

Pharmaceutical Companies See a Pot of Gold: Why are pharma companies inverting to Ireland?

Abstract:

A recent trend has seen U.S. pharmaceutical companies flocking to Ireland. The main motivation has been called a tax inversion, where the company will relocate to another country with lower tax rates in order to save money. The United States government has become very concerned over the lost revenue from these companies. This paper looks further into the motivation behind inversion and what drives a company beyond the tax implication to engage in an inversion. The four drivers in this paper are revenue structures, industry origins, ownership structure and legal factors. This is addressed through a case study which examines the drivers by comparing the pharmaceutical industry to the software industry. Through evaluation of the case study, ownership structure, revenue structure and industry origins are all found to have an impact of the firm's decision while legal factors do not. Future research can be expanded to other industries that may have similar characteristics to the pharmaceutical industry in order to examine potential companies that may want to engage in an inversion.

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1.1 Introduction

At the forefront of international finance and tax for the last couple of years has been the wave of tax inversions. From Burger King to Medtronic, companies all over the United States across a variety of industries have found ways to save money on tax expenses. The most publicized way recently has been through the use of tax inversions. Tax inversions have been used since for over 30 years as a way for companies to relocate its headquarters in an effort to reduce effective tax rates and save money of tax expenses. Though companies may publicize the relocation is done for a variety of benefits, most experts believe that tax incentives are the main motivation. After a wave of companies moving overseas, the United States government has started to crack down. A recent series of tax regulations have been published by the United States department of treasury in order to try and stymie the trend, which has seen six large pharmaceutical companies leave the United States for Ireland. These six companies have a combined revenue of \$34.5 billion dollars that the United States government no longer has the opportunity to tax (Douglas-Gabriel). Companies in all industries from engineering to manufacturing have historically engaged in inversions, but the large majority of deals have recently been within the pharmaceutical industry; the question then arises why the pharmaceutical industry is moving more often than any other industry.

This thesis dives deeper into this question and look at tax inversions on the industry level. Research in the past has been aimed at looking at solely the tax benefits of inversions, but this paper will look at drivers that may also be making an inversion a more favorable practice. This paper identifies revenue structures, industry origins, ownership structure and finally legal implications as potential drivers and examines them to see which aspects of the industry are making inversions popular. By comparing a variety of data from a wide range of sources, this paper begins to shine light on the motivations behind inversions.

This topic is important to a few different parties. The most publicized party is the United States government. Even though the money lost through inversions in regards to tax revenue has been small in comparison to total tax income, companies leaving the country can hurt a government in many different ways. These companies strengthen the economy through offering work, paying taxes, and many times support the community. In addition, if a company sees other companies leaving the country, they may be less inclined to move any operations to the United States. This loss of business may be portrayed as a potential sign of weakness for other corporations around the world or to startup companies. The government's concern is apparent in the media and through legislation. Just last year, the Obama administration passed a series of legislation that not only makes inversions more difficult to complete, but also heavily reduces the financial incentives. If other industries begin to see the benefits of an inversion and believe they can be successful, they may follow suit, a trend the United States government would not like to see. This paper aims to identify characteristics of companies that could be potentially benefitted through a tax inversion. While recently pharmaceutical companies have been leading the way, this paper aims to draw attention to aspects of the industry that have made inversions such a popular choice for companies within the industry. These conclusions can be expanded to other industries.

In addition to the government, these results could have potential insight for companies looking to find additional ways to save money. A tax inversion can be costly, but with the right benefits, can also save a company a lot of money of tax expenses. Through analysis of different characteristics, this paper aims to identify potential patterns in companies who have successfully completed a tax inversion. If a company has similar characteristics to the ones identified in this study, there may be an opportunity for a beneficial inversion deal.

The literature review in this paper aims to look at what an inversion is and the motivation for inverting. After briefly examining the basic mechanics of the inversion, it will provide a framework for

the tax implications of inversions and will look more closely at the different tax systems and what about these systems create differences in the expenses a company must pay. The paper will then focus on a case study in order to look more closely into why this has become such a popular trend within the pharmaceutical industry. The study will look at the software industry as a comparable industry and then will examine the differences among the two industries which may make inversions more popular in one industry over another.

My hypothesis is that even though the software and pharmaceutical industries are similar in their globalization and their profit margins, there are differences in revenue structure, ownership structure, the industry origins, and legal implications which make companies within the pharmaceutical industry more likely to perform an inversion. The case study will reveal a level of importance across all of these drivers in order to point out those that may be having more of an affect than others.

The following sections all aim to support the main question. Section 2 of this paper highlights previous literature. Section 3 looks into the methodology behind the paper, the justification for the factors and industries selected, and highlights the data collected. Section 4 presents the data and finally section 5 gives an overview of the results found from the case study.

2 Background of Inversions

History of Inversions

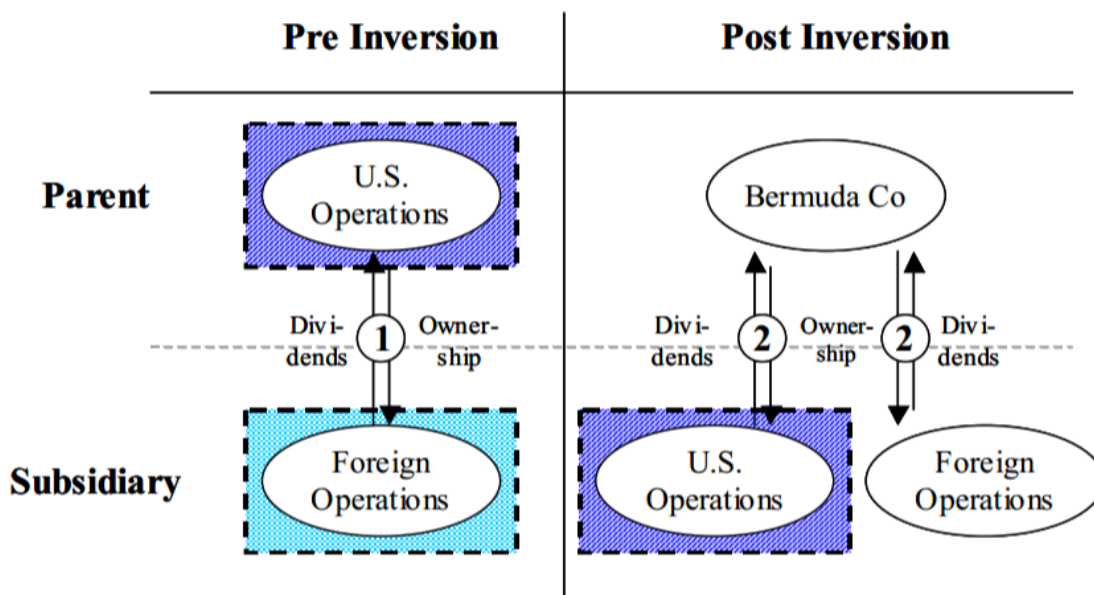
The first deal that is today recognized as a tax inversion occurred in 1983 when McDermott Engineering reincorporated to Panama. McDermott created a subsidiary in Panama and then had the subsidiary take over the parent company in the United States. The government then set up tax laws to hinder smaller companies from taking over larger U.S. companies, such as the deal McDermott successfully completed. Though the government made changes, this did not stop inversions. For the first 20 years of inversions, the Caribbean Islands and Central America were the main destinations of many

companies engaging in inversions, with Bermuda being by far the most popular destination. The majority of these companies were either Oil and Gas companies or insurance companies. Since around 2005, a wider array of companies in varying industries have left the United States for various countries. There was no real trend until around 2012, when a large amount of pharmaceuticals left the United States for Ireland (Douglas-Gabriel).



Mechanics of Inversions

The U.S. Department of Treasury has been called into action as of late into the topic of inversions. Due to the recent rise in an inversion as a business decision, the Treasury has had recent decisions about inversions, including a definition of what the United States government defines as a tax inversion. "A corporate inversion is transaction in which a U.S. based multinational restructures so that the U.S. parent is replaced by a foreign parent, in order to avoid U.S. taxes"(United States Government). There are many ways that a company can restructure in order to become part of a foreign parent. The most common way that such a transaction will take place is through a stock inversion, where the company in the United States will purchase enough shares of a company to form a subsidiary in another country. Then, owners of the parent company will trade their stock of the parent stock for stock of the newly formed subsidiary. The company then changes the U.S. company to a subsidiary of the company overseas which becomes the parent company (Desai, Hines, 8-9). This transaction may also occur with assets, in which the newly formed subsidiary will purchase the assets of the U.S. company in order to take control and make the U.S. company a subsidiary, thus changing the domiciled headquarters of the company. The following table, Inversion Example, illustrates in a very simple way how an inversion works.

Inversion Example (Desai, Hines, 29)



Transaction Summary

- ① U.S. parent owns all worldwide operations
- ② Bermuda parent owns U.S. and foreign operations separately
-  Subject to full U.S. taxation
-  Subject to adjusted U.S. taxation (repatriations, foreign tax credits)

In this example, the U.S. parent creates a new subsidiary (Bermuda Co). Following the inversion, Bermuda Co. becomes the parent company and the original U.S. parent company becomes a new subsidiary of Bermuda following the inversion transaction. When a company performs a stock inversions, shareholders can be subject to large capital gains taxes. The U.S. tax code requires the shareholders to pay capital gains taxes on the stock when the inversion takes place on any gains from when the stock was originally purchased to when the stock is changed over to another company via

inversion. Similarly with an asset inversion, the company must pay capital gains taxes on the appreciation of assets that become a part of the new company, sometimes created a large cost for the company depending on the appreciation of the assets.

3 Literature Review

This thesis aims to closely examine the recent trend of tax inversions, with specific focus on the recent trend of pharmaceutical companies moving headquarters away from the United States and to different countries, primarily Ireland. There has been a fair amount of research surrounding general research on tax inversions, such as what a tax inversion is and how a company performs an inversion. Little research looks at specific industries engaging in such activity, which is what this thesis intends to address.

The prior research sets the foundation for the question that will later be addressed in this paper. It is important to first understand the motivations for an inversions. This literature review will also outline corporate tax laws for two different tax systems, the territorial system and the worldwide system, which have a large impact of firm's decisions of where to invert. Finally in the next sections, this paper will take this one step further and attempt to answer why the pharmaceutical industry in particular has been in the news so often recently for engaging in tax inversions. The following sections outline the two major tax systems and how they tax foreign income at the corporate level. The comparison uses a hypothetical example using the different treatments of Microsoft's income in Switzerland and the United States.

3.1 Territorial vs. Worldwide Tax System

When a company earns profits in a certain country, that country will charge taxes on the profit that is earned. For companies that only operate in one country, the tax paid is relatively straightforward, the company will pay the tax rate that the country has mandated. For multinationals on the other hand,

the taxes paid are derived from two different sources. If a multinational company earns profits in a different country than where it is located (e.g. Microsoft, a United States company, sells software in Switzerland), it will first and foremost pay taxes where the profit is earned (in the example, Switzerland). The company will also pay taxes in their home country (in the example, the United States). Different countries have different systems for taxing corporate income earned in foreign countries, but 28 of 34 of the G8 member countries employ a territorial tax system whereas the other six use a worldwide system (Dittmer).

Territorial Tax System

Under the territorial tax system, a multinational firm will only be taxed by the country where it makes the profit. Using the Microsoft example, when Microsoft sells software in Switzerland, it is taxed on the profits of the sale by the Swiss government at the Swiss corporate tax rate. Hypothetically if the United States uses a territorial tax system, when Microsoft brings the profit generated in Switzerland, the United States government will not additionally tax any profits (Desai, Hines, 5). It does not matter in a territorial tax system where the company is headquartered, only where the company earns profits. The company will be taxed following the rules set out by the specific country where revenue is earned, not by the rules where the company is physically headquartered.

Worldwide Tax System

In the worldwide tax system, a multinational will be taxed both by the country where they create profit at the time of the profit is realized, and by the home country when the profits are brought back. In the Microsoft example, Microsoft will be taxed by Switzerland at the Swiss corporate tax rate when they sell software. Hypothetically if the United States uses a worldwide tax system, Microsoft will be taxed by the United States when they bring back profit. Microsoft will receive a tax credit on the tax expense paid to the Swiss government, but will still have to pay taxes to the United States. If the Swiss

tax rate were 20%, and the United States tax rate were 35%, Microsoft would have to pay 20% to the Swiss government and would still be responsible for paying an additional 15% to the United States government. The purpose of this tax system is to tax all companies the same amount, regardless of where profit is being generated (Desai, Hines).

In reality, companies use a combination of the systems, but as stated above, a heavy majority use a system more resembling a territorial tax system. The United States is one of few countries to still use a worldwide tax system, creating an incentive for companies to move overseas to countries that use a territorial tax system in order to save on taxes brought back to the home country of the company. Using Microsoft once again, if Microsoft were legally listed in England, a country that uses the territorial tax system, they would not have to pay as much additional taxes on the profit generated outside of England. In companies that create a large amount of profit outside of their home company, these differences in tax systems can lead to a strong desire to relocate to a more favorable tax system. This is where a tax inversion comes into play. Companies are willing to engage in a merger or acquisition at a premium in order to restructure their taxes.

3.2 Motivation for inversion

There are costs associated with an inversion, just as with any merger or acquisition, such as the cost of purchasing controlling stake in the company. Mergers can be very expensive for a company, but many U.S. based companies have recently purchased foreign companies at a premium. U.S. companies such as Activis, Horizon Pharma, and Abbvie have recently paid, or proposed to pay more than the suggested value of foreign companies (Schmidt, Bates, Paravano, 4). There must be then a motivation for companies to pay a high price to take over a foreign company. As the name suggests, tax inversions boil down to taxes and the benefits of being legally registered as a company in a certain country over

another country. The main tax benefit lies in the income that a company earns and how that income is taxed.

Location is beneficial for a company's tax rates in two ways. The first is the most obvious and most important, the rate at which the country taxes a company. The United States has a high corporate tax rate in comparison to many other countries. Some countries, such as the Bahamas, Bermuda and the Cayman Islands have zero corporate tax. Strictly from a corporation's perspective, it is cheaper to be located in a country with lower corporate tax rates. The second form of a beneficial location would be when a corporation is located in a country with a territorial tax rate. Under the territorial system, companies are only taxed where they earn profit, and not where they are formally headquartered. Though there are also other forms of tax benefits for multinational companies, such as different treatment of capital gains, the tax benefits on profits earned tends to be the key driver of companies wanting to engage in a tax inversion (Desai, Hines, 421). Multinationals spend a large amount of time and money creating ways to lower their effective tax rate by placing assets and incomes in different countries. Despite these efforts, research has shown that the location of the parent company has the largest effect of the effective tax rate of a company, further driving importance of the location of the parent company (Markle, Shackleford). A recent study showed that a one point reduction in corporate tax rate has been associated with a 1.2% increase in firm value, further showing the importance of the tax rate to a company (Bennedsen, Zeume, 3).

Aside from the tax benefits mentioned, another large advantage to an inversion is that inversions allow companies to use the cash that is held overseas. Companies are only required to pay taxes to the United States government on foreign income when the income is brought back to the United States. In order to try to save money of tax expense, many companies will keep large amounts of cash in other countries as to avoid paying taxes when they bring the cash back to the United States. In addition to simply keeping cash in other countries, companies invest more heavily in other countries as a form of

keeping cash abroad and avoiding any possibly tax expenses. When a company inverts, the cash can be brought back to the firm's headquarters where presumably, the new location of the firm will not tax cash brought back from foreign countries. Having the option to bring back cash can be more important for companies that use a large amount of cash in their business, for anything from product research and development to expensive manufacturing (Bennedsen, Zeume, 2-5).

3.3 Conclusions

There has been a research about tax inversions and the impact on the firm in the ways of tax benefits. There has recently been a lot of attention to these deals in the news and in the government. It is important to note the difference between a tax inversion and any other merger or acquisition. The key distinguishing factor is the relocation of the parent company. It is assumed that the main motivation for companies to perform an inversion is the tax benefits from being legally headquartered in another country. To this point, the literature has only looked at inversions broadly. In the following sections this paper will identify factors where inversions could be popular in terms of opportunities for tax benefits. Then, the paper will move on to examine the differences between two different industries to examine traits of a business that may make it more likely to engage in a tax inversion than other suitable industries.

4. Methodology

This thesis will use a case study to analyze the recent trend of pharmaceutical companies moving overseas. Previous literature has shown that companies are influenced mainly by tax motivations when making a decision to perform an inversion. When analyzing the companies within the last three years, a startling majority of companies that have either completed or are in the process of completing a tax inversion have been within the pharmaceutical industry. Many companies across a variety of industries could find potential tax breaks by looking to move headquarters to different

countries, yet, by an overwhelming majority, pharma companies have been leading the charge. Six large deals in the pharmaceutical industry have headlined the trend of tax inversions in the media. By analyzing a number of drivers, the paper will attempt to create a rationale for why the pharma industry, in comparison to other similar industries, is leading the charge of the recent trend of tax inversions. This paper hypothesizes that the trend is fueled by one or more of the following drivers; a) industry origins b) revenue structures c) ownership structures and d) legal factors. In order to assess these drivers' implications, there needs to be a comparable industry to show differences in these drivers. The Software industry creates a suitable comparison due to its similarity in industry size, industry margins, globalization and research and development costs. This section outlines the method of data collection and explain my rationale for using a case study to examine this trend. The software industry includes such companies as Microsoft and Oracle.

4.1 Software Industry Comparison

The software industry is a fair comparison based on four different factors, industry size, profit margins, globalization, and R&D Spending. The table outlines the factors that make technology a suitable industry comparison. The data collected looks at industry facts from IBIS world, which categorizes industries based on the North American Industry Classification System (NAICS). All data collected encompasses all companies that fall under the classifications for each industry. It is important to note that these companies are similar in regards to motivations for tax inversions. The similarities are drawn in regards to what would make a company consider performing an inversion. Below the table each factor is explained further and outlines the importance of the specific factor in regards to an inversion.

Factor Comparison Table

Factors	Pharma Industry	Software Industry
Industry Size	Revenue: \$163.5 Billion	Revenue: \$196.2 Billion
	Number of Companies: 1,566	Number of Companies: 5,196
Profit Margins	Total Industry Margin: High – 33.4 Billion.	Total Industry Margin: High – 9.2 Billion. This margin percentage can be as high as 40% in large companies
Globalization	Globalization in this industry is high and the trend is increasing (IBIS World)	Globalization in this industry is high and the trend is increasing (IBIS World)
R&D Spending	19% of total Revenues	12% of total Revenues

The data for this table is collected from various industry reports on the IBIS World Database

Industry Size

The Industry size has two components that are important to compare. The first is the overall number of companies. Both industries have thousands of companies in their industry. This means that inevitably there are smaller companies in the industry which are much easier to take over than a larger company. Past research has shown that the probability of a takeover decreases with firm size (Powell). This suggests that smaller firms are more likely to be acquired. Intuitively, this makes sense, as smaller companies will have less assets or shares to acquire, reducing the amount of capital needed by a larger firm to perform a takeover. One key factor to being able to perform an inversion is having a company to take over. The government has made regulations banning takeovers such as the McDermott takeover, where a subsidiary is created in another country with the purpose of purchasing the larger parent company in order to change headquarters. The large amount of companies in both industries suggests that both industries have potential takeover targets. The second size number is the overall revenue of

the industry. Both industries recognize large amount of revenues suggesting a large customer base. The industry sizes are similar when compared to other industries.

Profit Margins

The profit margins are the most important factor in relation to motivation for tax inversions. When companies have larger profit margins, it is much more likely that the company will also have larger tax expenses. With these higher tax expenses, companies have an increased desire to find ways to save on tax expenses, such as a tax inversion. Industries with smaller margins have less motivation to find ways to reduce tax rates. Higher margin industries are more willing to spend money to find lower tax rates and lower tax expenses. As discussed previously, lowering tax rates is the most important motive for companies to propose an inversion. When margins are higher, the company has increased motivation, making high profit industries likely to invert. As both the pharmaceutical industry and the software have much higher than average profit margins, both are industries that may look to be in low tax locations, making both comparable industries.

Globalization

Many companies in this industry recognize revenue and operations around the world. Both pharmaceuticals and software are products that are used around the world regardless of culture or geographic location meaning that it is not vitally important for companies to be headquartered in the area where a majority of revenues are recognized, as both industries have multinationals that will sell around the world regardless of where headquarters are located. The second important aspect of globalization is the potential takeover targets. In addition to small companies, there need to be companies in countries with favorable tax laws. If all companies are in the same country, they are all under the same tax regulations. The global industry provides more options for companies to find a takeover target in a favorable location. Considering both companies have a very global presence, not

only in the location of companies, but where the industries generate revenues, the software and pharmaceutical industries are a fair comparison.

Research and Development Expenses

Both industries are heavily driven by research and development. The software industry does not make a physical product with the exception of a CD or other device to hold the software. Both companies require large amounts of investment into research and development programs. As discussed earlier, one advantage of being located in a country using the territorial system is freedom to bring cash back to the company headquarters without being subject to tax laws in the domiciled country. Tax inversions allow companies with large amount of research and development costs to repatriate earnings and gives freedom for companies to use cash where it is needed. Considering both industries have large research and development costs, the freedom to be able to bring cash back to the company's headquarters and reinvest money freely is a large advantage. Though the pharmaceutical industry has a higher percentage of revenues going to research and development, a high percentage of wages paid to workers in the software industry are paid to individuals that work on research and development. These costs are not directly expensed as research and development. The high costs as a percentage of revenue in both industries make the two a fair comparison.

4.2 Motivation for Methodology

A case study is the most appropriate way to analyze this situation. This method is the most effective way to analyze multiple factors that are both quantitative, but also strongly qualitative in nature. As there is little statistical comparison that can be drawn between such qualitative factors, a case study allows for a unique way to assess the question by comparing a similar industry. With the small sample size of looking at two different industries, statistical tests would be unreliable and not give

a clear picture of the situation. Though multiple industries can be chosen that could draw a comparison, the software industry draws the best comparison as outlined in section 4.1 above.

Through looking at the results of the case study, each factor can be individually assessed and a conclusion can be made about the influence or importance of each driver. The case study aims to highlight major differences in a variety of data. This study will look to explain any differences and examine how the driver would affect one company moving overseas. The next section will not only analyze differences in industries with regards to the drivers, but it will also explain the importance of each driver as a decision maker in a tax inversion deal. It may be found that more than one driver influences firms decision making process. It may also be found that no drivers can be found and inversions have become a “keeping up with the Jones” phenomenon. This phenomenon is an idea that companies are only engaging in inversions in order to follow their competitor’s actions. This idea will be discussed further in the data analysis and results section.

Key Drivers Used

The following sections discuss the drivers examined in the case study. Each section explains what is found in each section of the case study and highlights the potential importance that each driver could have on the decision making process of the firm. These drivers are derived based on past research combined with potential tax inversion benefits.

Revenue Structure

The revenue structure examines where the cash flows for the industry are being generated. The total revenue of the 25 largest companies in the industry are added together and compared. The data shows differences in the total revenue of these 25 countries that is being generated inside the United States instead of outside of the United States. Only the 25 largest companies are examined in this case study. Previous literature has shown that larger companies are more likely to be companies who are

engaging in takeovers (Powell, 50). The smaller the company, the more likely that the company will be bought out by another company. Given that the larger companies are more likely to be engaging in takeovers, only these companies are compared. The importance behind the revenue structure lies in the fact that if a large amount of revenues are generated outside of the United States, more taxes will be paid if these revenues are brought back to the United States through the tax methods discussed earlier in this paper. If a United States company is making a majority of revenues outside of the country, there will be more incentive to find ways to reduce the tax expense from these foreign revenues, such as an inversion. The amount of revenue gained inside of the United States has less of an effect, as taxes on foreign revenues are based on the country where the revenue is recognized. No matter the firm's location, the revenue generated inside the United States will be taxed at the same rates. This means that revenue generated inside the United States by a U.S. company will be taxed at the same amount as revenue generated inside the United States by a company from Ireland. When companies located outside of the United States gain a large amount of revenue in foreign countries and bring the revenues back to the company's headquarters, no additional taxes are paid upon repatriation. Changing a firm's headquarters through an inversion provides a company a way to avoid paying repatriation taxes, assuming the company is located in a country using the territorial tax system. Therefore, more revenue generated outside of United States gives companies more incentive to find ways to reduce tax expenses on money generated outside of the United States.

Ownership Structure

This area very simply looks at whether most of the industry is financed publically or privately. When companies are financed publically, the company is at the discretion of the shareholders, compared to private companies whose decisions are driven by the few owners of the company. Public companies are constantly under scrutiny of their shareholders. If shareholders see rivals in the industry moving overseas for tax purposes, they may wonder why their company is not moving overseas. Past

research also gives a glimpse into the differences in takeover behavior between public and private ownership. Private companies are generally undervalued when compared to public companies, making private companies cheaper to acquire (Bugeja, Sinelnikov, 406). If the company is largely undervalued, the market believes it is worth less than it may actually be worth. If private companies can be bought at a cheaper price, then an industry with more private companies may be more prone to buyouts as companies can find good deals on private companies. The data compares private companies to public companies in each industry. Past research suggests the industry with more private companies would have more companies that are undervalued and therefore could be bought out for a good price. In addition to the value of the company, private companies are less independent than public companies (Bugeja, Sinelnikov). Prior literature suggests that independence can be a factor when examining the company purchasing a takeover target. Many times private companies have alternative motives for engaging in a takeover. Public companies tend to have a specific goal in mind when evaluating a takeover proposition. Generally, this goal is to the sole advantage of the shareholders, the owners of the company. When examining takeovers as part of tax inversions, the main goal of a public company engaging in a tax inversion is to lower tax expenses. After examining these two aspects of ownership, an industry with large public companies with a singular goal of lowering tax expenses may be more likely to engage in inversions. At the same time, industries with smaller private companies that may be undervalued may be more likely to have inversions due to price of buying out smaller companies.

Industry Origins

The industry origin driver is broken into two parts. The first part examines the location of all firms in the industry to gain an idea of where companies within each industry are located. The study first examines where all publically owned companies within the industry are located. The data lists companies that are inside the United States and compares them to companies outside of the United States. It is important to have an understanding of firm location because if more companies are located

inside the United States or countries with higher tax rates, there are less targets for potential takeovers in the industry when compared to an industry where many companies are located outside of the United States. The second part of the data looks more specifically at the 25 largest companies in the industry. These 25 largest are determined based on revenues generated in 2014. The study again focuses on the 25 largest companies as the companies most likely poised and able to perform a takeover. It is important to note for the pharmaceutical industry that many of the large players have engaged in a tax inversion or takeover which will affect the data. For this reason, companies that have successfully performed an inversion within the past 3 years will be included in the original location of the firm, so as to eliminate the dynamic shift in the pharmaceutical industry. The origins of the industry are important so far as potential takeover targets. If a majority of the companies are inside of the United States, large American corporations will have less targets to take over a company located in a more favorable tax location.

Legal Factors

The last driver is the legal factors upon each industry. A closer examination of the legal environment around the company gives a picture of how the company is expected to act. For the purpose of this study, these legal factors exclude any tax laws. The tax effects of regulations are already assumed to be accounted for in the company's initial decision to consider an inversion. This section looks at regulations that governments have in place that may impact the industry beyond tax impacts. For this specific study, the data examined outlines main legal concerns for the largest companies in each industry as outlined in annual reports, as well as federal laws surrounding both pharmaceutical regulation and software regulation. If a company can find a country where legal factors are favorable, meaning there are less restrictive laws, a company may be more inclined to move.

4.3 Data Collection

In order to analyze each driver, a wide range of data was collected. Company specific data, industry data, and government data is examined in order to have a complete look at each driver involved. The table below outlines what data was collected for each key driver and what source was used to collect the data. The data from varying sources addresses each factor individually and allows assessment of the importance of each driver in the decision making process of a tax inversion.

Data Collected Table

Key Driver	Data Collected	Source of Data
Revenue Structure	<ul style="list-style-type: none"> Where revenue is generated domestically vs. internationally 	<ul style="list-style-type: none"> Annual Reports of largest 25 companies in the industry – income statements S&P IQ Capital Net Advantage Databases
Ownership Structure	<ul style="list-style-type: none"> How companies are financed through equity, either through private ownership or public ownership Listings on stock exchanges 	<ul style="list-style-type: none"> Stock Exchange listings S&P IQ Capital Net Advantage Databases Company Reports – private websites of companies Annual Reports of public companies
Industry Origins	<ul style="list-style-type: none"> Company headquarters locations for top companies Company headquarter locations for all publically listed companies 	<ul style="list-style-type: none"> Annual reports S&P Company Listings NAICS Industry Classifications S&P IQ Capital Net Advantage Databases
Legal Factors	<ul style="list-style-type: none"> Regulatory factors on a particular industry The role the government plays in the industry and how much control government has 	<ul style="list-style-type: none"> U.S. FDA website U.S. IRA tax regulations Annual Reports for largest 25 companies

4.4 Limitations and Strengths of Methodology

The main strength of the methodology is the use of a case study. A case study allows the question to address a variety of data for the two specific industries. The software industry has many of the same characteristics as the pharmaceutical industry in a couple key aspects and provides a reasonable comparison. By using a case study with a comparable industry, this paper is able to isolate potential drivers that may influence firm's decision making with regards to tax inversions. An important assumption is that the two industries are similar enough to compare. The justifications in the previous section outline why the two industries are selected.

The pharmaceutical industry is very unique, in terms of the fact that there are around fifteen companies that dominate the industry around the world. This is tough to do in many industries, but as pharmaceuticals are a product that are going to be used, regardless of language, culture (excluding some religions), or geographic locations, companies are able to dominate markets around the world with one large parent company. Thus, finding a comparison can be difficult. This paper fails to address other industries that may also have a fair comparison such as size, margins and globalizations, but the software industry has just reasoning for why it was chosen.

Another limitation is looking at the industry as a whole compared to companies individually. The software industry has more companies overall that are smaller and may not have the capital necessary to perform a takeover of a foreign company, but it is important to recognize that there are many large companies in the industry such as Oracle and Microsoft who are not engaging in the same tax inversion transactions as the pharmaceutical industries is with similarly sized companies. By not assessing individual companies and only looking at the industry, some information or factors may be missed by not looking closer at individual company statistics.

One further note is that the data collected adhered to companies listed by specific NAICS codes. For the software industry, the industry classification system only put companies that generate the majority of revenues from software as part of the software industry. For the technology industry, this can cause a skew in the data. IBM is a large company that generates a lot of software revenue around the world. IBM's main source of revenue is not software however, so IBM is not included in this case study. As IBM generates a lot of revenues around the world, this could have potential impacts on the data collected.

A final limitation is the use of a case study is an inability to examine how these drivers work together. A case study does a good job of examining each variable, but does not allow for two or three variables to work together. In this study for example, the case study separates ownership structure and industry origin, allowing an examination of each individually. The study is limited in its ability to compare how ownership structure in different industry origins for a specific industry relate to ownership structure in different industry origins for another specific industry. This limits to effectiveness of the study in terms of finding an overall structure for companies engaging in tax inversions, but rather excels at pointing out individual characteristics of industries.

5. Results

After data was collected from a variety of sources, it was compared across industries. Each driver was examined as outlined above in the methodology section and the results are displayed below in the Drivers Results Table. Assessing the driver's importance was based on the differences in the data across the industry. For each factor, a different set of data is used to derive a set of differences observed between the two industries. From this point, the data is compared based on the potential impacts a tax inversion would have on each driver. For the revenue structure, the majority, almost 59%, of revenues for the pharma industry were generated internationally, defined as sales outside of the United States. The software industry on the other hand had just under half, or 49% of its revenues generated

internationally. This lead to an “important” rating being assigned to this factor, as a majority of revenues in the pharma industry are generated outside the United States, while a minority of revenues in the software industry are generated outside the United States. A similar rationale is applied to the industry origins driver. The pharmaceutical industry has a healthy majority of companies, 60%, headquartered outside of the United States, whereas the software industry only has 48% headquartered outside of the United States. The ownership structure sees a large difference in percentages of public ownership compared to private ownership across the industries. The pharmaceutical industry has more than 3 times the percentage of publically owned companies, at 32%, than software industry, where only 10% on companies within the industry are publically owned. This leads to the driver being deemed highly important given the large difference in percentages. The legal factors do not affect the industries location very much, as both need to comply with the regulations of the country where business is done as opposed to where the company is headquartered. After review of the legal factors, this driver is not important for firm’s decision to perform a tax inversion. The table on the following page summarizes the main findings across each industry.

Driver Results Table

	Pharma Industry	Software Industry	Key Driver Importance
<p>Revenue Structure</p> <p><i>The revenue structure of a company plays a large role in the amount of taxes paid. If companies are incorporated in the U.S., they pay more of the high U.S. corporate tax rates.</i></p>	<p>When examining the 25 largest publically traded companies in the industry, the total revenue generated for 2014 was about \$572 billion dollars.</p> <p>Of the \$572 billion, \$237 billion, or 41.20% of revenues were generated in the United States while \$336 billion, or 58.80% were generated internationally</p>	<p>When examining the 25 largest publically traded companies in the industry, the total revenue generated for 2014 was about \$178 billion dollars.</p> <p>Of the \$178 billion, \$90 billion, or 50.78% of revenues were generated in the United States, while \$88 billion, or 49.23% were generated internationally.</p>	Somewhat important.
<p>Ownership Structure</p> <p><i>Public Companies are defined here as listed on any stock exchange market. Public companies must keep the desires of shareholders in mind when making decisions.</i></p>	<p>Of the 3,270 companies assigned to the Pharmaceutical manufacturing industry classification code, there are 1,063 that are listed on a public exchange and have total revenues of greater than zero.</p> <p>32.5% of all companies within the industry are public.</p>	<p>Of the 5,166 companies assigned to the Software Publishing industry classification code, there are 538 companies that are listed on a public exchange and that have total revenues greater than zero.</p> <p>10.4% of all companies within the industry are public.</p>	Highly Important.
<p>Industry Origins</p> <p><i>Many industries tend to move to clusters globally, and can tend to feel pressure to be located near competitors.</i></p>	<p>Of the 1,063 publically listed companies in the industry with revenue greater than zero, 426, or 41.01% of companies are headquartered in the United States.</p> <p>637, or 59.99% of companies are headquartered internationally.</p>	<p>Of the 538 publically listed companies in the industry that have a revenue of greater than zero, 283, or 52.6% of companies are headquartered in the United States.</p> <p>255, or 47.4% of these companies are headquartered internationally.</p>	Somewhat important.
<p>Legislation</p> <p><i>The more legislation a company faces, the more conscious it must be of every aspect of the business, usually leading to incurring more expenses.</i></p>	<p>Food and Drug Administration, has stringent laws on pricing, testing, manufacturing and labeling. All companies in the industry face FDA legislation for products sold in U.S.</p> <p>Most other countries provide legal requirements for pricing and patents, aiming at making drugs low cost.</p>	<p>United States anti-trust laws often face the software industry, especially for the larger players.</p> <p>EU closely scrutinizes software releases, often causing delays and or cancellation in release in software.</p>	Not important.

5.1 Discussion of Results

The following sections go into more detail of each driver and the data collected. After analyzing data, the results are compared with expectations for each driver. Finally, a brief discussion of possible differences in expectations and what the data provided follows.

Revenue Structure

According to the National Tax Foundation, in 2010, the effective tax rate for corporations earning income outside of the United States was around 27%. For the largest corporations, the tax rate in 2010 for the United States was 35%. This means that corporations are paying an excess 8% on earnings outside of the United States when revenue are repatriated. If this 8% rate were applied to the entire industry, over \$25 billion dollars of tax was paid to the United States government on earnings in foreign countries for the pharmaceutical industry. While this number is most likely exaggerated, as these are average industry rates and not all earnings are brought back to the United States, this is a large number that companies could potentially be saving. In comparison, this same roughly estimated figure is only \$7 billion for the software industry. If the software industry as a whole earned as much as the pharmaceutical industry, the more realistic differences in taxes paid of foreign earnings would be closer to \$2 billion less. These numbers are loose estimates, but show how important the tax system can be for these industries.

When examining the data collected for the 25 largest companies in each industry, the pharmaceutical industry gains 58% of revenues outside of the United States compared to the software industry, who earns only 49%. These are not unexpected results given the trend of inversions in the United States. The pharmaceutical industry earns more revenues outside of the United States, and therefore are more eager to look for ways to reduce its effective tax rates through tax inversions. The unexpected aspect of these results are to look the software industries potential benefits of inversions.

Like the pharma industry, the software industry generates a large amount of revenue internationally, which after an inversion could be taxed at a more favorable rate. From this data, there seems to be a threshold of revenue structure where the benefit of an inversion outweighs the cost. As this study focuses on the industry as a whole, this threshold cannot be reasonably deducted, but the data would suggest that a closer look at a company's revenue structure, specifically where revenues are generated can impact a firm's decision to perform a tax inversion.

Ownership Structure

Based on the assumption from past research that private companies are undervalued when compared to public companies, the data on ownership structure is somewhat counterintuitive. The software industry has almost 90% of companies private, compared to closer to 68% private companies in the pharma industry. This would suggest that there are many companies in the software industry that may be undervalued and therefore could have potential takeover targets. However, out of the top 25 largest companies in terms of revenues, the pharmaceutical industry has more companies that have public ownership (or a form of public ownership, as in the case of a few European pharmaceutical companies). 22 of the 25 largest software companies examined in this case study are public, while 24 of the 25 largest pharmaceutical companies examined in this study have some form of public ownership (S&P data). Based on the prior literature discussed, the data supports the idea that public companies are more likely to engage in a takeover with a singular goal in mind, which in this case is to lower tax expenses. Having more public companies also means that more companies in the pharmaceutical industry are influenced by shareholders, pressuring executives to create value for shareholders. For the purpose of this case study, the value is derived by lowering of the effective tax rates by relocating headquarters. As previously stated, lowering effective tax rates by just one percent has shown increased in firm value of 1.2 percent (Bennedsen, Zuome, 3). Based on the large differences in ownership

structure between the two industries, the data suggests that ownership structure has important influence on an industries decision in regards to tax inversions.

Industry Origins

The data collected in the industry origins section points to a few interesting results. The first result is the overall, the pharmaceutical industry is much more diverse in terms of firm location. 60% of publically listed companies in the pharmaceutical industry are located outside of the United States while only 47% of companies within the software industry are located outside of the United States. This immediately gives companies within the pharma industry more companies outside of the United States in potentially tax favorable locations. More companies outside of the United States leads to a larger amount of potential takeover targets within the pharma industry.

Another aspect of industry origins is the idea of industry clusters. Before 2012 and the wave of pharmaceutical companies moving to Ireland, there was no real cluster of companies within the pharmaceutical industry. The largest 25 companies in the industry today are spread all around the world. In comparison, only 2 of the largest 25 software companies examined in this paper are located outside of the United States. Silicon Valley is a large cluster of technology firms that provides numerous advantages for companies within technology industries (Engel, 37). The lack of any apparent cluster in the pharmaceutical industry allows companies within this industry to be located around the world and have less of a concern of being far away from the advantages of a cluster. The software industry does not have the same freedom. Both aspects of firm location seem to suggest that a more global industry makes companies within that industry less concerned with location making relocation due to an inversion less of a concern.

Legislation

The data shows that legislation is of little importance on firm location and would not impact a firm's decision to engage in an inversion. Much of the legislation in both industries is geared towards where the product is used as opposed to where the product is created. This devalues any firm's decision to change location, as no matter where the headquarters are located, the firm must always adhere to the laws of the country where the product is used or consumed. Legislation, excluding tax laws, has very little to no impact to further a company's decision to perform a tax inversion.

6. Conclusion

The results show a level of importance on each of the four drivers analyzed for the hypothesis that revenue structure, ownership structure, industry origins and legislation create incentives for pharmaceutical companies to engage in a tax inversion. Drivers were examined through a variety of mainly qualitative data sources in order to analyze the differences across industries of each driver. These drivers were chosen based on past research of inversions in addition to the potential tax benefits of inversions and how the driver affects these benefits. There are other industries that could have been a suitable comparison based on the globalization of the business and the profit margins, but as discussed, the software industry provides a comparison with similar characteristics in many regards.

These drivers can be used more generally to describe industries that may want to consider an inversion. For example, companies in an industry where clusters of other companies may be located may be tempted to invert and be closer to the cluster, where a workforce and infrastructure are in place to support the industry. This is not the case with regards to the pharmaceutical industry as no cluster is apparent, but the software industry has a cluster inside the United States which discourages software companies from relocated away from the United States.

These results match expectations for the most part. For the revenue structure in particular, it makes intuitive sense that if a company were to gain more revenues in other countries than the United States, then this would lead to more of an incentive to move to a country where tax rates are lower and where the company does not need to pay domestic taxes on foreign revenue. What is interesting about the revenue structure is the size of the revenues. For the software industry, almost 50% of revenues overseas still would seem an important driver to move overseas, yet this does not occur. This could either suggest that the other drivers tie into the decision, making tax implications not necessarily the only driver that firms look at. This could also suggest that the cost of inverting is just too high for the money saved in the industry. It is possible that the almost 60% of revenues from the pharmaceutical industry generated in foreign countries is high enough for companies to take note and act to try to lower that expense at that point. It was unexpected to find such a difference in the amount of public vs. private companies in the industries. The pharmaceutical industry has almost 3 times more of the percentage of publically owned companies than the software. This may account for the massive amount of media attention these deals get, as the media will report on the news that will affect investors of the companies.

The one driver that was expected to be most important, as yet was not important at all was the legal environment. As tax is part of the legal environment, all companies will be under the same scrutiny within countries for the tax part. However, the legal environment is also similar for both industries, and could be said about most industries in the United States, especially within consumer products. The government were the product is being sold is going to have the last say on the good sold and therefore the home of the country is not important. The results did show however that the software companies may be under more scrutiny in other countries than the United States. This would suggest that the legal factors may be a driver for software companies to stay in the United States instead of leave.

Overall, 3 of the 4 drivers showed differences in the industries and showed that these may be more important factors than simply the profits of the companies and the globalization of the company. The revenue and ownership structures as well as the industry origins had importance in the decision while the legal factors did not. Though this paper did not address it, the results hint that these factors may be intertwined and that more than one would be necessary for a company to consider an inversion.

One factor that has not been addressed is that of a game of follow the leader. If one company sees success from engaging in an inversion, other companies may be inclined to follow suit. After a successful inversion from a pharmaceutical company, others in the industry may feel that they need to keep up with the competition and do not want to move slowly in order to stay competitive. This phenomenon may be further driven with that large amount of public companies within the pharmaceutical industry. Shareholders of public companies may have further influence as they expect their company to follow suit with competitors. Software companies however may not feel the pressure to act as they are not in competition with the pharmaceutical companies. This is difficult to identify without having access to the decision makers in the companies that are performing the tax inversions.

The next step in this line of research is to extend the same case study to look at the countries that companies invert to. Why is Ireland the feature destination for so many companies lately? Many countries have similar tax systems as Ireland, so factors such as education, available capital, and resources may come into play.

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