) that have been developed in the US and charges its subsidiaries for using it (Licence Fee). Amazon's European business was the subject of investigation by the European Commission which concluded that deals agreed with the Luxembourg tax authorities in 2003 and 2011 reduced their tax liability to the point where it breached Eu rules on state aid. The European Commission concluded that the level of royalty payments was inflated and did not reflect any economic reality (European Commisson 2017).

Through careful structuring Amazon therefore strategically reduces its tax liability in European countries. Sales in countries like the UK are made by a subsidiary in Luxembourg where a deal has been agreed with the tax authorities to reduce the taxes paid there. The calculation of a UK ETR does not capture this type of tax avoidance as the calculation would be based on the existing business conducted in the UK, without including any evaluation of the business that is diverted and not recorded in the UK. This demonstrates the importance of the level of analysis. Amazon's structure and tax avoidance is complex and difficult to capture through the use of quantitative data justifying the use of case study methods and

[7] A fixed place of business that generally gives rise to tax liability in a particular jurisdiction. The OECD sets out what constitutes a PE for corporation tax purposes including shops and offices but not warehouses.

applying specifically the OECD concept of PE and the tax deal offered by the Luxembourg government to analyse in detail the way Amazon structures its business in Europe. This case study provides new useful insights into the tax affairs of this important company.

6.1.2 The Ford Motor Company

This company was selected as a case study to explore their use of deferred tax as a tax planning tool. It highlights how technical accounting regulations confer considerable tax planning ability on MNEs. Ford operated in a difficult economic climate during the ten years under consideration. In 2006, 2007 and 2008 they made significant losses. These losses affected their subsequent tax liabilities both directly and indirectly. Losses have been carried forward from previous years and offset again liabilities. The losses and poor performance also generated a less optimistic outlook for the future. This in turn necessitated the creation of a valuation provision to reflect the reduced potential of using all of the existing DT assets.

When performance improved Ford were then able to take a more optimistic view of the valuation of these DT assets. This highlights the importance of the long-term view taken by the company and the impact that this valuation of DT assets can have on their tax liabilities.

Deferred tax (DT) assets and liabilities are derived from temporary differences that exist between the financial statement carrying value of assets and liabilities and their respective tax bases. They are recognized based on the future tax consequences combined with operating loss and tax credit carryforwards on a taxing jurisdiction basis. The firm must assess the likelihood that they will have sources of taxable income against which to set these deferred tax assets. US GAAP accounting standards require firms to establish a 'valuation allowance' that is netted off against the asset, in effect reducing the total value of the deferred tax asset, if they think that they have a less than 50 per cent chance of realizing the assets. DT therefore gives companies significant scope for adjusting their DT valuation allowance based on their expectations of the future.

Ford has significant DT assets and liabilities. These are likely to be present in different countries so may not be able to be netted off against each other. Following the significant losses made in 2008 ($14,561million) Ford increased its valuation allowance against the DT asset. It judged that there was the possibility of insufficient future income to offset against the whole DT asset. The valuation allowance therefore increased from $8,560 million to $17,268 million. In 2011 Ford disclosed a more optimistic outlook on its earning potential and therefore the DT valuation allowance therefore fell from $15,664million in 2010 to $1,545million in 2011. This had the effect of reducing the disclosed ETR by 172.3 per cent in one single year, turning the overall disclosed ETR into a net benefit 141 per cent.

'Net operating loss carryforwards' refer to the ability to apply a year's net operating losses to future years' profits in order to reduce tax liability. Including the previous year's loss on the balance sheet reduces the current year's taxable profit, with the aim of providing a more accurate assessment of the overall position of the company over time. Firms can also book other forms of tax credits to the balance sheet, relating to capital losses. Ford books 'credit losses' from its financing business by calculating an average expected loss using a 'collective loss to receivables' calculation (Ford 2014 p.84).

Ford has a significant balance of Net Operating Loss Carryforwards - $7.2 billion at December 31, 2014, resulting in a DT asset of $2.6 billion (Ford, 2014 p. FS-61). There is no expiration date for $6 billion of these losses. The remaining losses begin to expire in 2015, though a substantial portion expire beyond 2017. In addition, the company has tax credits that can be used to offset future tax liabilities of $6.8billion (Ford 2014 p. FS-61).

Permanently Reinvested Earnings (PRE) are earnings generated outside the US and which the company states are ‘permanently’ reinvested outside the US, that is, they will not be repatriated and therefore are not subject to US taxes. Companies are required to state the level of PRE that they hold in their annual report. Auditors are required to verify that the earnings are permanently reinvested but there is no specific requirement about what constitutes permanent reinvestment. A firm choosing to classify earnings as permanently reinvested would have no requirement to provide for potential taxes (DT) on the amount of PRE. In future years the firm could reclassify the earnings and provide for DT. This simple reclassification could have a significant impact on the amount of DT charged to the Income Statement as the GAAP tax charge for the year.

Some companies calculate and disclose the amount of tax that would be payable if they were to choose to repatriate. Others state that this calculation is not practicable. Ford states the amount of tax that would be payable in 2014 would have been $200million if they had repatriated all their PRE (Ford 2014 p. FS-61). In 2010 Ford disclosed a level of $812million PRE which increased to $8,400 million in 2011. Ford explain that this was due to a change in accounting policy where they decided that an additional $6.3billion of overseas earnings would not be repatriated. They therefore increased the stated PRE from $812million to $8.4billion. As a consequence this reduced their DT liabilities by $63million. Other similar movements (although not of the same scale) occur in other years.

6.1.3 Nucor

The steel company Nucor was selected as a case study of a company that did not have any subsidiaries registered in tax havens and where the Cash and GAAP ETRs were both relatively close to each other and to the statutory rate of corporation tax. This case study provides a contrast to the other case studies where taxes appear to be manipulated and where the tax planning strategy appears to be more aggressive.

Nucor is a manufacturer of steel and steel products, headquartered in Charlotte, North Carolina. According to its Annual Report (Nucor 2016) it is the most diversified steel and steel products company in North America. Its financial performance has been hit by over capacity in the global steel industry and by cheap Chinese imports into the US. To combat this and maintain its competitiveness Nucor has diversified, improving the quality of goods it offers as well as expanding its downstream businesses such as fabricated construction products.

Nucor operates using segments for: steel mills, steel products and raw materials. It does not disclose information about international/ geographic segments. IFRS 8 ‘Operating Segments’ states that information should be provided about countries that account for 10 per cent or more of a company's sales. It is therefore possible to conclude that there are no countries outside the US that account for more than 10 per cent of the company's turnover.

Whilst Nucor is largely focused in the US it has significant operations in Canada, Colombia, Italy, Mexico, Switzerland, United Arab Emirates and Trinidad and Tobago. Exhibit 21 of their 10K (Nucor 2014) lists a total of 24 subsidiaries. Of these only two are based overseas: Nu-Iron Unlimited in Trinidad and Harris Steel ULC based in Canada. Operations in other countries are not disclosed as separate subsidiaries in the 10K disclosures. It would appear that these are locations where commercial operations are conducted but that overseas sales are limited.

Trinidad is not included within the list of tax havens included in the statistical analysis in Section 5.1.6. It is clear that the subsidiary in Trinidad is creating economic value. The plant in Trinidad opened in 2007 and is a direct reduced iron (DRI) facility. The press release published by Nucor (Nucor 2007) at the time the plant was opened stated that the reason for the selection of Trinidad was because the site: *'benefits from a low-cost supply of natural gas and favorable logistics for receipt of Brazilian iron ore and shipment of DRI to the US'* (Nucor 2007). It therefore appears the choice of Trinidad was based on commercial rather than tax avoiding reasons.

Out of the total 24 subsidiaries listed 20 are registered in Delaware. Delaware has no state taxes for firms registered there. It also has higher levels of secrecy than some other US states for example, the identity of the owners of private companies do not need to be filed. The Nucor website lists the locations of 64 plants in the US. None of the plants are based in Delaware. It would therefore seem that the decision to register subsidiaries in Delaware may be based on the tax and legal position in Delaware as there is no economic activity undertaken there. The decision may be a historic one, however, as the original Nucor corporation was registered there in 1958 (Nucor 2009). Basing the subsidiaries in Delaware means that the firm will pay less state tax within the US than if the subsidiaries were registered in other states. This is likely to be reflected in Nucor's material tax disclosures which simply include 'US Taxes' and 'International Taxes' with no separate disclosure of 'Federal' and 'State' taxes (See **Error! Reference source not found.** below).

Nucor have accumulated PRE of $194million at the end of 2014. There has been some movement up and down over the period that they have recorded these investments which started only in 2008. The amount recorded is significantly lower than other companies such as Ford who recorded $4,300 and Starbucks who recorded $2,200m.

Nucor have international subsidiaries and significant operations overseas. It appears however that the bulk of their sales must be made in the US as no international segment reporting is included in their annual reports. Their corporation tax is significantly closer to the statutory rate in all years and their GAAP and cash ETRs are similar in each year and over the total period. This, combined with the lack of tax haven subsidiaries, appears to indicate that the company has adopted a non-aggressive tax avoidance stance. The only indication of a tax avoidance strategy is the registration of US subsidiaries in Delaware, a decision that appears to have been taken as early as 1958. This case study shows the differences between MNEs; not all adopt an aggressive tax planning position.

6.1.4 Starbucks

The case of Starbucks demonstrates how a traditional ‘bricks and mortar’ company, where there is clarity about the point of sale, has managed to reduce their profitability in the UK by shifting profits to other group subsidiaries. They have used intra company debt, royalty charges and transfer pricing. MNEs can choose to adopt mechanisms such as these to reduce their tax bill. The UK Public Accounts Committee (PAC) investigation in 2012 (House of Commons 2012) revealed many of the practices used by Starbucks to reduce their global tax liability.

The overall headquarters for the Starbucks Corporation are based in Seattle. Each of their three international regions have their own headquarters. The 33 countries making up Europe, Middle East and Africa region were based in Amsterdam with Starbucks Coffee EMEA BV as the holding company until 2014. Separate companies based in the market countries then remitted profits (if any) back to the Netherlands. In the Netherlands, tax is paid at an undisclosed rate after an agreement with the Dutch tax authorities.

In the UK (at 2012) there were 593 company operated stores and 145 licensed stores (Starbucks Coffee Company (UK) Ltd Annual Report 2012). Later figures are unavailable. Starbucks has been strongly criticised in the UK for not paying adequate taxes. Like other tax avoiders it has argued that it has paid all the tax that it owes. Starbucks, with Google and Amazon were called to give evidence in front of the House of Commons Public Accounts Committee (House of Commons, Public Accounts Committee 2012). Starbucks has been particularly criticised for its lack of transparency that creates difficulties for tax authorities in the US, UK and other countries (Kleinbard 2013).

In 2012 the press reported that Starbucks had recorded losses in 14 out of the first 15 years of operations in the UK and had therefore paid very little tax. This was despite holding a 30 per cent market share and reporting that the U.K was performing well to shareholders (House of Commons, Public Accounts Committee 2012). Starbucks argued that the property costs in the UK were making it difficult for them to become profitable.

In 2014 Starbucks announced that they were moving their regional headquarters from Amsterdam to the UK. Starbucks explained that this move was because the UK is the largest market in the region. The UK stand-alone company was dissolved and replaced with a new company, Starbucks EMEA Ltd. One other reason suggested for the move to the UK was the recent change to a territorial tax system – where companies are charged tax only for the income earned within the UK. They are not charged tax on income earned outside the UK. This means that no taxes are charged on the royalties received in the UK from the rest of the region. This makes the UK a more efficient location for tax purposes than the Netherlands. This illustrates the importance of tax to companies; it affects where they locate their headquarters as well as how they structure their business more broadly.

Starbucks adds value by breaking down its supply chain to buy and roast coffee beans. These operations are conducted from their offices in Lausanne, Switzerland where 30 people are employed. According to their written evidence to the PAC, 75% of all coffee beans are traded through Switzerland (Starbucks, 2012a). Starbucks accounts for less than

5% of world trade. Starbucks in Switzerland make a 20% mark up on sales to the rest of the Starbucks Group (House of Commons, Public Accounts Committee 2012). Starbucks pay a corporation tax rate there of approximately 12% (House of Commons, Public Accounts Committee 2012).

Beans are roasted in Starbucks owned facilities around the world. In Europe there is a roasting facility in the Netherlands. 260 people are employed in Starbucks operations in the Netherlands. This number does not appear to be diminished by the move of headquarters to the UK (Starbucks 2015). One source reported that only 10 extra members of staff are likely to be employed in the UK following the headquarters' move (Tax Research 2014).

Until 2014 when the EMEA headquarters were moved to the UK, royalties were paid by Starbucks UK to a Dutch subsidiary. In written evidence to the Public Accounts Committee (Starbucks 2012a) Starbucks reported that the operating companies in EMEA were paying 6 per cent royalty payments to the Dutch headquarters. This fee entitled the operating companies to use the Starbucks brand and trademarks as well as: *'use of the proprietary business model'* and *'store design concepts'.* Starbucks argued that 6 per cent was a *'standard business practice*' (House of Commons, Public Accounts Committee 2012b*)* and a justifiable TP under the ALS. A later agreement with HMRC reduced the allowable percentage to 4.7 per cent (Hodge 2016 p. 81). McDonalds and Burger King charge 4% to their subsidiaries, KFC do not charge subsidiaries a royalty fee.

The third mechanism which appears to be used for profit shifting is the use of intra company loans. Starbucks Coffee Company UK Ltd was funded by debt, provided by the Group, on which it then pays interest. The rate charged by Starbucks Corporation is Libor plus 4.9%. Starbucks Corporation bonds carried a coupon of Libor plus 1.3% in October 2012 so they are charging the UK company significantly more than their own borrowing costs (Bergin 2012).

Following the bad publicity, particularly around the Public Accounts Committee enquiry Starbucks offered to pay an extra £20million in corporation tax over the next two financial years. Margaret Hodge reveals (Hodge 2016) that rather than approach HMRC to discuss their tax affairs the Starbucks UK managing director spoke directly to her to offer to make this payment. Hodge argues that this offer demonstrates the problems with the corporation tax system when MNEs choose to make tax payments rather than paying the tax assessed by the tax authorities.

6.2 Conclusion

The use of case studies demonstrates the heterogeneity of approaches adopted by these companies. Each case study reveals the complexity of the tax planning strategies adopted and the results of these. They show how the individual companies have planned their taxes with different emphases on the use of location and corporate structure, IP and royalties and deferred taxes. Taking a case approach enables us to explore the detail of these different strategies, generating new knowledge and adding to the overview generated in the regression analysis reported in Section 5. Efficacious policy making must be founded on a clear understanding of the different practices implemented by different MNEs. Differences highlighted here derive from the use of losses and deferred tax, an obscure point of sale, and the ability to adopt profit shifting policies. Some of these issues are discussed below in the section on interviews.

7 Interviews

Interviews with senior tax executives were conducted to explore their experiences of working with and in companies that adopt tax avoidance practices. These add to the detail provided in the case studies and enable the researcher to penetrate the 'black box', that is, the decision-making within the MNE. Existing research based solely on quantifiable financial factors ignores the impact of management decision and choice, taking a neoclassical approach that deems all to operate in the same manner. Using qualitative research is a useful approach for the IB researcher potentially providing new and holistic insights to enhance our understanding of a phenomenon. There have been recent calls (Birkinshaw, Brannen and Tung 2011; Doz 2011) for greater emphasis on qualitative research methodologies because as Doz (2011): *'We know less about how multinationals actually operate today…than…in the 1970s'.* Birkinshaw et al (2011) also argue that the *'thick description'* that can be generated by qualitative methods is imperative for theory building and generating hypotheses in IB and that the dynamic nature of IB is one of the factors that makes qualitative research vital in this field. Tax is a clear example of a rapidly changing phenomenon with the profit shifting opportunities presented to MNEs expanding with the growth in complex global value chains and the rise in the digital delivery of goods and services. This, therefore, supports the view that the in-depth findings generated by interview research will make a significant contribution to improving understanding of this area.

Participants were identified through two routes. In the first, large US companies with operations in the UK were identified, the same sample as used for the quantitative research reported above. As expected, the acceptance rate was very low (4/100). Selection bias may have meant that those responding positively to this letter had a positive 'tax story' to tell. In order to address this a second approach was developed concurrently using personal contacts. A rigorous approach was used to ensure that the interviewees identified using this method were similar in terms of seniority as those responding to the letter. Whilst the sample size is small there is a lack of disagreement between interviewees, and the level of repetition between them seemed to suggest that saturation had been achieved (Suddaby 2006).

Interviewees were guaranteed confidentiality which was clearly important to them. The interviews were conducted using a semi-structured framework with a flexible schedule of questions that was piloted before being used in the recorded interviews. Where possible the interviews were recorded and transcribed. All of the interviews (except one which was conducted by phone) were conducted face to face and lasted for around one hour. The interviews were analysed using Nvivo specialist software, enabling specific themes to be identified and used to code the interview transcripts.

The transcripts were re-read and the recordings listened to a number of times. When new codes were identified from the data previous transcripts were revisited so that these codes could be used.

7.1 Interview Findings

7.1.1 Extent of Tax Planning

Interviewees discussed their approaches to tax planning and were clear that companies have to make decisions on their overall tax strategy position as well as about the details of tax planning. Tax laws and regulations provide a framework within which MNEs make decisions. Interviewees described tax planning as a continuum with companies positioning themselves at a point where they are comfortable with the balance of the risk of damage to their reputation and potential fines from HMRC, against their ability to reduce their tax liability. This was not always thought to be an easy decision to make. Interviews explored the factors that affect where a company positions itself on this continuum.

Interviewees expressed the view that companies have a duty to shareholders to reduce their taxes:

'Tax is like any other line in your P&L. It is a cost that you have a duty or an obligation to manage as effectively as possible.' (Company 1).

But this was balanced against the possible downsides of reducing the tax liability too far. Reputation emerged as an important factor for some companies, particularly those that are higher profile and concerned with their image to customers. For companies that are less well known or operate in a business-to-business capacity reputation was less important and therefore these companies experience greater freedom in their tax planning strategy.

Some companies appear to have been impacted by an increased hostility towards business and a stronger approach from the government towards tax avoidance. These companies described 'rolling back' from their more aggressive positions. Some argued however, that whilst there may have been a reduction in tax avoidance this was due to the increase efforts of HMRC and anti-avoidance policies, others felt that there had been a more comprehensive cultural shift.

7.1.2 What Drives a Company's Adopted Position?

Interviews explicitly explored what drives the position that companies adopt to improve understanding of the heterogeneity of companies' position on tax. Interviewees suggested that the people within the company set the 'tone' of attitude towards risk more generally and to the risk associated with tax avoidance more specifically. The 'tone' was felt to emanate from the Board of Directors, the CEO and Tax Director specifically.

The interviewees were questioned about the stance that their company took and almost all described their company as adopting a conservative stance, doing less than their competitors. Further discussion about the details of what they were doing to reduce their tax liability revealed a wider dispersion. Discussion also centred around the personal ethics of individuals which played a key role in how aggressive tax planning would be. Individuals spoke about the importance of ethical 'fit' between their company and colleagues and their own personal stance. The role of tax departments was also a factor in driving strategy. Some businesses had very small internal teams and were more reliant on external advisers, others had strong in-house teams and little need of external advice. Interviewees from both styles of department felt strongly that this would not lead to a change in position.

Discussion centred around how individuals in tax roles are motivated financially. Interviewees agreed that prior to the 2008 financial crash performance was often incentivised in terms of minimising the corporate ETR and pay was often dependent on this with measures of ETR used as KPIs. Almost all interviewees felt that there had been a tangible move away from the use of minimising ETR as a measure of performance. If ETRs were still used as a KPI it would be more likely that the company was aiming for an ETR within a specific range. ETRs were said to be 'optimised' rather than 'minimised'. Many of the factors already discussed in this paper (attitude to risk, potential impact on operation, ethics of individuals) would drive the 'optimal' ETR.

Issues surrounding the company itself and its overall strategy could also directly affect their motivation to avoid tax. Companies that were struggling more financially could be driven to attempt to reduce their tax bill. Even for large MNEs the tax bill is likely to be the single biggest bill that they face during a year.

'There are a lot of factors that influence whether their stance is more aggressive or less aggressive and I have seen situations where companies had financial commitments and they had no choice but to be aggressive because they had cash flow needs and so they had no choice because they had to keep the banks happy.' (Expert 5)

Wider corporate strategy could also drive a company's tax position. Tax Directors saw their role as facilitating and implementing overall corporate strategy. If a company was going through an acquisition for example, tax would be one of the important factors that could affect how a deal was structured but would not drive the deal itself. In this way tax heterogeneity is likely to be driven by the heterogeneity of approaches to strategy itself. Drivers and opportunities are likely to be significantly different for firms with a strategy of acquiring new businesses to one that aims for organic growth. The degree of internationality of the business and the extent of their overseas operations may also affect their ability to avoid tax.

This research makes some significant contributions to understanding the question: *'What drives the adoption of tax strategies by MNEs?* The findings from these interviews indicate the importance of aspects, such as the experience of the individuals' and the company's overall attitude to risk that the development of theory must take into account. These new findings make an important extension to internalization theory.

The small sample limits the robustness of some of the conclusions that can be drawn from this work but as a highly innovative piece of research in this field it provides impetus and direction for future pieces of research as discussed below. Clearly the individuals involved in the tax planning process make decisions based on their own personal values and ethics as well as their interpretation of the risk profile and the ethical stance of the company that they work for. The company's position on tax planning is affected by their attitude to a more comprehensive attitude to risk.

8 Findings and Conclusions

This paper makes a significant contribution to understanding what drives MNEs in their adoption of tax planning strategies. We combine three methodologies to address the shortcomings in the data that is available to study this phenomenon and create new insight that is invaluable for policy makers. Policy is too often based on research and understanding that treats MNEs as a homogenous group. The quantitative analysis presented in Section 5 demonstrates that there are key links between corporate characteristics and the ETRs that the companies are able to achieve. Companies that are larger, have more women on the board, that are more international and that use IP more extensively are likely to achieve lower ETRs. This diversity of approaches is explored in the case studies that are reported briefly in Section 6. These explore some of the ways that three companies have been able to reduce their tax liabilities in certain jurisdictions and the way that structure and technical accounting concerns have been used. The Nucor case study again highlights the diversity of approaches by reporting on a company for whom tax avoidance does not appear to be a priority.

The interviews go further, exploring within the companies at a micro level to generate a new understanding of the factors that exist within them to drive their tax planning position. The role of individuals, ethics and experience is key. The diversity between companies is highlighted by their need to find a fit between their own ethics and those of their employer. Issues around the financial performance of the firm and the impact that this can have on their motivation to avoid tax require further exploration.

9 Limitations and Areas for Future Research

This research generates new insight into an area where research is traditionally hampered by a lack of available data. Three methodologies are used to triangulate data and create a holistic view of what drives these MNEs. Bringing three methods together in one paper means that there is a limit to how much of the methods and findings can be reported due to the limitations on space.

The sample size for each method was restricted. For the regression analysis the small sample size was used to enable the researchers to consider the companies in detail. This dovetailed with the case studies that were reported in Section 6. The original case study analysis has a depth that cannot be reported in this paper and so the paper simply reports on the key conclusions from each. More case studies and the reporting of more detailed analysis would add to the robustness of this methodology. The sample size for the interviews was small and whilst the researchers felt that saturation had been achieved through the repetition of information and views that they received, further interviews could have added robustness.

This paper highlights a number of areas where future research is needed. The role of women within corporate governance, on the board and in positions of leadership, is a neglected area and the difference that they can make is highlighted here. The size of the company was shown to be significant but it is not clear what aspect of size drives this difference. Research with a larger sample size could be useful and could consider the role played by industrial sector. The role played by deferred taxes, valuation allowances and losses should also be considered further and could generate insight into how issues in accounting for taxes confers the ability on companies to be flexible in their approach and in the timing of their taxes.

Robust research into these key areas that drive the heterogeneity of approaches can provide the greater insight that is needed by policy makers so that they can target policies to tackle effectively the range of tax planning practices that are implemented by MNEs.

10 Bibliography

Adams, R. and Ferreira, D. (2009). Women in the boardroom and their impact on corporate performance. *Journal of Financial Economics,* 94 pp. 291-309.

Amazon.co.uk (2014) Amazon.co.uk Ltd. Report and Financial Statements. 31 December 2014.

Armstrong, C. Blouin, J. and Larcker, D. (2012). The incentives for tax planning. *Journal of Accounting and Economics*, 53 pp. 391-411.

Azemar, C. (2010). International corporate taxation and US multinationals' behaviour: an integrated approach. *Canadian Journal of Economics*, Vol. 43, No.1.

Barua, A. Davidson, D. Rama, V and Thiruvadi, S. (2010). CFO gender and accruals quality. *Accounting Horizons*, 24 (1) pp. 25-39.

Bear, S. Rahman, N. and Post, C. (2010). The impact of board diversity and gender composition on corporate social responsibility and firm reputation. *Journal of Business Ethics* 97 pp. 207-221.

Benvignati, A. (1987). Domestic profit advantages of multinational firms. *Journal of Business,* 3, pp. 449-461.

Bergin, T. (2012). Special report: How Starbucks avoids UK taxes. *Reuters*, October 15, 2012. Available at: http://uk.reuters.com/article/uk-britain-starbucks-tax-idUKBRE89E0EW20121015 [Accessed 17/10/2015]

Bewley, K. and Schneider, T. (*2013*) Triple bottom line accounting and energy-efficiency retrofits in the social-housing sector: A Case Study. Accounting and the Public Interest. Vol. 13, No. 1, pp. 105-131.

Birkinshaw, J. Brannen, M. and Tung, R. (2011). From a distance and generalizable to close up and grounded: reclaiming a place for qualitative methods in international business research. *Journal of International Business Studies,* 42 (5), pp.573-581.

Bradbury, D. Hanappi, T. and Moore, A. (2018) Estimating the fiscal effects of base erosion and profit shifting: data availability and analytical issues. *Transnational Corporations 25 (2)*

Bryman, A. (2007), Barriers to integrating quantitative and qualitative research. *Journal of Mixed Method Research* 1(8) pp 9-22.

Bryman, A. (2006) Barriers to integrating quantitative and qualitative research: How is it done? *Qualitative Research, 6 pp97-113.*

Chen, C. Su, X. and Wu, X. (*2010*) Auditor changes following a big 4 merger with a local Chinese firm: A Case Study. AUDITING: A Journal of Practice & Theory. Vol. 29, No. 1, pp. 41-72.

Cooper, M. and Knittel, M. (2006) Partial Loss Refundability: How Are Corporate Tax Losses Used? *National Tax Journal*, 59 (3) pp 651-663.

Creswell, J. (2003)Research design: Qualitative, quantitative and mixed methods approaches. 2nd ed. Thousand Oaks CA: Sage

Creswell, J. and Plano Clark, V. (2007) Designing and conducting mixed methods research. Thousand Oaks CA: Sage

Desai, M. and Dharmapala, D. (2006) Corporate tax avoidance and high-powered incentives. *Journal of Financial Economics* 79 (1) pp. 145–179

Desai, M. Foley, F. and Hines, J. (2006) The demand for tax haven operations. *Journal of Public Economics,* 90 pp. 513 – 531.

Dharmapala, D. and Riedel, N. (2013) Earnings shocks and tax motivated income shifting? Evidence from European multinationals. *Journal of Public Economics.* 97 January 2013 pp. 95-107.

Dharmapala, D. Foley, F. and. Forbes, K. (2011). The unintended consequences of the Homeland Investment Act: implications for financial constraints, governance and international tax policy. *Journal of Finance,* 66 (3), pp. 753-787.

Dischinger, M. and Riedel, N. (2011) Corporate taxes and the location of intangible assets within multinational firms. *Journal of Public Economics*, 95 pp. 691- 707.

Donohoe, M. McGill, A. and Outslay, E. (2012) Through a glass darkly: What can we learn about a US multinational corporation's international operations from its financial statement disclosures? *National Tax Journal*, 65 (4) pp. 961-984.

Doz, Y. (2011) Qualitative research for international business. *Journal of International Business Research*, 42 (5) pp. 582-590

Dyreng, S. Hanlon, M and Maydew, E. (2008) Long-run corporate tax avoidance, *The Accounting Review,* 83 (1) pp. 61-82.

Dyreng, S. and Lindsey, B. (2009). Using financial accounting data to examine the effect of foreign operations located in tax havens and other countries on US multinational firms' tax rates. *Journal of Accounting Research,* 47 (5).

Eagly, A. Johannesen-Schmidt, M. and van Engen, M. (2003). Transformational, transactional, and laissez-faire leadership styles: a meta-analysis comparing women and men. *Psychological Bulletin*, 129(4) pp. 569–591.

Eagly, A. H. and Johnson, B. (1990). Gender and leadership style: a meta-analysis, *Psychological Bulletin*, 108(2), 233–256.

Eden, L. and Byrnes, W. (2019) Transfer pricing and state aid: the unintended consequences of advance pricing agreements. *Transnational Corporations* 25 (2)

European Commission (2014) Amazon State aid SA.38944 (2014/C) – Luxembourg Alleged aid to Amazon by way of a tax ruling. Brussels 7/10/2014. URL: http://ec.europa.eu/competition/state_aid/cases/254685/254685_1614265_70_2.pdf [Accessed 3/4/2015]

Foley, C. Hartzell, J. Titman, S. and Twite, G. (2007). Why do firms hold so much cash? A tax based explanation. *Journal of Financial Economics*, 86 (3) pp.579-607.

Ford Motor Company (2014) 10K URL: http://corporate.ford.com/investors/reports-and-filings/sec-filings.html Accessed 14/9/2016

Francis, B. Hasan, I. Wu, Q. and Yan. M (2014). Are female CFOs less tax aggressive? Evidence from tax aggressiveness. *The Journal of the American Taxation Association*, 36 (2) pp. 171-202.

Gravelle, J.G. (2009). Tax Havens: international tax avoidance and evasion. *National Tax*

Journal, 62 (4), pp. 727-753.

Hageman, A. and Bobek Schmitt, D. (2014) Institutional and Political Antecedents of Interjurisdictional Tax Harmonization: Lessons from Three States. Accounting and the Public Interest. Vol. 14, No. 1, pp. 1-33.

Hanlon, M. and Heitzman S. (2010). A review of tax research. *Journal of Accounting and Economics* 50 (2/3) pp. 127 – 178.

Harrington, C. and Smith, W. (2012). Tax avoidance and corporate capital structure. *Journal of Finance and Accountancy*, 11 p. 144.

Hillman, A. Cannella, A. and Harris, I. (2002). Women and racial minorities in the boardroom: how do directors differ? *Journal of Management*, 28, pp. 747–763.

Huang, J. and Kisgen, D. (2013) Gender and corporate finance: Are male executives overconfident relative to female executives? Journal of Financial Economics 108 (3) 822-839.

Ghauri P. and K. Grønhaug (2002). *Research Methods in Business Studies: A Practical Guide*, Harlow, UK: Financial Times and Prentice Hall.

Grubert, H. (2003) *The tax burden on cross border investment: company strategies and country responses.* US Treasury Department, Centre for Economic Studies and Ifo Instititute) CESifo Working Paper Series No 964. Available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=417348 [Accessed 20/6/2014].

Grubert, H. and Mutti, J. (1991). Taxes, tariffs and transfer pricing in multinational corporate decision making. *The Review of Economics and Statistics,* 73, (2) pp. 285-293.

Gupta, S, and Newberry, K. (1997). Determinants of the variability in corporate effective tax rates: Evidence from longitudinal data. *Journal of Accounting and Public Policy,* 16 (1) pp. 1–34.

Hair, J. Black, W. Babin, B. Anderson, R and Tatham, R (2006). *Multivariate data analysis*. 7th Ed. Upper Saddle River, NJ: Pearson Prentice Hall.

Harrington, C. and Smith, W. (2012). Tax avoidance and corporate capital structure. *Journal of Finance and Accountancy*, 11 p. 144.

Hines, J. and Rice, E. (1994). Fiscal Paradise: foreign tax havens and American Business. *Quarterly Journal of Economics,* 109 pp. 149 – 182.

Hodge, M. (2016) *Called to Account.* Great Britain: Little Brown

House of Commons, Public Accounts Committee (2012). Minutes of Evidence. HC716. 12 November 2012. Available at: https://www.publications.parliament.uk/pa/cm201213/cmselect/cmpubacc/716/121112.htm [Accessed 3/2/2014].

Huseynov, F. and Klamm, B. (2012) Tax avoidance, tax management and corporate social responsibility. Journal of Corporate Finance. 18. 804-827.

Jones, C. and Temouri, Y. (2016). The determinants of tax haven FDI*.* *Journal of World Business,* 51 (2) pp. 237–250.

Kleinbard, E. (2013). Through a latte, darkly: Starbucks's stateless income planning. *Tax Notes*, June 24, 2013, pp. 1515-1535.

Konrad, A. Kramer, V. and Erkut, S. (2008). Critical mass: the impact of three or more women on corporate boards. *Organizational Dynamics,* 37(2), pp. 145–164.

Lanis, R. and Richardson, G. (2015). Is corporate social responsibility performance associated with tax avoidance? *Journal of Business Ethics* 127 pp. 439-457.

Lhaopadchan, S. (2010) Fair value accounting and intangible assets. *Journal of Financial Regulation and Compliance,* 18(2) pp. 120-130.

Markle, K. and Shackelford, D. (2009). *Do Multinationals of Domestic Firms Face Higher Effective Tax Rates?* NBER Working Paper 15092. Available at: http://www.etpf.org/papers/41CIT.pdf [Accessed 10/10/2015].

Mills, L. and Newberry, K. (2004). Do foreign multinationals' tax incentives influence their US income reporting and debt policy? *National Tax Journal*, 57(1) pp. 89-107.

Minnick, K. and Noga, T. (2010). Do corporate governance characteristics influence tax management? *Journal of Corporate Finance*, 16 pp. 703-718.

Molina-Azorin, J. (2012) Mixed methods research in strategic management: Impact and applications. *Organizational Research Methods.* 15 (1) 33-56.

Muller, A. and Kolk, A. (2015). Responsible tax as corporate social responsibility: the case of multinational enterprises and effective tax in India. *Business and Society*, 54(4) pp. 435–463

Nucor (2007) Nucor announces start up of production of DRI in Trinidad. Available at: http://nucor.ca/investor/news/print/?rid=950793 [Accessed 31/5/2017]

Nucor (2009) Annual Report 2009. Available at: http://www.nucor.com/investor/sec/html/?id=6787926&sXbrl=1&compId=107115

Nucor (2014) Annual Report 2014. Available at: http://www.nucor.com/investor/sec/html/?id=10109132&sXbrl=1&compId=107115

Nucor (2016) Annual Report 2016. Available at: http://www.nucor.com/investor/sec/html/?id=11431961&sXbrl=1&compId=107115

Piekkari, R. and Welch, C. (2011). *Rethinking the Case Study in International Business and Management Research.* Elgar: Cheltenham.

Porcano, T. (1986). Corporate Tax Rates: Progressive, Proportional or Regressive. *The Journal of the American Taxation Association,* 7, pp. 17-31.

Post, C. Rahman, N. and Rubow, E. (2011) Green governance: board of directors' composition and environmental corporate social responsibility. *Business and Society* 50 (1) pp. 189-223.

Rego, S. (2003). Tax avoidance activities of US multinational corporations. *Contemporary Accounting Research* 20 (4) pp.805-833.

Robinson, J. Kises, S. and Weaver, C. (2010). Performance measurement of corporate tax departments. *Accounting Review* 85, pp.1035-1064

Shackelford, D. Slemrod, J. and Sallee, J. (2011) Financial reporting, tax and real decisions: towards a unifying framework. *International Tax and Public Finance*, 18 (4) pp. 461-494.

Shevlin, T. and Porter, S. (1992). The corporate tax comeback in 1987: some further evidence. *Journal of the American Taxation Association,* 14 (1) pp. 58–79.

Singh, V. Terjesen, S. and Vinnicombe, S. (2008). Newly appointed directors in the boardroom: how do women and men differ? *European Management Journal*, 26(1) pp. 48–58.

Slemrod, J. (1998). Methodological issues in measuring and interpreting taxable income elasticities. *National Tax Journal,* 51 (4) pp.773 – 788.

Stake, R. (1995). *The art of case study research: perspectives on practice.* Thousand Oaks CA: SAGE.

Starbucks (2012a) Written evidence from Starbucks to the Public Accounts Committee. Available at: https://www.publications.parliament.uk/pa/cm201213/cmselect/cmpubacc/writev/716/m02.htm [Accessed 14/10/2016]

Starbucks (2015) Starbucks Annual Report 2015. Available at: https://s22.q4cdn.com/869488222/files/doc_financials/annual/2015/Starbucks-Fiscal-2015-Form-10-K.pdf [Accessed 13/10/2016]

Suddaby, R. (2006). From the Editors: what grounded theory is not. *Academy of Management Journal*, 49(4) pp.633-642.

Symon, G. and Cassell, C. (2012) Qualitative Organizational Research. Sage: London

Taylor, G. Richardson, G. and Lanis, R. (2015). Multinationality, tax havens, intangible assets and transfer pricing aggressiveness. *Journal of International Accounting Research,* 14 (1) pp. 25-57.

Tashakkori, A. and Teddlie, C. (2003) Handbook of mixed methods in social and behavioural research. Thousan Oaks CA: Sage

The Guardian (2012) *Amazon makes UK publishers pay 20% VAT on ebook sales*. The Guardian 21/10/2012. Available at: https://www.theguardian.com/technology/2012/oct/21/amazon-forces-publishers-pay-vat-ebook

Torgler, B. and Valev, N. (2010). Gender and public attitudes toward corruption and tax evasion. *Contemporary Economic Policy,* 28 pp. 554-568.

Vaitsos, C. (1974) *Intercountry Income Distribution and Transnational Enterprises.* Oxford: Clarendon Press.

Wang, J. and B. Coffey (1992). Board composition and corporate philanthropy. *Journal of Business Ethics*, 11(10), pp. 771–778.

Williams, R. (2003). Women on corporate boards of directors and their influence on corporate philanthropy, *Journal of Business Ethics*, 42, pp. 1–10.

Wright, A. (2011) Watch what I do, not what I say: new questions for documents in international business research, in R. Piekkari, and C. Welch, C. eds (2011). *Rethinking the Case Study in International Business and Management Research.* Elgar: Cheltenham.

Zimmerman, J. (1983) Taxes and Firm Size. *Journal of Accounting and Economics,* (5) pp. 119- 149.

11 Appendices

11.1 Appendix 1

Tax Haven Definitions

	Dot Tax Haven	Group 1	Group 2	Group 3
Andorra	✓		✓	
Anguilla	✓			✓
Antigua	✓			✓
Aruba				✓
Bahamas	✓			✓
Bahrain	✓		✓	
Barbados	✓			✓
Belize	✓			✓
Bermuda	✓		✓	
British Virgin Islands	✓			✓
Cayman Islands	✓			✓
Cook Islands	✓			✓
Costa Rica				✓
Cyprus	✓			✓
Gibraltar	✓		✓	
Grenada	✓			
Guernsey	✓	✓		
Hong Kong		✓		
Isle of Man	✓	✓		
Ireland	✓	✓		
Jersey	✓	✓		
Labuan (Malaysia)			✓	
Lebanon	✓			✓
Liechtenstein	✓			✓
Luxembourg	✓	✓		
Macao	✓		✓	
Malta	✓		✓	
Marshall Islands				✓
Mauritius				✓
Monaco	✓		✓	
Nauru				✓
Netherlands Antilles	✓			✓
Niue				✓
Panama				✓
Saint Kitts and Nevis	✓			✓
Saint Lucia	✓			✓
Saint Vincent	✓			✓
Samoa				✓
Seychelles	✓			✓
Singapore		✓		
Switzerland		✓		
Turks and Caicos	✓			✓
Vanuatu				✓