U.S. MULTINATIONAL CORPORATIONS' COMPETITIVENESS UNDER WORLDWIDE TAXATION: A CASE STUDY OF THE UNITED KINGDOM AND JAPAN'S TRANSITION TO TERRITORIALITY

by

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A THESIS

Presented to the Department of the Lundquist College of Business
and the Robert D. Clark Honors College
in partial fulfillment of the requirements for the degree of
Bachelor of Arts

December 2014

An Abstract of the Thesis of

Coleman P. Boyer for the degree of Bachelor of Arts
in the Department of the Lundquist College of Business to be taken December 2014

Title: U.S. Multinational Corporations' Competitiveness under Worldwide Taxation: A Case Study of the United Kingdom and Japan's Transition to Territoriality

Approved: _____

Professor Linda Krull

This paper investigates whether the United States' worldwide system of taxation with deferral systematically disadvantages U.S. multinational corporations' competitiveness in relation to their territorial counterparts. The paper approaches answering this question through a comparative case study between three countries: the United States, the United Kingdom, and Japan. The United Kingdom and Japan transitioned from a worldwide system of taxation to a territorial taxation regime in 2009. The year of 2009 provides a bright line to compare whether their transitions to territoriality changed the competitiveness of their multinational corporations in comparison to the multinational corporations in the U.S. I find through analyzing five indicators of direct competitiveness and five measures of the consequences of competitiveness that the U.S. following the 2009 transitions to territoriality is no more or less competitive than the two territorial nations of the United Kingdom and Japan.

Acknowledgements

I would like to thank Professors Linda Krull, Ryan Wilson, and Louise Bishop for helping me to fully examine the specific topic and consider the various perspectives and contexts related to this subject matter. I would like to express my sincerest gratitude to these three caring faculty members who guided me through this arduous but rewarding process. Specifically, I am privileged to have worked alongside Professor Linda Krull; thank you for willingness to share your knowledge with a pupil like myself. Additionally, none of this would have been possible without the continual support of my ever-loving family and friends.

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I. Introduction

U.S. corporations are increasingly holding greater amounts of cash and investments abroad. A recent statistic provided by the United States Senate Committee on Finance in November 2013 placed this figure at $4.5 trillion (Committee, 2013). This growing figure has received considerable scrutiny predominately attributable to the associated forgone tax revenue on unremitted earnings; however, the associated long-term implications are a greater cause of concern than a one-time reduction in the United States' deficit.[1] This paper advances that increasing foreign investment is indicative of an international taxation system that systematically places U.S. multinational corporations at a competitive disadvantage compared to their foreign counterparts operating under a territorial system of taxation.

The primary difference between the U.S. worldwide system and the territorial regime is the treatment of foreign income. Under territorial taxation foreign income is typically exempt from the home country's tax. Whereas a worldwide tax system, like the one implemented in the U.S, attempts to tax foreign income at the home country tax rate while allowing tax credits for the amount of taxes paid in foreign jurisdictions. Each of the two international taxation systems has a sizeable amount of research devoted to outlining their respective economical advantages and disadvantages. This overarching debate is not the concern of this paper, but it focuses on a specific critique of the worldwide system of taxation.

[1] For tax purposes, it is important to consider that the entire $4.5 trillion of investments is not subject to the U.S. tax rate. To the extent that the investments are funded with reinvested earnings, repatriation of the investment is subject to the U.S. tax rate. Those investments financed through borrowed funds or capital investments of the U.S. parent corporation are not considered taxable by the U.S. government, but the income generated from these investments is taxable. The report by the U.S. Senate Committee on Finance did not specify these differentiated amounts.

The shortcomings of the United States' worldwide taxation model have long formed the nucleus of a discourse lead by private sector leaders, yet their concerns have been historically discounted.[2] The conclusions of CEOs and high-ranking executives like Tim Cook of Apple and David Cote of Honeywell lack serious recognition due to their inherent self-interests associated with a policy to reconstruct the United States' corporate income tax. Furthermore, the perspective of executives turned tax critics are underpinned by generalizations. For example, the expertise of a CEO is limited to the boundaries of his or her respective enterprise and at most to the industry the company operates within. This paper seeks to provide an objective approach by applying an academic methodology to the claims of the private sector and address the question of whether the worldwide taxation system competitively disadvantages U.S. multinational corporations (MNCs) in comparison to the territorial basis of taxation.

I analyze the competitive nature of the worldwide taxation system through two comparative case studies of the United Kingdom and Japan, who in 2009 converted from worldwide taxation systems to territorial taxation systems. I analyze indicators of competitiveness against measurements of the consequences of competitiveness for the years between 2006-2012 to determine if a significant change in competitiveness has taken place since their transitions in 2009. Including measurements of direct competitiveness and the consequences of competitiveness tests for both the causes and

[2] A Senate subcommittee hearing in April of 2013 accused Apple Inc. of tax evasion tactics in which its CEO, Tim Cook, responded with: "The tax system handicaps American corporations in relation to our foreign competitors who don't have such constraints on the free flow of capital" 12/10/2014 2:38:00 PM. Additionally, Honeywell's CEO, David Cote, was recently quoted in an interview stating, "We need to have a globally competitive tax system for our companies. If you put U.S. companies at a disadvantage when they're competing in emerging economies, we're making a huge mistake" 12/10/2014 2:38:00 PM.

the effects of the changes in overall competitiveness. The direct measures of competitiveness should theoretically be directly related to the consequences of competitiveness; therefore, an indication of increased direct competiveness should be accompanied by an increase in the consequences of competitiveness and vise versa. This dual analysis provides a two-test approach to ensure the accuracy of the paper's findings. The direct measures of competitiveness include: corporate compliance costs, corporate tax revenues, average ROA, expenditure on corporate R&D, and the countries' market efficiency rating from the Global Competitive Index. The indicators of the consequences of competitiveness include: the amount of dividends repatriated, the net inflows of foreign direct investment (FDI), the number of listed domestic companies, the listed companies' market capitalization, and the unemployment rate. To determine if U.S. MNCs are competitively disadvantaged compared to Japanese and British MNCs, I use a difference of means approach to investigate whether a change in competitiveness after 2009 can be attributable to a transition to a territorial taxation system. Furthermore, the difference of means approach compares the changes in the competitiveness of American firms under worldwide taxation to the changes in competitiveness of British and Japanese firms during their transitions to territoriality.

In addition to filling a research gap, the findings of this paper are applicable to the current legislative discussions taking place around overhauling the international tax codification. In November 2013, a proposal was set forth and deemed open for comment by the then Senator Baucus of Montana to the U.S. Senate Committee on Finance that recommended a divergence from current practices by requiring all foreign income to be taxed immediately or not at all (Committee, 2013). This would effectively

alter the United States' worldwide taxation system to either tax foreign subsidiaries as if they were foreign branches or adopt elements of a territorial tax basis.[3] Overhauling the United States' international tax policies has garnered support from private and public sector leaders alike. As early as 2005, the President's Advisory Panel on Federal Tax Reform supported measures of territoriality followed by similar sentiments of the co-chairs of the National Commission on Fiscal Responsibility and Reform (2005), the President's Export Council (2010), the President's Council of Advisors on Science and Technology (2011), and finally in 2011 with members of the President's Council on Jobs and Competitiveness ("Evolution of Territorial Tax Systems in the OECD," 2013). The lack of headway on this issue suggests the need for additional research on the benefits of a territorial tax system. Furthermore, using the transition of Great Britain and Japan in 2009 from a worldwide to territorial tax basis as a proxy for the change one would expect to see in the United States would be the first of its kind to approach this problem through a case study analysis.

The paper is organized as follows: Section II provides a brief overview of the principals of international taxation while developing the paper's hypothesis. Section III places the paper within a body of existing research. The paper's methodology is outlined in Section IV followed by Section V, which provides the results of the study. Finally, Section VI concludes the findings of the paper.

[3] The income of a business entity classified as a foreign branch is taxed currently. Unlike other classifications of foreign subsidiaries, foreign branches are not allowed to defer repatriation.

II. Background and Hypothesis

Two Systems of International Taxation: Worldwide and Territorial

Taxing foreign income adheres to two general principles. First, foreign income is taxed in the country in which it is earned. Second, each dollar of income is only taxed once. In a territorial system, foreign income is taxed once in accordance with the tax laws of the country in which the income was earned. For parents domiciled in a country with a territorial tax system, dividends received from a foreign subsidiary are not taxed by the parent's home country. For example, assume a territorial parent domiciled in Canada owns subsidiaries in Ireland and Brazil and each subsidiary earns income in their respective countries. The income earned in Ireland is taxed at Ireland's corporate tax rate (12.5%) and the income earned in Brazil is subjected to Brazil's tax rate (25%). Thus, the Canadian government under a territorial taxation system will not tax the foreign income earned by either subsidiary (Scholes, Wolfson, Erickson, Maydew, & Shevlin, 2009).

A worldwide system attempts essentially to tax all income of the multinational corporation (i.e. domestic income of the parent corporation and foreign income of the subsidiary) as if it were earned in the home country. Foreign income under a worldwide system is first taxed at the foreign tax rate and then as the income is transferred to the parent corporation, it is then subjected to the home country tax. Adhering to the two fundamental principles of taxation, double taxation is avoided by a system of foreign tax credits (FTCs). The amount of the FTC is equal to the foreign tax liability up to the U.S. tax liability. The FTCs then reduce the taxpayer's home country tax liability dollar-for-dollar. Under worldwide taxation, a MNC pays taxes on foreign income in

two phases. The first phase is levied by the foreign jurisdiction at the foreign tax rate. The second phase of taxation is paid to the home country and due to FTCs is taxed at a rate equal to the difference between the home country's tax rate and the foreign tax rate (Markle, 2011).

Unlike traditional systems of worldwide taxation, the U.S. incorporates elements of deferral into its international regulations. With the exception of foreign branches and Subpart F income, paying the second phase of taxation to the home country can be deferred. The ability to defer the U.S. tax liability on foreign income attempts to compensate for the shortcomings of the American taxation system, namely its high tax rate and its worldwide basis. The process of transferring foreign earnings to the parent corporation is called repatriation. Repatriation typically takes the form of dividends, which become subject to the home country tax or the second phase of worldwide taxation. For example, assume a worldwide parent domiciled in the United States owns subsidiaries in Ireland and Brazil; each subsidiary earns income in their respective countries. The income earned in Ireland is first taxed at Ireland's corporate tax rate (12.5%) and the income earned in Brazil is subject to Brazil's tax rate (25%). Assume the parent corporation immediately repatriates the foreign income earned in Ireland to the United States. The foreign income earned in Ireland then becomes taxable by the United States at a rate of 40%. Double taxation is averted by reducing the U.S, tax liability (taxed at 40%) by the foreign tax liability (taxed at 12.5%). Therefore, the U.S. tax liability is equal to taxing the Irish income at the rate equal to the difference between the U.S. tax rate (40%) and the Irish tax rate (12.5%). The earnings of the Brazilian subsidiary are considered deferred until the parent corporation elects to

repatriate the foreign income to the United States, at which point it would be subject to the U.S. tax rate.

Consider two identical multinational corporations, *T* and *W*, where *T* is domiciled in a territorial country and *W* is domiciled in a worldwide country. *T*'s tax rate is t_t and *W*'s tax rate is t_w. Both multinationals own a subsidiary in a country with a corporate tax rate equal to t_f and they each earn foreign income equal to *I*. *T*'s foreign income taxes on *I* would be $I*t_f$. Initially, *W* would pay foreign taxes to the foreign government equal to $I*t_f$ thus resulting in net after-tax income of $I_n=I-(I*t_f)$. If *W* forgoes reinvesting their foreign earnings, then I_n is repatriated to the parent and *I*, the pre-tax foreign income, is subject to t_w. In this scenario, *W*'s full tax bill is equal to $(I*r_w)-(I*r_f)$.[4]

Territorial taxation is currently considered the global norm. The United States is among the minority of nations with a worldwide system. The U.S. is the only G-8 country operating under a worldwide system and of the 34 member nations of the OECD, 28 implement a territorial system ("Evolution of Territorial Tax Systems in the OECD," 2013). Before 2009, the U.S. was flanked by the United Kingdom and Japan as the guardians of worldwide taxation; however, both countries in 2009 converted to a territorial system. After Japan's "economic vitalization," Mieko Nakabayashi, a former member of Japan's House of Representatives, made the astute comment, "With most of the world—Japan included—cutting corporate tax rates and employing territorial tax systems to remain competitive, the U.S. must surely know that its hesitancy to do these things is handing the advantage to its international competitors. They will suffer from the hesitancy while we and others outside the U.S. will benefit" (Galvin, 2013). Their

[4] Where $I*r_f$ is equal to the tax credit that reduces dollar-for-dollar *W*'s tax liability.

recent transition provides a pertinent case study to compare to the United States' situation. The swiftness of their transition provides a stark line of differentiation between the two taxation systems. Other recent transitions within the European Union are less relevant for the purposes of a case study due to the fact that these countries progressively adopted elements of territoriality by "build[ing] foreign dividend exemptions into bilateral tax treaties and subsequently adopt[ing] broad exemptions either for affiliates within the EU or all foreign affiliates" (Dittmer, 2012).

International Tax Structures' Effect on a Firm's Competitiveness

The common downfall of critics of worldwide taxation is failing to articulate the link between a corporation's competitiveness and their tax bill. The link consists of differing tax rates, value-added processing, trapped cash, and reduced tax revenue. The U.S. currently taxes domestic and foreign income at the highest corporate tax rate of 40%. This figure is significant when compared to countries such as Bermuda that has a corporate tax rate of 0% or the average rate of members of the OECD (25.32%) ("Corporate tax rates table," 2011). The discrepancy in rates constitutes the difference of over billions of dollars in annual taxes. Decreasing after-tax profit margins hinders U.S. MNCs' ability to offer competitive prices in the global marketplace. Furthermore, the large size and dramatic growth of cross-border capital flows highlights the impact taxes have on a corporation's competitiveness. Michael S. Knoll quantifies this assertion in *Business Taxes and International Competitiveness*: "In 1960, annual cross-border investment flows represented 1 percent of GDP. In 2006, it was 18 percent of GDP. By 2006, the aggregate ownership of foreign capital by U.S. investors and of U.S. capital by foreign investors totaled $26 trillion – about two years' GDP" (Knoll, 2008).

For this reason, tax planning is a fundamental element to business strategy and 63% of CEOs consider "the competitiveness of the tax regime when deciding where to operate" (Stamm, Weeghel, & Monfries, 2014).

The complexity of the worldwide codification discourages focusing on value-added processes. To cope with this disadvantage, U.S. domiciled corporations engage in aggressive tax avoidance as a mechanism to remain competitive. Hence, the low effective tax rates (ETR) of businesses such as Apple Inc. with an average ETR of 14% between 2007-2012 (Bostock, Ericson, Leonhardt, & Marsh, 2013). However for tax avoidance to be lucrative, a substantial amount of time and resources must be devoted to compliance—tax preparation expenses, labor, and administrative costs. Allocating resources to compliance appropriates resources from value-added processes that further the core competencies of the business. Therefore, operating under an unfavorable tax system such as the worldwide model stifles U.S. corporations' innovation. It is believed that decreased relative innovation severely inhibits the long-term competitiveness of U.S. MNCs.

The current U.S. system of worldwide taxation with deferral encourages MNCs to defer the tax liability associated with foreign-earned income by reinvesting foreign earnings abroad rather than engage in repatriation. The product of foregone repatriations is trapped cash (Hartzell, Titman, & Twite, 2005). Trapped cash contributes to the systematic handicapping of U.S. MNCs in comparison to their territorial competitors. Trapped cash presents three viable investment strategies: expand operational assets, seek returns from financial assets, or repatriate to the parent corporation (Sansing & De Waegenaere, 2006). To avoid incurring high repatriation taxes, foreign financial assets

are used to reach a favorable cash position; however, foreign investments pose the danger of becoming inefficient market solutions. Foreign acquisitions are an example of an inefficient investment decision because "U.S. MNCs that have high levels of cash trapped overseas in the form of both PRE [permanently reinvested earnings] and cash holdings…make less profitable cash acquisitions of foreign target firms than U.S. MNCs without trapped cash" (Edwards, Kravet, & Wilson, 2012). Foreign acquisitions tend to be overpriced, possess a lower average ROI, and can be the result of empire-building techniques. Edwards, Kravet, and Wilson warn of the possibility that foreign acquisitions paid in cash can have a negative net present value (NPV) due to rising agency costs. Worldwide taxation necessitates U.S. MNCs to adopt tax-motivated behavior that misappropriates foreign capital in suboptimal investments, thus competitively disadvantaging U.S. MNCs.

In addition to the inefficient investment of capital, trapped cash negatively impacts the national economy through the loss of U.S. jobs and tax revenue, which indirectly hampers the competitiveness of U.S. MNCs. Initially, these side effects seem to be the sole concern of the public sector, yet the public and private sector are closely intertwined around supporting American business. The projected deferred taxable income associated with trapped cash is approximately two trillion dollars (Welch & Baigorri, 2014). Although this sum would support public initiatives in addition to business policies, this translates into underfunded governmental agencies which oversee the legal protections of patent and intellectual property, ensure trade and monetary freedoms, promote technological innovations, and uphold labor standards. These are the qualities that foster and attract business to the United States. If the short-term effects of

these short falls are not causes of concern for U.S. MNCs, the long-term implications are detrimental considering cash abroad is projected to increase thus exacerbating budgetary gaps. In the end, these factors will impede U.S. MNCs ability to successfully conduct business thus negatively impacting future performance and earnings.

If the worldwide system seems to favor neither private nor public interest, why does the United States continue to operate under a worldwide basis? There is a sizable body of literature devoted to the debate advancing the merits and uncovering the faults of each system of international taxation, however this issue falls outside the scope of this paper. Proponents of the worldwide regime critique territoriality for incentivizing incorporation abroad and reducing tax revenue through a decreased tax basis.[5] Adoption of territoriality has been largely avoided due to the transition's complexity. Overhauling the American tax regulations requires significant investments in capital, time, and trial. America's lingering hesitancy to embrace elements of a territorial system highlights the importance of studying the transitions of the United Kingdom and Japan to territoriality. This paper seeks to further the research of the competitive benefits of transitioning to territorial taxation and the consequences of competitiveness.

Hypothesis

Based on the above discussion, I expect the competitiveness of British and Japanese firms to increase after they adopt a territorial tax regime. I further expect that this increase in competitiveness is greater than the change in competitiveness for U.S. firms over the same period. I measure competitiveness with ten variables that can be categorized into two baskets: 1) direct measures of competitiveness and 2) the

[5] See Maffini (2012) and Altshuler and Grubert (2002)

consequences of competitiveness. Each basket contains five variables. The ten measures of competitiveness studied are listed, categorically, below with a rationale for the inclusion of the variables in the model and the individual results I expect each variable to produce within the context of the study:

1. Direct Measures of Competitiveness

    a. Corporate compliance costs – Corporate compliance costs are measured in the unit of time, specifically the average hours demanded of a MNC to comply with a nation's tax regulations. This variable is denoted in tables as "Corporate Compliance Costs." Compliance costs directly correlate to a tax system's complexity; the higher the cost, the more complex a tax system is considered. Corporate compliance costs measure a form of competitiveness based on value-added processing. A complex taxation system with a high cost to comply motivates MNCs to rely on a competitiveness that depends upon the amount of money it can save on taxes instead of a competitiveness based on sustainable marginal productivity through value-added processes. With the chief aim of increasing the global competitiveness of its MNCs, I expect both British and Japanese compliance costs to decrease following their transitions to territoriality because exempting foreign income from taxes would result in compliance simplification. Further, as the United States continues to tax foreign income under its worldwide base, I expect the British and Japanese compliance costs to decrease in relation to the U.S.

    b. Corporate tax burden – The corporate tax burden is expressed as a percentage of each country's G.D.P, which is uniformly calculated in

American dollars. The total corporate tax burden is imposed by a national government and is equal to the total tax revenue collected. Thus, the study refers to the corporate tax burden as "Corporate Tax Revenue." The corporate tax revenue variable captures competitiveness through profitability. For a corporation to be more competitive than its competitors it must achieve a greater profitability. Profitability decreases for each dollar of taxes paid. Considering lower marginal tax rates are more strongly correlated to territorial tax regimes in relation to worldwide taxation, I predict a greater decrease in the corporate tax revenue variable for the U.K. and Japan after their transitions to territorial tax regimes in comparison to the change experienced in the U.S. (Maffini, 2010) .

c. Return on Assets (ROA) – This indicator of direct competitiveness is expressed as "ROA." ROA is a comprehensive measure of profitability. The previous variable, corporate tax revenue, more closely ties profitability to taxation, but the advantage of including ROA is that it more accurately captures the overall performance of a corporation.[6] I expect the decreased tax liability associated with territoriality to result in a greater increase in profitability, measured with the variable of ROA, for the U.K. and Japan. I expect the increased profitability of the U.K. and Japan to predominate any increased profitability that U.S. could experience from continuing with a worldwide tax regime.

[6] The ROA was calculated by averaging the ROAs of the top 50 companies in each respective country on the Forbes Global 2000 List.

d. Corporate R&D expenditures – This statistic aggregates the amount of R&D expenditures reported on the income statements of the publically traded corporations domiciled in a particular country. The variable is titled in tables as "Corporate R&D Expenditure." Corporate R&D expenditure captures a long-term form of competitiveness—innovation. Without continual innovation a sustainable competitive advantage cannot be maintained. James R. Hines Jr. in *No Place Like Home: Tax Incentive and the Location of R&D by American Multinationals* concludes, "R&D tax incentives are important to maintaining the U.S. competitive position in world markets" (Hines Jr., 1994). Thus, increased corporate R&D expenditures relates to increased competitiveness. Although I do not expect to find a sharp increase in corporate R&D expenditures in the U.K. and Japan following their transitions to territoriality, I do expect increased profitability to then be allocated or reinvested into additional R&D over time. I expect the changes in corporate R&D expenditure for the U.K. and Japan to be greater in comparison to the change of MNCs in the U.S.

e. Market efficiency rating - This variable is referred to as the "Market Efficiency Rating" in the paper's tables. The market efficiency rating is one of several components or "pillars" of the Global Competitive Index (GCI) conducted by the World Economic Forum. The GCI is a comprehensive statistic that takes into account macroeconomic, societal issues, and social factors when measuring competitiveness. However, the market efficiency rating hones in on the factors that are specific to private business enterprise.

Specifically, the market efficiency rating captures each country's market share—an important measure of competitiveness. The market efficiency rating measures both domestic and foreign market share.[7] Market share captures an important aspect of competitiveness because it is a metric to judge one's performance against competitors. A greater market share corresponds to a corporation's superior performance in relation to its competitors. Although I do not expect a significant increase in market share for the U.K. and Japan following their transitions to territorial tax regimes, I do expect the market efficiency variable to experience a greater increase following transition in Britain and Japan compared to the U.S. due to the fact that I expect their territorial transitions to results in greater overall competitiveness.

2. Consequences of Competitiveness

    a. Total amount of dividends repatriated – This variable, referred in the tables as "Dividends Repatriated," is calculated by adopting the design of Alexander Lehmann and Ashoka Mody, co-authors of the paper titled, *International Dividend Repatriations*, who faced a situation in which: "Only total FDI income and its component reinvested earnings were available. As the income on intra-company debt is normally very small (less than 2 percent of total income), dividends have been approximated as the residual between income and reinvestment" (Lehmann & Mody, 2004). It is assumed

[7] Domestic market share is the sum of gross domestic product plus value of imports of goods and services, minus value of exports of goods and services. Foreign market share is equal to the value of a nation's exports of goods and services. Market share is included within the market efficiency rating instead of as a standalone variable due to the difficulty in measuring market share and finding the corresponding data.

that the proportion of overseas affiliates' net income that is not repatriated is reinvested earnings. Reinvested earnings abroad results in trapped cash. As previously mentioned, trapped cash decreases competitiveness through inefficient allocations of resources. The more competitive a corporation, the less trapped cash they possess which translates to a greater amount of dividends repatriated. Thus, the amount of dividends repatriated is a consequence of competitiveness. As I predict the British and Japanese firms' competitiveness to increase following transition and for this increase to be greater than the change in U.S. firms' competitiveness, I thus expect a similar result with the variable measuring total dividend repatriations.

b. Foreign direct investment – Foreign direct investment, referred to as "FDI," is expressed as net of inflows. The FDI indicator is categorized as a consequence of competitiveness due to the fact that this amount is directly tied to the overall competitiveness of a nation's economy. For example, the net inflows of FDI increase with favorable investment opportunities, a supportive economic environment, and a more competitive market situation. I expect the data to return a positive change in FDI for the U.K. and Japan following their transitions to territoriality and for the positive change to be greater than the change experienced in the U.S. for the same time period.

c. Number of listed domestic companies – This variable, referred to as "Domiciled Corporations," measures the number of publically traded companies domiciled in a nation. Investment companies, mutual funds, and other collective investment vehicles are not included in this statistic. This

indicator of the consequences of competitiveness tests for corporate inversions.[8] Inversions are a product of an unfavorable business environment; consequently corporations employ inversion tactics to remain competitive and to seek greater returns abroad. Inversions are a prevalent form of tax avoidance in all developed nations including the United States, the United Kingdom, and Japan. The number of nationally domiciled corporations is indicative of a more competitive market for business. As such, I expect a greater increase in the number of domiciled corporations in the U.K. and Japan after they transitioned to a territorial tax regime. Furthermore, I expect this increase to be greater than the change in the number of domiciled corporations in the U.S. for this same time period.

d. Market Capitalization – The variable titled, "Market Capitalization," quantifies the dollar value of all listed companies' outstanding stock in a particular country. Like the domiciled corporations variable, this statistic does not account for the market capitalization of investment companies, mutual funds, and other collective investment vehicles. Market capitalization captures the worth or future profitability of a corporation. If, for example, a favorable tax policy were passed that increases the competitiveness of MNCs then one would expect the corporations' aggregate profitability to increase thus reflecting in a positive or increased market capitalization. This is exactly the chain of events I predict to occur as a result of Britain and Japan adopting a territorial tax regime. Additionally, I expect the increased

[8] A corporate inversion is transplanting the home corporation from a high-tax nation to a low-tax nation. An inversion changes the country in which a business is domiciled and incorporated.

market capitalization in the U.K. and Japan, ascribable to their transitions to territoriality, to outweigh the change in market capitalization realized in the U.S. for the same time period.

e. Unemployment – This variable is represented in tables as the "Unemployment Rate." The unemployment rate is inversely related to a favorable consequence of competitiveness. For example, as repatriations increase and capital is more readily accessible to corporations their investments increase in effectiveness but also in scope. Corporate expansion demands additional labor and thus the unemployment rate would decrease as competitiveness increases. I expect the variable of unemployment to move in conjunction with the other indicators of the consequences of competitiveness and in particular the variable of dividends repatriated, which is to increase following the British and Japanese transitions to territoriality and for this increase to be greater than the change in U.S. firms' competitiveness

The difference of means statistically analyzes the varying degrees of competitiveness and compares the means of each measure of competitiveness for the United Kingdom and Japan (represented with μ_1) before and after their 2009 transitions. The difference in means statistic measuring the effect of adopting a territorial taxation system is compared to a similar statistic for the United States (μ_2). Britain and Japan will have successfully increased their firms' overall competitiveness if the difference between the average in the period before transition ($\mu_{1\ before}$) and the period after transition ($\mu_{1\ after}$) is greater than the difference witnessed in the United States (μ_2). The thesis restated in statistical terms is thus:

Alternative: $\mu_{1\ after} - \mu_{1\ before} \geq \mu_{2\ after} - \mu_{2\ before}$ [*]

To ensure accurate conclusions can be deduced, a two-test approach is implemented. In addition to testing the direct measures of competitiveness (compliance costs, corporate tax burdens, ROA, expenditures on corporate R&D, and the market efficiency rating), the research model includes indicators that measure the consequences of competitiveness. These indicators include: amount of dividends repatriated, amount of FDI, number of listed domestic companies, market capitalization, and unemployment rate. With this approach, one would expect to witness the mirroring effect insofar that the data would demonstrate increased competitiveness in terms of direct measurements and its consequences. Ultimately, the expectation is that these measurements will illustrate that firms are more competitive operating under a territorial tax system compared to a worldwide tax regime. If the hypothesis proves to be correct, then this research would provide evidence for the United States to adopt a territorial system of international taxation to preserve U.S. MNCs' competitiveness.

[*] For measures that represent a competitive disadvantage (e.g. corporate tax revenue and corporate compliance costs), one expects the inverse to be true. In that case, the null hypothesis is equal to: $\mu_{1\ after} - \mu_{1\ before} \leq \mu_{2\ after} - \mu_{2\ before}$.

III. Literature Review

Comparing the advantages and disadvantages of the worldwide system against those associated with territoriality is not a novel research concept. Mihir A. Desai, C. Fritz Foley, and James R. Hines Jr. are considered experts on questions of the differing tax bases. Much of their research has provided concrete evidence supporting a transition to territoriality. For example, in *Repatriation Taxes and Dividend Distortions* they conclude that one effect of an American transition to territoriality would result in a 12.8% aggregate increase of dividend repatriations to parent corporations domiciled in the U.S. (Desai, Foley, & Hines Jr., 2001). Similar to their colleagues, Desai et al. fail to answer the long-term question of MNCs' competitiveness.

Kevin Markle provides a counterpoint to the research of Desai et al. by demonstrating that territorial subsidiaries shift more income than worldwide subsidiaries (Markle, 2011). Income shifting is closely associated with tax avoidance thus outlining a superior tax base for a worldwide system. Markle investigates which system more effectively raises tax revenue, but he provides the inspiration for my work. As he analyzes the implications for further research from his findings in *A Comparison of the Tax-motivated Income Shifting of Multinationals in Territorial and Worldwide Countries*, he writes: "Because Japan and the UK changed from worldwide to territorial systems in 2009, the possibility may exist to test for differences in the shifting of their multinationals before and after the change in an event study framework. Unfortunately, useful data for such a study are not yet available…As such, it is expected that the behavioral responses of firms will be delayed until there is a stronger sense that the transitions are complete" (Markle, 2011). The useful data he refers to is now available,

five years following the transition. My thesis applies Markle's methodology and Michael Knoll's rudimental research that identifies the relationship between corporate income taxes and global competitiveness in *The Corporate Income Tax and the Competitiveness of U.S. Industries.*

IV. Methodology

The paper is a comparative case study analysis that investigates whether U.S. MNCs are systematically disadvantaged due to the worldwide system of international taxation. The United States, the United Kingdom, and Japan constitute the entire case study. In 2009, the United Kingdom and Japan both underwent a transition from a worldwide tax basis to a territorial tax regime. Statistical analysis in the form of the difference of means compares tests of overall competitiveness in the three years prior to and following the 2009 transition. These figures then are matched against similar measurements for the United States. This dual comparison provides evidence to determine whether the transitions to territoriality increased the competitive position of British and Japanese MNCs while investigating whether U.S. MNCs' are competitively disadvantaged compared to their territorial counterparts.

The variables that test for competitive significance are based on the motivations of the United Kingdom and Japan to adopt a territorial tax system. Although their principal rationale for the transition is very similar, they each sought to change differing marks of competitiveness. In the years leading up to 2009, the United Kingdom witnessed an exodus of corporations through inversion transactions. Her Majesty's Treasury in 2007 outlined that their primary objective through the transition was to "improve the competitiveness and attractiveness of the U.K. as a location for multinational business" (*Taxation of companies' foreign profits: discussion document*, 2007). Furthermore, they specifically identified the need to address rising compliance costs. In Section 3, Subsection 4 it reads: "Multinational/large business has told the Government that the inherent complexity of their group structures means that the

application of the current credit regime to them is administratively complex" (*Taxation of companies' foreign profits: discussion document*, 2007). Therefore, two dependent variables of competitiveness are the number of domiciled corporations and the amount of compliance costs (measured in time).

Japan's transition to territoriality reveals three additional measurements of competitiveness. Although the United Kingdom's concerns were also the concerns of the Japanese, Japan was largely driven by macroeconomic issues. Before 2009, Japan retained the highest corporate tax rate, which was only 0.69% higher than the United States' ("Corporate tax rates table," 2011). Due to their high corporate tax rate, Japan was experiencing the lockout effect.[9] The Japanese government responded in 2008 to vouch to "improve the circumstances to contribute to the flow into Japan of the profits acquired by Japanese enterprises in the overseas markets by utilizing their strength in order to prevent the profits from being kept overseas excessively and not to let the research and development and employment, etc. in Japan forming the source of competitiveness flow out overseas" (Miyatake, 2009).

The corporate tax burden, R&D expenditures, and unemployment rate are three pertinent variables that can be extracted from Japan's motivation to shift to territoriality. The corporate tax burden is an important direct measure of competitiveness because at its most basic the annual tax bill is a significant expenditure. Although this indicator is a proxy for each of the country's corporate tax rates, it more precisely captures the effective tax rate and collections. In accordance with Maffini's findings, one would

[9] The lockout effect is the ability to defer paying home country taxes on some foreign earned income until such earnings are repatriated. Deferral creates a disincentive for MNC to repatriate foreign earnings from a low-tax jurisdiction to a high-tax home country. Furthermore, tax planning through income shifting allows MNCs to shift foreign earnings from high-tax foreign jurisdictions to low-tax foreign jurisdictions, thus exacerbating the lockout effect.

expect the average corporate tax burden to be lower for the United Kingdom and Japan due to their adoptions of territorial taxation.[10] R&D expenditures are an additional measure of long-term competitiveness. Government officials largely incentivize domestic R&D through favorable tax treatment to spur innovation and create jobs. The interdependent relationship between taxes and R&D is best described by Bailey and Lawrence in their 1992 study titled, *Tax Incentives for R&D: What Do the Data Tell Us?,* in which they report that the elasticity of R&D spending with respect to its after-tax cost is approximately one (Bailey & Lawrence, 1992). Lastly, the unemployment rate is inversely related to the competitiveness of a nation's firms. As trapped cash increases and inversions become more frequent the demand for labor decreases and thus the unemployment rate increases. Due to the fact that the United Kingdom and Japan sought to specifically target reducing corporate inversions and prevent losing jobs to overseas markets, I expect a larger decrease in unemployment in the U.K. and Japan following their transitions to territoriality than the change experienced in the U.S. during the same time period.

Additional variables that were incorporated in the model include: ROA, market efficiency rating, amount of dividends repatriated, amount of FDI, and the market capitalization of listed companies. In total, ten variables were investigated for each of the three countries across the seven years (2006-2012); five of which were direct measurements of competitiveness and five measured the consequences of competitiveness. Both direct measures of competitiveness and the consequences of competitiveness are studied for two reasons. Firstly, this approach ensures accurate

[10] Maffini (2012) successfully correlates a lower marginal effective tax rate (METR) to territorial regimes compared to worldwide systems.

conclusions because it acts as a two-test design. One would expect to witness a mirroring between both the variables that measure competitiveness and its consequences. For example, as measures of direct competitiveness increase then one expects a proportional favorable increase in the consequences of competitiveness. The two-test design provides the advantage of deducing whether a system-wide change in competitiveness occurred as the result of differing tax regimes. Secondly, studying both competitiveness and its consequences provides additional information on the casual relationship between economic metrics, competitiveness, and varying tax policies.

To ensure comparability across the three countries, the variables are deflated by each nation's GDP. Corporate compliance costs are deflated by each nation's total assets to allow for greater comparability across the three countries. Unemployment rate, average ROA, and the market efficiency rating were not deflated by GDP due to the fact that these variables are already expressed as a ratio. Sensitivity analysis is also conducted on the data to control for the effect that the 2009 Financial Crisis could have on the data. Sensitivity analysis is conducted by omitting the data pertaining to 2009 for all variables. While ensuring the crisis is not accountable for the entire regime change for the period prior to the 2009 transition, this also controls for the year of the conversion in which the U.K. and Japan were partially operating under both a worldwide and territorial system of taxation. Furthermore, this simplification provides three data points on either side of the transition for analysis.

The data for the empirical model comes from a variety of sources. These sources include: the World Bank, the OECD, U.S. Bureau of Economic Analysis, Mergent Online, PwC Paying Taxes Reports, the World Economic Forum's Global

Competitiveness Reports, the British Office of National Statistics, and the Japanese Research Institute of Economy, Trade, and Industry.

Statistical Models

Three models are used to analyze the differences of means between (1) the territorial nations and the United States, (2) the United Kingdom and the United States, and (3) Japan and the United States. The three models, respectfully, are:

(1) $DependantVar = ß_0 + ß_1 BA\_Dummy + ß_2 Country\_Dummy + ß_3 BA\_Dummy * Country\_Dummy + e_t$

(2) $DependantVar = ß_0 + ß_1 BA\_Dummy + ß_2 UKUS\_Dummy + ß_3 BA\_Dummy * UKUS\_Dummy + e_t$

(3) $DependantVar = ß_0 + ß_1 BA\_Dummy + ß_2 JUS\_Dummy + ß_3 BA\_Dummy * JUS\_Dummy + e_t$

where:

DependantVar = any of the ten dependent variables tested which include the five measures of direct competitiveness (*Corporate Compliance Costs, Corporate Tax Revenue, ROA, Corporate R&D Expenditures, and Market Efficiency Rating*) and the five measures of the consequences of competitiveness (*Dividends Repatriated, FDI, Domiciled Corporations, Market Capitalization, and Unemployment Rate*);

$ß_0$ = intercept term;

BA_Dummy = before and after transition dummy is defined as {0, Period before 2009} and {1, Period after 2009};

Country_Dummy = delineates between the territorial transitionaries and the American worldwide system defined as {0, Japan and the UK} and {1, USA};

UKUS_Dummy = defined as {0, UK} and {1, USA};

JUS_Dummy = defined as {0, Japan} and {1, USA};

*BA_Dummy*Country_Dummy* = interaction term referred to as *JUKxUS_Interaction;*

*BA_Dummy*UKUS_Dummy* = interaction term referred to as *UKxUS_Interaction;*

*BA_Dummy*JUS_Dummy* = interaction term referred to as *JxUS_Interaction;* and

e_t = error term.

For the purposes of this paper, the three interaction terms constitute the focus of my research. In each of the three models, the interaction terms test the paper's hypotheses. Significant interaction terms at the 90% confidence interval translate into a statistically significant change in competitiveness following the 2009 transitions to territoriality and that this change is greater in amplitude than the change experienced in the United States for the same dependent variable of competitiveness for the same time period.

V. Results

This section describes the results and findings of the research and is organized into three subsections. The comparison between the two territorial countries and the United States is analyzed first followed by an individual assessment of each of the territorial countries (the UK and Japan, respectfully) compared against statistics for the U.S. The data is organized into three tables. Table 1 contains the raw data for the three countries for each indicator of direct competitiveness between the years of 2006-2012. Table 2 contains the raw data for each of the five measures of the consequences of competitiveness. Table 2 is organized by country and contains data for the years between 2006-2012. Table 1 and Table 2 provide the data to produce the difference of means statistics found in Table 3 and the multivariate results in Table 4. Table 3 contains the means for each dependant variable for the two periods (before and after the 2009 transition to territoriality) for each of the three countries, the difference in means between the two time periods for each country, and a comparison of the difference in means statistics for each of the territorial nations compared to the U.S. Table 4 presents the descriptive statistics for each of the main variables. Most importantly, Table 4 provides the p-value for each model's interaction term. The p-value tests whether the recorded change in the dependant variable between the time period before transition and after transition for the U.K. and Japan is significantly different than the recorded change in the U.S. The interaction term is considered to be significant at the 90% confidence interval due to the fact that this is a one-sided test. To be significant at the 90% confidence interval requires a p-value less than 0.010; this assures that if the tests were reexamined the research would have at least a 90% chance of returning the same

recorded change. Once the significance test is passed, the coefficient ($ß_3$ in the model and title *B* in Table 4) is used to predict the change in the dependent variable across the listed countries and time period. The bulk of this paper's conclusion references the descriptive statistics for the interaction terms (*JUKxUS_Interaction, UKxUS_Interaction,* and *JxUS_Interaction)* in Table 4.

Comparison: Territorial Nations and the U.S.

Table 4 shows that of the ten indicators of competitiveness two are significant at a 90% confidence interval across the countries and the time periods. The interaction term, *JUKxUS_Interaction,* is significant at 0.083 for the dependent variable of unemployment and at 0.019 for the market efficiency rating. The remaining eight indicators are highly insignificant which include: corporate compliance costs, corporate tax revenue, ROA, corporate R&D expenditure, dividends repatriated, FDI, domiciled corporations, and market capitalization. An insignificant interaction term for these eight measures translates into a situation in which although a change was witnessed in the territorial nations after their tax regime transition, the recorded change did not significantly differ from the change witnessed in the U.S. Thus, insignificant interaction terms suggest the tax regime change having no noticeable or significant change in the country's competitiveness.

Across the three countries, the mean unemployment rate increased and the mean market efficiency rating decreased following the 2009 transition. Initially this would appear to suggest that territorial taxation reduced the competitiveness of British and Japanese firms, however the U.S. witness a similar, more severe reduction in overall competitiveness. For the time period between 2010-2012, the United States experienced

a 2.3% higher increase in the unemployment rate and a 0.387 larger decrease in the market efficiency rating compared to the territorial nations. Whether individually or jointly compared to the United States, the interaction for each of these dependent variables is significant. Thus, the data indicates that adopting elements of territoriality buffered a trend in increased unemployment for Britain and Japan.

In respect to the measures of unemployment and the market efficiency rating, the United States is competitively disadvantaged to a system of territoriality. These results raise two concerns. The first concern is the tenuous link between the causation of taxation and these two dependant variables. Unemployment is a result of a myriad of factors in addition to the country's taxation system. The market efficiency rating was originally included in the model to represent the competitive measure of market share; however in addition to the market share, it captures a variety of enterprise-related measures. Because these are the only two measures of significance, it cannot be concluded with certainty that the worldwide system of taxation competitively disadvantages the United States. Furthermore the significance of the unemployment rate and the market efficiency rating variables relies on the assumption that there was a global trend of decreasing competitiveness overall, but this cannot accurately be presumed when only three countries were investigated.

Comparison: United Kingdom and the U.S.

Although the results of the regressions that divide the data by taxation regime (territorial transitionaries and the American worldwide system) is relatively inconclusive, insights can be garnered by analyzing on an individual basis. There is not one single model of territoriality; each is customized to the needs of a nation. Therefore,

the American worldwide system is independently compared to Britain and Japan's systems of territoriality.

The interaction term, *UKxUS_Interaction*, is the focus of the study to determine the effect the 2009 transition to territoriality had on Britain's overall competitiveness. In addition to the unemployment rate, the indicator of dividends repatriated is significant. For the discussion on the significance of the unemployment rate please see the previous section. The remaining variable with significant results, dividends repatriated, suggests that the U.S. experienced a decrease in competitiveness in relation to Britain's transition to a territorial taxation system. Table 4 shows the interaction term with the dependant variable of dividends repatriated has p-value equal to a value less than 0.001.

When dividends repatriated is the dependant variable, the coefficient for the interaction term, *UKxUS_Interaction*, is negative and significant. This result affirms that dividend repatriations in the U.K. increased more during the time period than the United States' dividend repatriations. Table 4 suggests that when compared against the United States, Her Majesty's Treasury collected 1.5% more dividends than the U.S. in the three years following its adoption of territoriality in 2009. Though this figure appears inconsequential, one must consider that the figure is expressed as a percentage of GDP. If the U.K.'s average GDP is approximated as $2.5 trillion, this result translates into an additional $37.5 billion of annual taxable income from dividend repatriations.[11] Furthermore, this result supports the two-test theory in that direct measures of competitiveness are reinforced by indicators of the consequences of competitiveness. Specifically, an increased repatriation rate translates into a more

[11] $2.5 trillion * 0.015 = $37.5 billion

efficient allocation of resources and investments, which then positively stimulates the economy and ultimately trickles down to the labor force with increased employment.

The implications of a more competitive United Kingdom operating under territoriality are counterbalanced by the remaining insignificant dependent variables. The other eight measures have interaction terms with p-values greater than 0.010, which suggests that the majority of the measures of competitiveness and its consequences have changes that are no greater or less than the change experienced in the U.S. Thus, these eight insignificant indicators suggest no noticeable measure of the change in competitiveness was recorded for the U.K. in relation to the U.S. following its transition.

Comparison: Japan and the U.S.

Referring to Table 4, it can be seen that three interaction terms are significant at a 90% confidence interval. The unemployment rate and the market efficiency rating have already been discussed in-depth under the section titled, Comparison: Territorial Nations and the U.S. The one remaining significant interaction term corresponds to the dependant variable of corporate R&D expenditure (p-value equal to 0.056). Japan and the United States experienced a decrease in corporate R&D expenditures between the time period before and after the 2009 transition. This reduction could be partially due to global economic considerations such as the 2009 Financial Crisis, but the United States did not witness as steep a reduction as Japan. Thus for the years following 2009, the United States spent 0.1% more on corporate R&D than Japan. Increased R&D expenditures correlate to increased competitiveness, thus posing a point that disproves the paper's hypothesis.

Further disproving the paper's hypothesis, the interaction term for the variables of corporate compliance costs, corporate tax revenue, ROA, dividends repatriated, FDI, domiciled corporations, and market capitalization is insignificant. Each insignificant variable indicates that the form of competitiveness it measured did not show a noticeable difference to the change in the same variable for the United States.

VI. Conclusions

This paper investigates whether the United States' worldwide system of taxation systematically disadvantages its multinational corporations compared to its territorial counterparts. The work employs ten indicators of competitiveness that include: corporate compliance costs, corporate tax revenue, ROA, corporate R&D expenditures, the market efficiency rating, amount of dividends repatriated, FDI, the number of domiciled corporations, the market capitalization, the number of domiciled corporations, and the unemployment rate. This data is collected for the U.K. and Japan who both transitioned to a territorial system of taxation in 2009. This data is then compared against similar measures for the United States. Through a difference of means approach, the null hypothesis cannot be rejected thus it cannot be definitively proven that the worldwide system of taxation competitively disadvantages U.S. MNCs. Ultimately the data does not suggest that the United Kingdom and Japan are overall more or less competitive due to territorial taxation; however, there is not an overwhelming amount of data pointing to the contrary. One takeaway from the inconclusive results is the need for additional data, which can only be remedied with time. It is possible that their transitions to territoriality are still overcoming short-term obstacles to reap long-term benefits. Furthermore, it could be pertinent to investigate the success of the British and Japanese transitions to territoriality when compared against long-term practitioners of territoriality to uncover what policies specifically increased their competitiveness.

Bibliography

Bailey, M. N., & Lawrence, R. Z. (1992). *Tax Incentives for R&D: What Do the Data Tell Us?* Washington, DC.

Bostock, M., Ericson, M., Leonhardt, D., & Marsh, B. (2013). Across U.S. Companies, Tax Rates Vary Greatly - Interactive Feature - NYTimes.com. Retrieved November 09, 2014, from http://www.nytimes.com/interactive/2013/05/25/sunday-review/corporate-taxes.html

Committee, U. S. S. (2013). Summary of Staff Discussion Draft : International Business Tax Reform Chairman Max Baucus, 6. Retrieved from http://www.finance.senate.gov/imo/media/doc/Chairman's Staff International Discussion Draft One Pager.pdf

Corporate tax rates table. (2011). Retrieved from http://www.kpmg.com/global/en/services/tax/tax-tools-and-resources/pages/corporate-tax-rates-table.aspx

Desai, M. A., Foley, C. F., & Hines Jr., J. R. (2001). Repatriation taxes and dividend distortions. *National Tax Journal*, *LIV*(4), 829–851. Retrieved from http://www.nber.org/papers/w8507

Dittmer, P. (2012). A Global Perspective on Territorial Taxation. *Tax Foundation*.

Edwards, A., Kravet, T., & Wilson, R. (2012). Permanently Reinvested Earnings and the Profitability of Foreign Cash Acquisitions. Retrieved September 16, 2014, from https://tippie.uiowa.edu/accounting/phd/publications/wilson_permanently reinvested earnings.pdf

Evolution of Territorial Tax Systems in the OECD. (2013). Retrieved May 05, 2014, from http://www.techceocouncil.org/clientuploads/reports/Report on Territorial Tax Systems_20130402b.pdf

Galvin, W. J. (2013). How President Obama Can Use The G-20 Stage To Advance Economic Growth. Retrieved May 17, 2014, from http://www.forbes.com/sites/realspin/2013/09/03/how-president-obama-can-use-the-g-20-stage-to-advance-economic-growth/

Guglielmo, C. (2013). Apple's Cook on Taxes, Being an American Innovator: Transcript of Senate Testimony - Forbes. Retrieved May 05, 2014, from http://www.forbes.com/sites/connieguglielmo/2013/05/23/apples-cook-on-taxes-being-an-american-innovator-transcript-of-senate-testimony/2/

Hartzell, J. C., Titman, S., & Twite, G. J. (2005). Why do Firms Hold So Much Cash? A Tax-based Explanation. *SSRN Electronic Journal*. doi:10.2139/ssrn.654881

Hines Jr., J. R. (1994). *No Place Like Home: Tax Incentives and the Location of R&D* (No. 4574). Cambridge.

Knoll, M. S. (2008). Business Taxes and International Competitiveness, (May).

Lehmann, A., & Mody, A. (2004). International Dividend Repatriations. Retrieved November 11, 2014, from https://www.imf.org/external/pubs/ft/wp/2004/wp0405.pdf

Maffini, G. (2010). *Competitiveness of Multinationals : A Firm-level Analysis of Tax Burdens Territoriality , Worldwide Principle , and Competitiveness of Multinationals : A Firm-level Analysis of Tax Burdens* (p. 56). Oxford, United Kingdom.

Markle, K. S. (2011). A Comparison of the Tax-Motivated Income Shifting of Multinationals in Territorial and Worldwide Countries. doi:10.2139/ssrn.1764031

Miyatake, T. (2009). Japan's Foreign Subsidiaries' Dividends Exclusion. In *Sho Sato Conference on Tax Law* (pp. 1–16). University of California, Berkley. Retrieved from https://www.law.berkeley.edu/files/sho_sato_tax_conf_web_paper--miyatake.pdf

Sansing, R. C., & De Waegenaere, A. (2006). Taxation of International Investment and Accounting Valuation, 37.

Scheyder, E. (2013). Honeywell CEO urges sharply lower U.S. corporate tax rate | Reuters. Retrieved May 05, 2014, from http://www.reuters.com/article/2013/11/21/us-honeywell-cote-idUSBRE9AK1AT20131121

Scholes, M. S., Wolfson, M. A., Erickson, M., Maydew, E. L., & Shevlin, T. (2009). *Taxes and Business Strategy* (4th ed., pp. 325–375). Upper Saddle River, New Jersey: Pearson Education, Inc.

Stamm, R., Weeghel, S. van, & Monfries, M. (2014). *Building Trust and Growth*. Retrieved from https://www.pwc.com/taxceosurvey

Taxation of companies' foreign profits: discussion document. (2007). London. Retrieved from http://www.treasurers.org/node/3015

Welch, D., & Baigorri, M. (2014). Offshore Cash of $2 Trillion Sparks Hunt for Tax-Friendly Deals. Retrieved November 24, 2014, from http://www.bloomberg.com/news/2014-06-16/offshore-cash-of-2-trillion-sparks-hunt-for-tax-friendly-deals.html

Table 1: Indicators of Competitiveness, by Country

	Corporate Compliance Costs			Corporate Tax Revenue			Unemployment Rate			ROA			Corporate R&D Expenditure		
Year	Japan	UK	US	Japan	UK	US	Japan	UK	US	Japan	UK	US	Japan	UK	US
2006	2.7174%	0.4230%	1.3549%	0.5566%	2.1043%	3.2773%	4.1%	5.5%	4.7%	3.1260%	6.4842%	6.6566%	2.63%	1.08%	1.86%
2007	2.4927%	0.2288%	1.1437%	0.5566%	1.6695%	2.9048%	3.9%	5.4%	4.7%	3.2400%	7.4512%	5.9879%	2.70%	1.09%	1.86%
2008	2.5247%	0.2352%	0.5986%	0.5566%	1.9137%	1.9090%	4.0%	5.4%	5.9%	3.3743%	5.0428%	5.2702%	2.72%	1.09%	1.97%
2009	2.2730%	0.2616%	0.9771%	0.5566%	1.7515%	1.7056%	5.0%	7.8%	9.3%	1.0080%	4.7358%	7.0442%	2.54%	1.10%	1.96%
2010	3.0866%	0.3047%	0.7597%	0.2797%	1.9499%	2.3368%	5.0%	7.8%	9.7%	2.1580%	6.1368%	7.4366%	2.49%	1.08%	1.87%
2011	1.6554%	0.2721%	0.6750%	0.2702%	1.7478%	2.2647%	4.5%	7.9%	9.0%	2.3774%	6.4590%	7.4570%	2.60%	1.13%	1.89%
2012	1.6554%	0.3110%	0.5932%	0.2739%	1.7968%	2.5884%	4.3%	7.9%	8.1%	1.7762%	4.6364%	5.9990%	2.57%	1.10%	1.95%

Table 2: Indicators of the Consequences of Competitiveness, by Country

	Dividends Repatriated			FDI			Domiciled Corporations			Market Capitalization			Market Efficiency Rating		
Year	Japan	UK	US	Japan	UK	US	Japan	UK	US	Japan	UK	US	Japan	UK	US
2006	0.7161%	2.1773%	0.9249%	1.3073%	-2.7586%	0.0128%	0.0772%	0.1173%	0.0370%	108%	153%	140%	5.2	5.6	5.7
2007	0.7795%	1.9256%	1.1101%	1.1778%	4.4107%	1.3320%	0.0882%	0.0906%	0.0354%	102%	135%	138%	5.22	5.3	5.32
2008	0.5240%	2.2001%	1.3684%	2.1914%	2.5910%	0.1290%	0.0680%	0.0961%	0.0381%	66%	69%	80%	5.1	5.1	5.30
2009	0.6184%	3.6866%	1.0473%	1.2470%	-1.3614%	1.1093%	0.0637%	0.0987%	0.0305%	67%	127%	105%	5.1	5	5.1
2010	0.6050%	3.4946%	1.0179%	1.0660%	-1.0126%	0.6366%	0.0647%	0.0896%	0.0286%	75%	135%	115%	5.1	5	4.8
2011	0.7632%	3.5207%	0.9932%	1.8713%	0.7262%	1.1509%	0.0671%	0.0813%	0.0269%	60%	118%	101%	5	5	4.8
2012	1.0366%	3.6565%	1.1518%	2.0313%	9.0130%	1.3659%	0.0584%	0.0885%	0.0253%	62%	123%	115%	5	5.1	4.9

Table 3: Difference of Means for the Main Variables, by Countr..

(i) u_1 represents the mean of the territorial nations of Japan and the United Kingdom
(ii) u_2 represents the worldwide mean of the United States
(iii) u_b represents the mean of the dependent variable between the years of 2006-2008, pre-transition
(iv) u_a represents the mean of the dependent variable between the years of 20010-2012, post-transition

		Japan (u_1)				UK (u_1)				US (u_2)		
		μ_b	μ_a	$\mu_a-\mu_b$	$(\mu_{1a}-\mu_{1b})-(\mu_{2a}-\mu_{2b})$	μ_b	μ_a	$\mu_a-\mu_b$	$(\mu_{1a}-\mu_{1b})-(\mu_{2a}-\mu_{2b})$	μ_b	μ_a	$\mu_a-\mu_b$
Competitiveness	Corporate Compliance Costs	2.58%	2.13%	-0.4458%	-0.0089%	0.30%	0.30%	0.0003%	0.357%	1.03%	0.68%	-0.3565%
	Corporate Tax Revenue	0.56%	0.27%	-0.2820%	-0.229%	1.86%	1.83%	-0.0282%	0.024%	2.45%	2.40%	-0.0525%
	ROA	2.69%	2.10%	-0.5832%	-1.308%	5.93%	5.74%	-0.1844%	-0.909%	6.24%	6.96%	0.7245%
	Corporate R&D Expenditure	2.65%	2.55%	-0.0942%	-0.085%	1.09%	1.10%	0.0133%	0.022%	1.91%	1.90%	-0.0092%
	Market Efficiency Rating	5.16	5.03	-0.12	0.40	5.25	5.03	-0.22	0.30	5.36	4.83	-0.52
Consequences	Dividends Repatriated	0.66%	0.80%	0.1421%	0.200%	2.50%	3.56%	1.0599%	1.118%	1.11%	1.05%	-0.0584%
	FDI	1.48%	1.66%	0.1754%	-0.230%	0.72%	2.91%	2.1884%	1.783%	0.65%	1.05%	0.4054%
	Domiciled Corporations	0.07%	0.06%	-0.0109%	-0.003%	0.10%	0.09%	-0.0142%	-0.006%	0.04%	0.03%	-0.0084%
	Market Capitalization	85.75%	65.67%	-20.0833%	-14.667%	121.00%	125.33%	4.3333%	9.750%	115.75%	110.33%	-5.4167%
	Unemployment Rate	4.25%	4.60%	0.3500%	-2.433%	6.03%	7.87%	1.8417%	-0.942%	6.15%	8.93%	2.7833%

Table 4: Descriptive Statistics of the Main Variables

		Japan & UK								
		BA_Dummy			Country_Dummy			JUKxUS_Interation		
		B	Std. Error	Sig.	B	Std. Error	Sig.	B	Std. Error	Sig.
Competitiveness	Corporate Compliance Costs	-0.002	0.006	0.711	-0.004	0.007	0.584	-0.001	0.010	0.898
	Corporate Tax Revenue	-0.002	0.004	0.688	0.015	0.005	0.013	-0.001	0.007	0.865
	ROA	-0.009	0.013	0.507	0.012	0.016	0.458	0.002	0.022	0.928
	Corporate R&D Expenditure	-0.001	0.004	0.892	0.000	0.005	0.982	0.001	0.007	0.930
	Market Efficiency Rating	-0.220	0.084	0.200	0.187	0.103	0.090	-0.387	0.145	0.019
Consequences	Dividends Repatriated	0.008	0.006	0.166	-0.003	0.007	0.727	-0.009	0.010	0.371
	FDI	0.008	0.015	0.595	-0.010	0.018	0.588	-0.002	0.025	0.927
	Domiciled Corporations	0.000	0.000	0.069	-0.001	0.000	0.000	0.000	0.000	0.719
	Market Capitalization	-0.100	0.183	0.594	0.138	0.225	0.548	0.010	0.318	0.975
	Unemployment Rate	0.015	0.007	0.530	0.004	0.009	0.669	0.023	0.012	0.083
		UK								
		BA_Dummy			UKUS_Dummy			UKxUS_Interation		
		B	Std. Error	Sig.	B	Std. Error	Sig.	B	Std. Error	Sig.
Competitiveness	Corporate Compliance Costs	0.000	0.002	0.999	0.007	0.002	0.002	-0.004	-0.002	0.174
	Corporate Tax Revenue	-0.001	0.003	0.842	0.008	0.003	0.034	-0.002	0.004	0.608
	ROA	-0.006	0.017	0.735	-0.004	0.017	0.837	-0.001	0.024	0.974
	Corporate R&D Expenditure	0.000	0.000	0.624	0.008	0.000	0.000	0.000	0.000	0.834
	Market Efficiency Rating	-0.300	0.142	0.067	0.107	0.142	0.474	-0.307	0.201	0.165
Consequences	Dividends Repatriated	0.015	0.001	0.000	-0.010	0.001	0.000	-0.015	0.002	0.000
	FDI	0.015	0.027	0.593	-0.009	0.027	0.740	-0.009	0.038	0.812
	Domiciled Corporations	0.000	0.000	0.041	-0.001	0.000	0.000	0.000	0.000	0.581
	Market Capitalization	0.063	0.233	0.793	0.003	0.233	0.989	-0.153	0.330	0.654
	Unemployment Rate	0.024	0.004	0.001	-0.003	0.004	0.464	0.014	0.006	0.052
		Japan								
		BA_Dummy			JUS_Dummy			JxUS_Interation		
		B	Std. Error	Sig.	B	Std. Error	Sig.	B	Std. Error	Sig.
Competitiveness	Corporate Compliance Costs	-0.004	0.004	0.272	-0.015	0.004	0.003	0.001	0.005	0.871
	Corporate Tax Revenue	-0.003	0.003	0.370	0.021	0.003	0.000	0.000	0.004	0.966
	ROA	-0.011	0.015	0.480	0.027	0.015	0.115	0.005	0.022	0.831
	Corporate R&D Expenditure	-0.001	0.000	0.017	-0.008	0.000	0.000	0.001	0.001	0.056
	Market Efficiency Rating	-0.140	0.101	0.204	0.267	0.101	0.030	-0.467	0.143	0.012
Consequences	Dividends Repatriated	0.002	0.002	0.264	0.005	0.002	0.048	-0.003	0.003	0.289
	FDI	0.001	0.005	0.836	-0.011	0.005	0.047	0.005	0.006	0.493
	Domiciled Corporations	0.000	0.000	0.014	0.000	0.000	0.000	0.000	0.000	0.509
	Market Capitalization	-0.263	0.174	0.168	0.273	0.174	0.154	0.173	0.246	0.500
	Unemployment Rate	0.006	0.005	0.227	0.011	0.005	0.043	0.032	0.006	0.001

[(i)]Significance for the one-tailed test is 0.10
[(ii)] BA_Dummy is defined as {0, Period before 2009} and {1, Period after 2009}
[(iii)] JUS_Dummy is defined as {0, Japan} and {1, USA}
[(iv)] JxUS_Interaction is the interaction term between BA_Dummy and the JUS_Dummy
[(v)] UKUS_Dummy is defined as {0, UK} and {1, USA}
[(vi)] UKxUS_Interaction is the interaction term between BA_Dummy and the UKUS_Dummy
[(vii)] Country_Dummy is defined as {0, Japan and the UK} and {1, USA}
[(viii)] JUKxUS Interaction is the interaction term between BA_Dummy and the Country_Dummy