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The effect of Tax Cuts and Jobs Act on tax rates and profitability

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I hereby declare that I have compiled the thesis independently and all works, important standpoints and data by other authors have been properly referenced and the same paper has not been previously presented for grading.

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ABSTRACT

The effect of Tax Cuts and Jobs Act of 2017 (TCJA) on performance of U.S multinational corporations is investigated. More specifically the effect on income statement accounts, effective tax rates and net profit. The effect of TCJA is calculated using publicly available annual reports of U.S companies. TCJA led to a change in effective tax rate but it is still unclear whether the more likely effect was an increase or a decrease in effective tax rate. There was no statistically significant change in net profit but on average net profit decreased. These results suggest that any analysis in performance has to be approached on a case-by-case basis. There is most likely a TCJA effect but whether the effect is a positive or a negative one depends completely on the individual company.

Keywords: TCJA, foreign cash, tax rate, net profit

INTRODUCTION

Before the Tax Cuts and Jobs Act of 2017 (TCJA) U.S multinational companies had accumulated a vast amount of cash in foreign subsidiaries. There were two key reasons to hold cash abroad, it was domestically taxed only after it was repatriated to U.S and a Republican majority congress might lead to a tax holiday. Corporate lobbyists won and in the tax act repatriation taxes were removed. A transition tax was charged from U.S companies with foreign subsidiaries. The transition tax was based on past non-repatriated foreign earnings and the rate was between 8% and 15.5%. Companies kept assets abroad because it was significantly cheaper to finance with debt than it was to repatriate foreign cash.

Proponents of a tax reform argued that the foreign cash was trapped abroad and by lifting repatriation taxes, investments in U.S would increase and a boost in the economy would follow. The reality was that majority of the foreign cash was already in dollar-denominated securities and the only things trapped were shareholder payouts and tax revenues. After George Bush's tax holiday in 2004 companies realised that with enough pressure towards policy-makers they could get their foreign earnings much cheaper by waiting rather than by repatriating them and thus started increasing the amount of foreign cash.

Before the tax act non-repatriated foreign earnings should have been recorded as a liability in deferred tax liabilities. The way the transition tax was planned to be accounted for was that deferred tax liabilities would be debited and taxes payable would be credited. The problem was that the deferred tax liabilities and the amount of transition tax rarely matched. This forced companies to make adjusting entries in their income tax expenses. Income tax expense is an income statement account and that is why the transition tax had such great effects on effective tax rates and profitability for companies in their fiscal year of the act.

Before this study it was known that the TCJA affected the performance of U.S companies in 2017 to some extent. Some companies had an effect of more than \$10 billion while some had a small to no effect. What was not known was whether the effect was broadly on all U.S multinational

companies or whether there were effects only on an individual level. It was unclear whether the act was something stakeholders should take into account when analysing performance of 2017 or whether a significant impact from the act was uncommon.

The aim of this thesis is to find out whether the act had a statistically significant impact on tax rates and whether profitability was statistically significantly decreased. The population studied was the S&P 100 index. The first chapter will get into more detail on the tax act and on foreign cash, and then elaborate on the accounting details. The second chapter is a study on tax rates and profitability.

1. TAX CUTS AND JOBS ACT OF 2017

The U.S Tax Cuts and Jobs Act of 2017 was signed into law on December 22nd by President Donald Trump. For American corporations, the act had two major sections, the federal tax rate was reduced from 35% to 21% and the U.S transitioned from a global tax system to a territorial one. In the old system, all profits earned by U.S companies were taxed at a statutory tax rate of 35%. The difference regarding foreign earnings was that a corporation would have to pay the federal tax rate on them only after earnings from a foreign subsidiary were repatriated, simply said, brought back to U.S, minus foreign tax credits. The global system arguably encourages, those who have means to, to rather keep earnings in foreign subsidiaries. In the new territorial tax system earnings are only taxed in the country they are earned in, with the local rate, in an attempt to end hoarding of foreign cash for tax purposes. To move into the territorial tax system TCJA enacted a one-time deemed repatriation.

1.1. Deemed repatriation

Deemed repatriation, also known as the “transition tax”, is a one-time tax imposed on U.S companies with past, deferred, foreign earnings all the way from year 1986. As the U.S transitioned to the new system there had to be a payment regarding past earnings. If there would not have been, the companies with foreign assets would have been rewarded with a tax holiday for holding those assets abroad.

The tax rate for the transition tax was 15.5% for liquid assets and 8% for illiquid assets. The evaluation of assets was done on 2016 balances so that companies would not be able to restructure their assets to take advantage of the lower tax rate of 8%. The 8% for illiquid assets refers to indefinitely reinvested assets which are, by definition, unlikely to ever be repatriated. The transition tax had to be paid whether the company repatriated those foreign earnings or not. The tax can be paid with eight instalments in an eight-year period. The eight-year period is interest free creating the assumption that companies will pay them as late as possible (KPMG 2019).

Repatriation is merely nothing but a nominal change in the ownership of an asset from a certain subsidiary to its parent company. Assets are recorded on the balance sheet of the parent company whether they are held by a subsidiary or the parent company. The only notable difference is that after repatriation, the asset can be distributed in the U.S, arguably most likely as dividends or share buybacks. Zoltan Poszar (2018), a contributor for Credit-Suisse, argues that liquid assets held by foreign subsidiaries were already mostly in U.S dollar-denominated bonds such as U.S Treasury bonds. There was in practice no “trapped” money somewhere waiting to be released.

The transition tax was recorded on financial statements the same year it was issued, in 2017. The problem is that the transition tax represents past earnings but carried an effect to income statement items, while the payments from it would occur in the future. The income statement calculates the net profit for a company in a given year and by recording a transaction related to past earnings and future payments, the apparent financial performance of an examined company then becomes inaccurate. As one of the more prominent examples, American International Group (AIG) had an effective tax rate of 522% for its EBT (Earnings Before Taxes) of \$1.4 billion in the fiscal year of 2017. The company recorded a net loss of more than six billion dollars. Without the adjustments of the act in the income statement, AIG would have recorded a net profit of \$603 million in 2017. The transition tax highly affected the performance of many multinational corporations in the year of 2017, but mostly on paper, as the tax was on past earnings. A company could have had a good year but show poor performance, or even a loss, due to the tax.

1.1.1. Incentives to keep earnings abroad

The reason U.S companies have accumulated assets abroad is to refrain from having to pay the federal income tax. Other than indefinitely reinvested foreign earnings, assets had been piling up in foreign subsidiaries. The pecking order theory says that companies finance operations using internal financing first, debt second and equity last, but Kornberg (2007) argues that companies with foreign cash holdings rather issued debt to finance operations, than repatriate foreign cash.

KPMG’s (2018) cost of capital study found that in years 2016-2017, cost of debt for U.S corporations was only 3.1% on average. As interest expenses are pre-tax expenses, the after-tax rate is even less, compared to cash. It needs to be understood that use of foreign cash was very liberal even before the act. Companies could invest in U.S securities as long as the investments were in unrelated companies (Richard & Craig 2014). Also, the only restriction to issuing bonds was that the issued bonds could not be backed by foreign cash. For a company with tens or

hundreds of billions of dollars in foreign liquid assets, there is really no need to convince investors of low risk, even if the foreign cash is not direct collateral for the issued bonds. Hypothetically speaking, a tech company and a pharmaceutical company, industries which were leading in the amount of foreign cash, could both issue the same amount of bonds, with the same face value and yield, then buy the bonds from each other, adding no cost to financing. They would not practically pay any extra federal taxes for attaining this capital.

Arguably it was much cheaper to finance with debt than it was to finance with repatriated cash. High availability of excess cash is also a good way to hedge against possible, future uncertainties in the market or guarantee a fast cash flow for possible capital expenditures. For example, Apple had a quick ratio of 2.8 in the fiscal year of 2017 when a quick ratio of 1 is often considered normal. Companies could easily import their liquid assets to U.S if necessary, making it logical to hold them abroad until incentives to bring them back to U.S arise. President Bush's one-time dividend deduction of 2004 gave companies an opportunity to repatriate earnings in a very competitive effective tax rate of 5.25%. After Bush's deduction, it made sense to rather hold cash and wait for another tax holiday than to repatriate at the statutory tax rate of 35%.

1.1.2. George Bush's tax holiday

In 2004, the Bush administration created a one-time dividend received deduction as part of the Homeland Investment Act. The idea was to get U.S companies to repatriate foreign earnings and invest them in domestic capital expenditures, creating jobs and increasing domestic investments. The one-time deduction was up to 85%, leading to an effective tax rate of 5.25%. The result was that \$362 billion was repatriated (Redmiles 2008).

As can be seen from the figure below, amount of foreign cash held by U.S based multinational corporations decreased in 2004 after the tax deduction, and then started increasing again after 2005. It can be argued that Bush's repatriation cut encouraged companies to accumulate even greater amounts of foreign cash and wait for the next tax deduction. According to De Simone & colleagues (2017), "594 firms with the highest likelihood of repatriation accumulated \$376 billion to \$488 billion in excess cash in anticipation of a reduction in repatriation taxes". Even though the amount of foreign cash held by multinationals had been larger than the amount of domestic cash even before 2004, after 2004 the amount of foreign cash had been increasing while the amount of domestic cash had been decreasing.

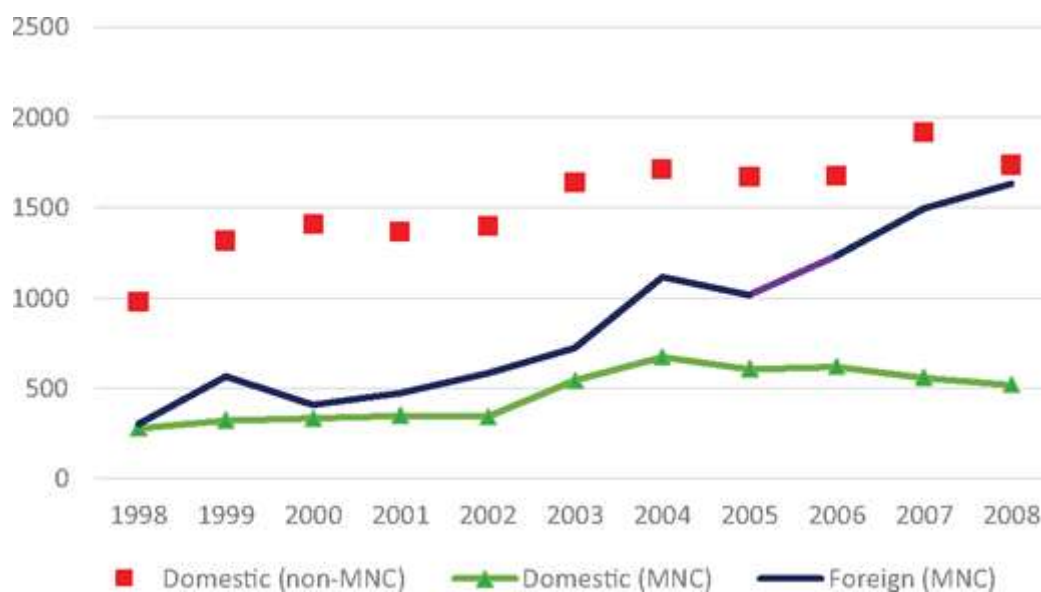


Figure 1. Domestic and foreign cash
 Source: Faulkender, Hankins & Petersen (2019)

One of the prerequisites in the Bush repatriation cut was that companies had to submit a reinvestment plan to regulators so that the tax cut would create a benefit to the economy and not act as a reward to tax avoiding multinationals. Dividend payments and stock buybacks were explicitly prohibited. The problem was that, as cash is fungible, it was impossible to track how the repatriated funds were used as there were no means for regulators to distinguish between cash earned domestically and cash earned abroad. The tax cut failed in its objective to stimulate the economy in the desired way as after all, most of the repatriated funds were used for prohibited activities. Dharmapala & colleagues (2011) show that up to 92% of repatriated funds were used in shareholder payouts. Thus there was no reason to add prerequisites on use of repatriated funds under the TCJA as the track record shows it would have been impossible to regulate the cash.

1.2. Foreign cash

It can be argued whether other than U.S nationals and U.S companies should care for trying to understand how U.S companies compile their financial data. The fact is that more than one third of U.S equity markets is owned by foreign investors (Rosenthal & Burke 2020). Now what is unclear is that whether these stock positions are held by actual foreigners or foreign subsidiaries of U.S multinationals. By looking at the data it becomes evident that the top countries where most of the equity is owned are known locations for U.S companies to exercise tax avoidance. Top 10 countries include names such as the Cayman Islands, Canada, United Kingdom, Luxembourg,

Switzerland, Ireland and the Netherlands (Rudden 2020). As U.S companies are known to invest most of their foreign cash in U.S securities and debt obligations, the input of foreigners in U.S equity markets might not be that significant after all. Whatever the case, it still makes sense to try to understand U.S transactions and accounting principles and learn from them.

In 2017 President Trump claimed that there is \$4 trillion ‘sitting offshores’ while advertising his upcoming tax act (Tobias 2017). In 2016 U.S companies did have at least \$4 trillion in cash, but it was not all offshore and repatriateable. According to Smolyansky & colleagues (2019), the S&P 500 companies had roughly \$1 trillion of foreign earnings which could be repatriated, not including financial companies. Financial companies, such as banks, are hard to analyse since they have special regulations regarding the amount of cash they need to hold for reserves. Other earnings were believed to be reinvested indefinitely. Trump was not wrong, in the sense that companies had been gathering up cash offshore to save in taxes. According to Faulkender & partners (2019), the amount of cash offshore had been increasing and up to 79% of the increase can be explained by lower tax rates in foreign jurisdictions.

Companies with most money held offshore in 2016

	BILLIONS			
Apple	\$246.0		PepsiCo	44.9
Pfizer	198.9		JPMorgan Chase	38.4
Microsoft	142.0		Gilead Sciences	37.6
General Electric	82.0		Amgen	36.6
IBM	71.4		Coca-Cola	35.5
Johnson & Johnson	66.2		Qualcomm	32.5
Cisco Systems	65.6		Goldman Sachs	31.2
Merck	63.1		United Technologies	31.0
Google	60.7		AbbVie	29.0
Exxon Mobil	54.0		Eli Lilly	28.0
Procter & Gamble	49.0		Wal-Mart	26.6
Oracle	47.5		Hewlett Packard Enterprise	26.2
Citigroup	47.0		Bristol-Myers Squibb	25.7
Chevron	46.4		Abbott Laboratories	24.0
Intel	46.4		Danaher	23.0

Figure 2. Companies with most money held offshore in 2016
Source: Cohen (2017)

The chart above, from The New York Times (2017), shows the 30 U.S companies with most offshore holdings in 2016. The top ten leaders are mostly from the IT industry (Apple, Microsoft,

IBM, Cisco, Alphabet) and the pharmaceutical industry (Pfizer, Merck, Johnson & Johnson). The top three companies alone held more than half of the estimated \$1 trillion. One of the problems for companies with foreign cash is that on average it decreases the value of a company compared to domestic cash (Laplante & Nesbitt 2017). Perhaps because shareholders know it cannot be distributed to them.

1.2.1 How have repatriated funds been used

Proponents of the tax law argued that the law would increase domestic investment creating new jobs and increasing wages while opponents argued that it will be a replay of Bush's tax holiday where repatriated cash was used in share buybacks and dividend payments (Stone 2017), but what actually happened? Both (Beyer, Downes, Mathis and Rapley 2019; Bennett, Thakor and Wang 2019) conclude a significant increase in share buybacks. Share buybacks was not the only result of the act, even though it was the most significant. There were also some increases in dividend payouts and U.S capital expenditures but on a lower level. No notable increase in salaries. The increases in share buybacks were mostly explained by the repatriated foreign cash and not by the new lowered tax rate or the new territorial tax system which does not tax foreign earnings. The concern with the new territorial tax system is that it might encourage companies to practice profit shifting.

1.2.2 Profit shifting

Profit shifting is when a multinational corporation tries to increase earnings in a lower taxed regime and decrease earnings in a higher taxed regime to ultimately pay a lower amount of taxes. It is contradictory whether the TCJA will increase or decrease profit shifting. The incentives for profit shifting are reduced due to the lower statutory tax rate in U.S. On the other hand the incentives for profit shifting are increased due to the territorial tax system. In the opinion of Clausing (2020) ultimately the TCJA will reduce profit shifting in tax havens but not completely remove it. She argues that "a per-country minimum tax would have far larger effects".

1.3 Accounting with generally accepted accounting principles

The initial understanding for the author was that the increases in effective tax rates many companies had in 2017 were due to the transition tax. The transition tax would be recorded to income tax expense, debit income tax expense, credit taxes payable. It did not quite add up since

Apple, the king of foreign cash, saw their effective tax rate decrease in the year of the TCJA, even though they were the company with the biggest transition tax fee, \$37.3 billion. The reality is that the deferred tax liabilities are adjusted with the transition tax and if they do not match, adjusting entries are made to income tax expenses. Financial Accounting Standards Board's (FASB) updates and other official accounting instructions were so hard for the author to understand that this information was obtained by analysing financial statements.

1.3.1 Accounting of the transition tax and the federal tax rate

Deferred tax liabilities are unpaid (deferred) tax obligations which have been postponed. In practise, when a company would keep their foreign earnings abroad, they should record the amount of U.S taxes they were able to defer by not repatriating them. The presumption was that companies owe those taxes to the government and would sometime in the future pay them, thus they are recorded as a liability. Foreign earnings indefinitely reinvested would not be recorded as deferred since they are not expected to be repatriated ever.

After the TCJA, foreign earnings would no longer need to be taxed and the liabilities concerning deferred foreign tax payments would no longer be needed. The deferred foreign taxes recorded in the past would now be paid in the form of the transition tax, debit deferred tax liabilities, credit taxes payable. This would explain why Apple did not see their effective tax rate go up after the transition tax, as the balance on their deferred tax liabilities was almost equal to the transition tax they were issued.

Apple's adjustment to the transition tax. Note that TCJA occurred in Apple's fiscal year of 2018

Other Non-Current Liabilities

	2018	2017
Long-term taxes payable	\$ 33,589	\$ 257
Deferred tax liabilities	426	31,504
Other non-current liabilities	11,165	8,654
Total other non-current liabilities	<u>\$ 45,180</u>	<u>\$ 40,415</u>

Figure 3. Apple's Other non-current liabilities in 2018 and 2017

Source: Apple annual report 2018

If the transition tax was higher than the deferred tax liabilities, regarding foreign earnings, the differences would have to be adjusted in income tax expenses. As an example, a hypothetical and simple example is created using a company with a transition tax of 2,000 and deferred tax liabilities of 500 and make the adjustment.

Debit: Deferred tax liabilities 500

Debit: Income tax expenses 1,500

Credit: Taxes payable 2,000

In the example the 1500 which was missing from deferred tax liabilities was adjusted to income tax expenses. Below is how Adobe Inc. adjusted their income tax expenses:

Debit: Deferred tax liabilities \$347 million

Debit: Income tax expense \$176 million

Credit: Taxes payable \$504 million

Credit: Other tax liabilities \$19 million

Figure 4. Adobe's TCJA adjustments

Source: Adobe annual report 2018

The adjustments then get even more complicated as needs to be remembered that the federal statutory rate was decreased amid TCJA from 35% to 21%. If there were deferred tax liabilities, other than related to non-repatriated foreign earnings, created using a tax rate of 35%, they had to be adjusted to represent the new tax rate of 21%. As an example, a domestically operating company not issued a transition tax would record a decrease to the income tax expense. The company would decrease the deferred tax liabilities to represent the new tax rate of 21% and adjust them to the interest tax expenses, debit deferred tax liabilities, credit income tax expense. One of the more prominent examples representing a benefit from the TCJA is AT&T which recorded a net benefit of \$20 billion to its income tax expenses due to the act.

1.3.2 Adjustment problems with GAAP

The adjustments made on deferred tax liabilities and income tax expenses after the TCJA were mainly due to past earnings. According to Bogle (2018), in generally accepted accounting principles (GAAP), "backwards-tracing" is prohibited. Backwards-tracing refers to remeasuring accounts from past fiscal years. If the companies could have remeasured their old accounts, they could have for example, recorded transition tax expenses proportionally to those years where the foreign income, which is now taxed, occurred. Because remeasuring is prohibited, taxes related on past earnings were recorded in 2017, affecting the performance of companies in that year. Whether the TCJA increased or decreased a company's profitability, the investor analysing the company

will have misleading information, unless they are advised enough to account for the changes from TCJA.

Many companies realized that investors might be confused, especially those companies which saw their profitability decrease tried to highlight non-GAAP performance where changes from TCJA were not accounted for. The screenshot below from Microsoft's 2018 annual report informs stakeholders with its TCJA excluded performance under 'Adjusted net income'. However, allowing remeasuring might not have been the sustainable solution for the problem since adjusting accounts from past years up to 1986 would evidently be very time-consuming and expensive, but also complicated, depending on how hard it would have been to access old company records.

Microsoft's adjusted net income. The over \$13 billion difference between net income and adjusted net income is due to TCJA. Note that TCJA occurred in Microsoft's fiscal year of 2018

SUMMARY RESULTS OF OPERATIONS

(In millions, except percentages and per share amounts)	2018	2017	2016	Percentage Change 2018 Versus 2017	Percentage Change 2017 Versus 2016
Revenue	\$ 110,360	\$ 96,571	\$ 91,154	14%	6%
Gross margin	72,007	62,310	58,374	16%	7%
Operating income	35,058	29,025	26,078	21%	11%
Net Income	16,571	25,489	20,539	(35)%	24%
Diluted earnings per share	2.13	3.25	2.56	(34)%	27%
Adjusted operating income	35,058	29,331	27,188	20%	8%
Adjusted net income	30,267	25,732	21,434	18%	20%
Adjusted diluted earnings per share	3.88	3.29	2.67	18%	23%

Consolidated results of operations include LinkedIn results since the date of acquisition on December 8, 2016. Fiscal year 2018 includes a full period of LinkedIn results, whereas fiscal year 2017 only includes results from the date of acquisition.

Adjusted operating income, net income, and adjusted diluted earnings per share ("EPS") exclude the net charge related to the TCJA, and impairment and restructuring expenses. Refer to the Non-GAAP Financial Measures section below for a reconciliation of our financial results reported in accordance with GAAP to non-GAAP financial results.

Figure 5. Microsoft's Summary results of operations in 2018, 2017 and 2016

Source: Microsoft annual report 2018

The logic behind making companies record TCJA-adjustments to the income statement and affect the performance of 2017 seems flawed when the adjustments have nothing to do with how the companies performed in 2017. Perhaps the accounting standards should be changed in a way that adjustments similar to the ones the TCJA created would only be recorded in balance sheet items. For example the adjustments made in income statement could be recorded directly to retained earnings, where they are ultimately transferred from the income statement, so that effective tax rates and profitability remain unaffected.

The companies whose performance suffered due to the TCJA can only blame themselves. In an ideal setting, when companies retained foreign earnings in foreign subsidiaries to avoid U.S federal taxes they should have recorded these earnings in deferred tax liabilities. If they would have, they would have most likely recorded a net benefit to income taxes. To make this easier to understand a hypothetical situation is created of a company with \$1 billion of foreign non-repatriated earnings. With this example a foreign tax rate of 0% is used since foreign taxes are irrelevant because companies received tax credits from paid foreign taxes when foreign earnings were repatriated or when issued a transition tax. From \$1 billion, \$350 million (statutory tax rate of 35%) should have been recorded in deferred tax liabilities. After the TCJA the deferred tax liabilities regarding foreign earnings would be remeasured to \$0 because there is no longer taxes on repatriated earnings. Transition tax is in this case a maximum of \$155 million (rate of 15.5%).

Debit: Deferred tax liabilities \$350million

Credit: Taxes payable \$155 million

Credit: Income tax expense \$195 million

The example company would have recorded a net tax benefit of \$195 million in income taxes in the fiscal year of the TCJA.

Needless to say that companies made foreign investments to some extent and that foreign earnings invested in foreign illiquid assets would not be recorded in deferred tax liabilities as they are not taxed in U.S. For that reason, the transition tax on them was also smaller, a rate of 8%. It is very unlikely that a majority of foreign profits would have been invested to expand foreign operations. It is simply not true as seen in part 1.2 Foreign Cash from the amount of cash, or cash equivalents to be precise, which was held offshores. Who is to blame? It is either accounting principles in use or auditors who in the past let companies seem more profitable by not recording proper tax rates when foreign earnings were not correctly recorded in deferred tax liabilities.

2. CASE STUDY

2.1 Research and data

As the examples in chapter 1 indicate, some companies and their income statements were drastically affected by the consequences of the tax law. The question this paper answers is whether the income statement effects of TCJA were just on individual companies or whether the effect was a widespread one amongst U.S multinationals. The population used in the study is S&P 100 index companies so it will not exactly be able to show the effect on all U.S multinationals but it should at least show the effect on the biggest companies in U.S. To use a population of all U.S multinationals would simply be too time consuming. According to Morningstar (2021) The S&P 100 index represent “almost 45% of the market capitalization of the US equity markets“.

2.1.1 Hypothesis development

The TCJA resulted in one of three, no change, an income tax benefit or an income tax expense. A change in income taxes will result in either a higher or a lower net income. Net income is used to analyse company's profitability. As a result of a change in income tax expense, profitability of a company will ultimately be affected.

Hypothesis 1. *S&P 100 companies had no significant difference in tax rates due to the TCJA.*

Hypothesis 2. *S&P 100 companies had no significant decrease in profitability due to the TCJA.*

If hypothesis 1 is not rejected there is no reason to test hypothesis 2 since if the effect on tax rates is not significant enough, the effect on profitability should not be either.

2.1.2 Sampling

The sample used is a simple random sample of size 41 from the S&P 100 index chosen using random.org's true random number generator. The index has 101 components as Google has two

separate components in the index, Alphabet Class A and Alphabet Class C. The sample size of 41 provides a confidence level of 90% and a margin of error of 10%. Ideally it would be better to have a bigger confidence level and a smaller margin of error but increased accuracy demands a larger sample size. All of the sample data was collected from annual reports of sample companies and might contain non-sampling errors due to manual data collection (see appendices 1 & 2).

2.2 Effective tax rates

Two samples out of 41 reported a loss on their earnings before taxes and thus are not taken into account when it comes to effective tax rates. Only four companies out of the other 39 had no change, or a change of less than one percentage point, in their tax rate. The average tax rate change due to TCJA was 52 percentage points. It is considerable when taking into account that only one of the sample companies, General Motors (55%), would have had a higher effective rate if it was not for TCJA. The average change was highly influenced by one outlier, Charter Communications, which had a 904 percentage point difference in their tax rate due to TCJA. Instead of having an effective rate of 20% on their earnings before taxes of \$1 billion, they actually recorded a tax benefit of \$9.1 billion or a negative tax rate of 884%. When Charter Communications, the only sample company which had a difference of more than 100 percentage points, is removed from the data the average change in tax rates falls to 30%, close to the old statutory rate of 35%.

Depending on whether to include the outlier, Charter Communications, the TCJA either increased or decreased the average effective tax rate. When including Charter Communication the average tax rate decreased from 23% to 11% due to TCJA. When not including Charter Communications the average tax rate increased from 23% to 35%. The average tax rate can also be analysed as if there was only one sample company, sum of all sample companies' taxes divided by sum of all sample companies' earnings before taxes. In that case the average tax rate increased from 23% to 32%.

Figure 1 below lists all sample companies and their actual tax rates versus the tax rates they would have had if it was not for the TCJA. General Electric and Schlumberger are both left blank as they recorded a loss on earnings before taxes. A negative tax rate illustrates a tax benefit. Companies ending with '*' had TCJA in their fiscal year of 2018.

Company	Effective Tax Rate	Rate W/O TCJA	Company	Effective Tax Rate	Rate W/O TCJA
Adobe Inc*	7 %	1 %	Gilead Sciences	66 %	25 %
Amazon	20 %	41 %	Goldman Sachs	61 %	22 %
American Tower	2 %	2 %	Honeywell	75 %	21 %
Amgen Inc	79 %	16 %	Intel Corp	53 %	26 %
Bank of America	38 %	28 %	Lowe's	37 %	37 %
Caterpillar Inc	81 %	23 %	McDonalds Corp	39 %	31 %
Charter Communications	-884 %	20 %	Medtronic plc*	45 %	3 %
Cisco Systems*	99 %	19 %	Microsoft*	55 %	17 %
Comcast corp	-49 %	33 %	PayPal	18 %	10 %
Costco Wholesale Corp*	29 %	28 %	Pepsico	49 %	23 %
Dow Inc	-26 %	21 %	Pfizer Inc	-74 %	13 %
Duke Energy	28 %	26 %	Philip Morris International	42 %	26 %
Eli Lilly and Company	109 %	22 %	Raytheon Technologies	36 %	30 %
Emerson Electric Co*	17 %	24 %	Schlumberger		
Exxon Mobil Corp	-6 %	26 %	Starbucks Corp	22 %	19 %
Facebook Inc	43 %	12 %	The Coca Cola Company	82 %	29 %
FedEx	-5 %	26 %	The Walt Disney Company*	11 %	23 %
Ford Motor Company	6 %	11 %	Walgreens Boots Alliance*	17 %	19 %
General Dynamics	29 %	26 %	Wells Fargo	18 %	32 %
General Electric			Visa Inc*	20 %	19 %
General Motors	150 %	55 %			

Figure 6. Effective tax rates of 2017 versus tax rates without TCJA
Source: prepared by the author

Six companies recorded a tax benefit, but none would have if it was not for TCJA.

2.2.1 Tax rate hypothesis testing

A paired sample t-test was performed to test whether Hypothesis 1 can be rejected. 38 out of 41 samples were included. General Electric and Schlumberger were not included as they had negative earnings before taxes. Charter Communications was not included as it is a clear outlier in the sample.

Effective Tax Rates' t-Test: Two-Sample Assuming Unequal Variances

	Rate Without TCJA	Effective Rate for 2017
Mean	0,228082049	0,34842413
Variance	0,010765968	0,175227249
Observations	38	38
Hypothesized Mean D	0	
df	42	
t Stat	-1,720127991	
P(T<=t) one-tail	0,046385345	
t Critical one-tail	1,302035487	
P(T<=t) two-tail	0,09277069	
t Critical two-tail	1,681952357	

Figure 7. Paired sample t-test for sample tax rates
Source: prepared by the author

The test is a two-tailed test as it is in this case irrelevant whether the tax rate possibly increased or decreased, the change is under observation. The t-statistic (± 1.72) is greater than the t-critical two-tailed value (1.68). The p-value (9.3%) is less than the alpha level (10%). Hypothesis 1 is rejected at the 10% level of significance. S&P 100 companies had a statistically significant difference in tax rates due to the TCJA.

2.3 Profitability

The TCJA had divergent effects on net profit for the sample companies. On average net profit decreased by \$809 million from \$6.7 billion to \$5.9 billion due to TCJA. 12 companies out of 41 recorded a net benefit from TCJA while the other 29 companies recorded a net expense from the act. In the sample the largest recorded net benefit from the act was \$12.7 billion by Comcast Corporation. The largest recorded net expense from the act was \$13.7 billion by Microsoft.

Two companies recorded a net loss due to the TCJA, Eli Lilly and General Motors. Eli Lilly had a net loss of \$205 million and would have had a net profit of \$1.7 billion without the TCJA. General Motors had a net loss of \$3.9 billion instead of a net profit of \$3.4 billion. Other two companies who reported a net loss were General Electric and Schlumberger but they both had a loss on earnings before taxes.

2.3.1 Profitability ratios

Financial ratio analysis can quickly provide an external stakeholder with insight to a company's size, profitability, activity, liquidity and growth. The difference the TCJA had on the sample is analysed by applying commonly used profitability ratios where net profit is the numerator. Return on assets, net profit margin and return on equity are the most commonly used profitability ratios in scientific publications and return on assets is the third most commonly used overall (Siimann 2018).

Return on equity (ROE), net profit divided by average equity, is a financial ratio which demonstrates how well the capital, investors have invested in the company, is generating profits for them. How efficiently the management is using the assets funded by the investors. In the sample two companies were left out of return on equity calculations since they had a negative shareholders' equity, also known as a deficit equity. A negative shareholders' equity occurs when

liabilities exceed assets. The companies left out were McDonalds and Philip Morris. The average ROE would have been 27% without TCJA but in fact was 20%. According to Hargrave (2020), the average ROE for the S&P 500 companies is 14%. Even though TCJA decreased the average ROE by a quarter, the sample companies still performed clearly better than the S&P 500 regarding ROE.

Return on assets (ROA), net profit divided by average total assets, demonstrates how efficiently a company can utilize its assets. How many cents of profit can a company create when investing a dollar into its assets. The average ROA for the sample was 7% versus 9% that it would have been without TCJA, a fairly small difference. The greatest difference was with Coca Cola from a ROA of 73% to 19% percent due to the TCJA.

The endmost goal for every company is to generate profit. Profit margin, net profit divided by net sales, is a good ratio for analyzing whether a company is becoming more efficient or not, since the two simplest ways to increase the profit margin are to either increase sales or to decrease expenses. The average profit margin for the sample was 13% instead of 17%. There was much more fluctuation in the net profit of sample companies than there was in ROA. The average change in profit margin was 7% and the standard deviation was 11% which demonstrates the fluctuation. Coca Cola had an almost identical change in net profit than in ROA, from 74% to 19% but it only shows that their average assets and net sales were almost the same.

2.3.2 Profitability hypothesis testing

A paired sample t-test was performed to test whether Hypothesis 2 can be rejected. All of the sample companies were included.

Profitability t-Test: Two-Sample Assuming Unequal Variances

	<i>Profit Without TCJA</i>	<i>Actual Profit</i>
Mean	6695,313006	5886
Variance	39706847,15	48814601,7
Observations	41	41
Hypothesized Mean μ	0	
df	79	
t Stat	0,550787647	
P(T<=t) one-tail	0,291666763	
t Critical one-tail	1,292359828	
P(T<=t) two-tail	0,583333525	
t Critical two-tail	1,664371409	

Figure 8. Paired sample t-test for sample profitability

Source: prepared by the author

Even though the mean profitability decreased by 12%, the decrease was not statistically significant. The test is a one-tailed test as it only matters whether the profitability decreased or not. The t-statistic (0.55) is less than the t-critical one-tailed value (1.29). The p-value (29%) is greater than the alpha level (10%). Hypothesis 2 cannot be rejected.

CONCLUSION

After a decade-long accumulation of cash in foreign subsidiaries, the Trump administration passed the Tax Cuts and Jobs act of 2017. The taxation of foreign earnings was significantly changed when repatriation taxes were removed. All U.S. companies with past non-repatriated foreign earnings were issued a transition tax on those earnings. The transition tax was recorded in the same fiscal year it was issued. Some companies had a positive income statement effect while some had a negative one.

The generally accepted accounting principles forced companies to record adjusting entries to income tax expense of 2017 which then had a direct effect on tax rate and indirect effect on profitability. Whether the net profit experienced a positive or a negative change, the change resulted from past earnings and gives stakeholders an inaccurate picture of 2017 performance. Companies who were negatively affected most likely failed to accurately account for foreign earnings in the past. In any case, external stakeholders might find themselves struggling if trying to analyse performance of U.S. multinational companies in 2017.

The main objective of the study was to discover whether a TCJA driven change in tax rates and profitability was common or uncommon. The changes in effective tax rate and net profit were taken from annual reports of sample companies. The population studied was the S&P 100 index companies.

There were changes to tax rates in one direction and the other. With this data it is impossible to say whether on average tax rates were increased or decreased as one outlier can make the difference. What can be concluded is that there was a statistically significant change in tax rates due to the act. With profitability the case is the opposite. Even though the average profitability decreased by 12%, there was no statistically significant decrease in profitability.

For the moment there is no need for further studies on the topic as it is becoming more irrelevant as years pass. The Trump administration passed the tax act after one year in office. That being said,

it would not be surprising if the Biden administration is planning on a contrary tax law as we speak. If there is a new tax law under development, there should be more consideration on the accounting side of things.

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APPENDICES

Appendix 1. Tax rates

	EBT	IT	TCJA effect	Tax on revenue	Effective Rate	Rate W/O TCJA	Change in rate
Adobe Inc*	\$ 2 794	\$ 203	\$ 186	\$ 17	7 %	1 %	7 %
Amazon	\$ 3 802	\$ 769	\$ -789	\$ 1 558	20 %	41 %	21 %
American Tower	\$ 1 256	\$ 31	\$ 2	\$ 29	2 %	2 %	0 %
Amgen Inc	\$ 9 597	\$ 7 618	\$ 6 100	\$ 1 518	79 %	16 %	64 %
Bank of America	\$ 29 213	\$ 10 981	\$ 2 900	\$ 8 081	38 %	28 %	10 %
Caterpillar Inc	\$ 4 063	\$ 3 309	\$ 2 371	\$ 938	81 %	23 %	58 %
Charter Communications	\$ 1 028	\$ -9 087	\$ -9 293	\$ 206	-884 %	20 %	904 %
Cisco Systems*	\$ 13 039	\$ 12 929	\$ 10 400	\$ 2 529	99 %	19 %	80 %
Comcast Corp	\$ 15 322	\$ -7 578	\$ -12 700	\$ 5 122	-49 %	33 %	83 %
Costco Wholesale Corp*	\$ 4 397	\$ 1 263	\$ 19	\$ 1 244	29 %	28 %	0 %
Dow Inc	\$ 2 310	\$ -602	\$ -1 086	\$ 484	-26 %	21 %	47 %
Duke Energy	\$ 4 260	\$ 1 196	\$ 102	\$ 1 094	28 %	26 %	2 %
Eli Lilly and Company	\$ 2 197	\$ 2 402	\$ 1 910	\$ 492	109 %	22 %	87 %
Emerson Electric Co*	\$ 2 667	\$ 443	\$ -189	\$ 632	17 %	24 %	7 %
Exxon Mobil Corp	\$ 18 674	\$ -1 174	\$ -5 942	\$ 4 768	-6 %	26 %	32 %
Facebook Inc	\$ 7 462	\$ 3 194	\$ 2 273	\$ 921	43 %	12 %	30 %
FedEx	\$ 4 353	\$ -219	\$ -1 357	\$ 1 138	-5 %	26 %	31 %
Ford Motor Company	\$ 8 148	\$ 520	\$ -398	\$ 918	6 %	11 %	5 %
General Dynamics	\$ 4 077	\$ 1 165	\$ 119	\$ 1 046	29 %	26 %	3 %
General Electric	\$ -8 791	\$ -3 043	\$ 3 325	\$ -6 368	0 %	0 %	0 %
General Motors	\$ 7 669	\$ 11 533	\$ 7 300	\$ 4 233	150 %	55 %	95 %
Gilead Sciences	\$ 13 529	\$ 8 885	\$ 5 500	\$ 3 385	66 %	25 %	41 %
Goldman Sachs	\$ 11 132	\$ 6 846	\$ 4 400	\$ 2 446	61 %	22 %	40 %
Honeywell	\$ 6 902	\$ 5 204	\$ 3 755	\$ 1 449	75 %	21 %	54 %
Intel Corp	\$ 20 352	\$ 10 751	\$ 5 400	\$ 5 351	53 %	26 %	27 %
Lowe's	\$ 5 489	\$ 2 042	\$ 20	\$ 2 022	37 %	37 %	0 %
McDonalds Corp	\$ 8 573	\$ 3 381	\$ 700	\$ 2 681	39 %	31 %	8 %
Medtronic plc*	\$ 5 684	\$ 2 580	\$ 2 400	\$ 180	45 %	3 %	42 %
Microsoft*	\$ 36 474	\$ 19 903	\$ 13 700	\$ 6 203	55 %	17 %	38 %
PayPal	\$ 2 200	\$ 405	\$ 180	\$ 225	18 %	10 %	8 %
Pepsico	\$ 9 551	\$ 4 694	\$ 2 451	\$ 2 243	49 %	23 %	26 %
Pfizer Inc	\$ 12 305	\$ -9 049	\$ -10 660	\$ 1 611	-74 %	13 %	87 %
Philip Morris International	\$ 10 342	\$ 4 307	\$ 1 600	\$ 2 707	42 %	26 %	15 %
Raytheon Technologies	\$ 3 115	\$ 1 114	\$ 171	\$ 943	36 %	30 %	5 %
Schlumberger	\$ -1 183	\$ 330	\$ 76	\$ 254	0 %	0 %	0 %
Starbucks Corp	\$ 5 780	\$ 1 262	\$ 160	\$ 1 102	22 %	19 %	3 %
The Coca Cola Company	\$ 6 808	\$ 5 560	\$ 3 600	\$ 1 960	82 %	29 %	53 %
The Walt Disney Company*	\$ 14 729	\$ 1 663	\$ -1 700	\$ 3 363	11 %	23 %	12 %
Walgreens Boots Alliance*	\$ 5 975	\$ 998	\$ -125	\$ 1 123	17 %	19 %	2 %
Wells Fargo	\$ 27 377	\$ 4 917	\$ -3 713	\$ 8 630	18 %	32 %	14 %
Visa Inc*	\$ 12 806	\$ 2 505	\$ 14	\$ 2 491	20 %	19 %	0 %

Appendix 2. Profitability

	EBT	IT	Profit	Profit W/O TCJA	Average Equity	Average Assets	Net Sales
Adobe Inc*	\$ 2 794	\$ 203	\$ 2 591	\$ 2 777	\$ 8 911	\$ 16 652	\$ 9 030
Amazon	\$ 3 802	\$ 769	\$ 3 033	\$ 2 244	\$ 23 497	\$ 107 356	\$ 177 866
American Tower	\$ 1 256	\$ 31	\$ 1 225	\$ 1 227	\$ 6 503	\$ 32 047	\$ 6 664
Amgen Inc	\$ 9 597	\$ 7 618	\$ 1 979	\$ 8 079	\$ 27 558	\$ 78 790	\$ 22 849
Bank of America	\$ 29 213	\$ 10 981	\$ 18 232	\$ 21 132	\$ 266 671	\$ 2 234 651	\$ 87 352
Caterpillar Inc	\$ 4 063	\$ 3 309	\$ 754	\$ 3 125	\$ 13 490	\$ 75 833	\$ 45 462
Charter Communications	\$ 1 028	\$ -9 087	\$ 10 115	\$ 822	\$ 48 949	\$ 147 845	\$ 41 581
Cisco Systems*	\$ 13 039	\$ 12 929	\$ 110	\$ 10 510	\$ 54 671	\$ 119 301	\$ 49 330
Comcast Corp	\$ 15 322	\$ -7 578	\$ 22 900	\$ 10 200	\$ 62 812	\$ 183 725	\$ 84 526
Costco Wholesale Corp*	\$ 4 397	\$ 1 263	\$ 3 134	\$ 3 153	\$ 11 789	\$ 38 589	\$ 141 576
Dow Inc	\$ 2 310	\$ -602	\$ 2 912	\$ 1 826	\$ 64 578	\$ 135 838	\$ 62 484
Duke Energy	\$ 4 260	\$ 1 196	\$ 3 064	\$ 3 166	\$ 41 386	\$ 135 338	\$ 23 565
Eli Lilly and Company	\$ 2 197	\$ 2 402	\$ -205	\$ 1 705	\$ 12 875	\$ 41 894	\$ 22 871
Emerson Electric Co*	\$ 2 667	\$ 443	\$ 2 224	\$ 2 035	\$ 8 880	\$ 19 990	\$ 17 408
Exxon Mobil Corp	\$ 18 674	\$ -1 174	\$ 19 848	\$ 13 906	\$ 184 165	\$ 339 503	\$ 244 363
Facebook Inc	\$ 7 462	\$ 3 194	\$ 4 268	\$ 6 541	\$ 66 771	\$ 74 743	\$ 12 972
FedEx	\$ 4 353	\$ -219	\$ 4 572	\$ 3 215	\$ 17 745	\$ 50 441	\$ 65 450
Ford Motor Company	\$ 8 148	\$ 520	\$ 7 628	\$ 7 230	\$ 32 053	\$ 247 880	\$ 156 776
General Dynamics	\$ 4 077	\$ 1 165	\$ 2 912	\$ 3 031	\$ 10 868	\$ 34 109	\$ 30 973
General Electric	\$ -8 791	\$ -3 043	\$ -5 748	\$ -2 423	\$ 79 739	\$ 371 564	\$ 122 092
General Motors	\$ 7 669	\$ 11 533	\$ -3 864	\$ 3 436	\$ 40 138	\$ 217 086	\$ 145 588
Gilead Sciences	\$ 13 529	\$ 8 885	\$ 4 644	\$ 10 144	\$ 19 932	\$ 63 630	\$ 26 107
Goldman Sachs	\$ 11 132	\$ 6 846	\$ 4 286	\$ 8 686	\$ 84 568	\$ 888 471	\$ 32 073
Honeywell	\$ 6 902	\$ 5 204	\$ 1 698	\$ 5 453	\$ 18 493	\$ 56 767	\$ 40 534
Intel Corp	\$ 20 352	\$ 10 751	\$ 9 601	\$ 15 001	\$ 67 623	\$ 118 288	\$ 62 761
Lowe's	\$ 5 489	\$ 2 042	\$ 3 447	\$ 3 467	\$ 6 154	\$ 34 850	\$ 68 619
McDonalds Corp	\$ 8 573	\$ 3 381	\$ 5 192	\$ 5 892	\$ -2 736	\$ 32 414	\$ 22 820
Medtronic plc*	\$ 5 684	\$ 2 580	\$ 3 104	\$ 5 504	\$ 50 576	\$ 95 625	\$ 29 953
Microsoft*	\$ 36 474	\$ 19 903	\$ 16 571	\$ 30 271	\$ 85 215	\$ 254 580	\$ 110 360
PayPal	\$ 2 200	\$ 405	\$ 1 795	\$ 1 975	\$ 15 353	\$ 36 939	\$ 13 094
Pepsico	\$ 9 551	\$ 4 694	\$ 4 857	\$ 7 308	\$ 11 090	\$ 76 647	\$ 63 525
Pfizer Inc	\$ 12 305	\$ -9 049	\$ 21 354	\$ 10 694	\$ 65 748	\$ 171 706	\$ 52 546
Philip Morris International	\$ 10 342	\$ 4 307	\$ 6 035	\$ 7 635	\$ -10 230	\$ 39 910	\$ 78 098
Raytheon Technologies	\$ 3 115	\$ 1 114	\$ 2 001	\$ 2 172	\$ 10 060	\$ 30 549	\$ 25 348
Schlumberger	\$ -1 183	\$ 330	\$ -1 513	\$ -1 437	\$ 38 960	\$ 74 972	\$ 30 440
Starbucks Corp	\$ 5 780	\$ 1 262	\$ 4 518	\$ 4 678	\$ 3 317	\$ 19 261	\$ 24 720
The Coca Cola Company	\$ 6 808	\$ 5 560	\$ 1 248	\$ 4 848	\$ 2 941	\$ 6 598	\$ 6 522
The Walt Disney Company*	\$ 14 729	\$ 1 663	\$ 13 066	\$ 11 366	\$ 48 918	\$ 97 194	\$ 59 434
Walgreens Boots Alliance*	\$ 5 975	\$ 998	\$ 4 977	\$ 4 852	\$ 26 737	\$ 67 067	\$ 131 537
Wells Fargo	\$ 27 377	\$ 4 917	\$ 22 460	\$ 18 747	\$ 204 288	\$ 1 940 936	\$ 97 741
Visa Inc*	\$ 12 806	\$ 2 505	\$ 10 301	\$ 10 315	\$ 33 383	\$ 68 601	\$ 20 609

Appendix 3. Profitability ratios

	ROE	ROE TCJA	ROA	ROA TCJA	Profit Margin	Profit M TCJA
Adobe Inc*	29 %	31 %	16 %	17 %	29 %	31 %
Amazon	13 %	10 %	3 %	2 %	2 %	1 %
American Tower	19 %	19 %	4 %	4 %	18 %	18 %
Amgen Inc	7 %	29 %	3 %	10 %	9 %	35 %
Bank of America	7 %	8 %	1 %	1 %	21 %	24 %
Caterpillar Inc	6 %	23 %	1 %	4 %	2 %	7 %
Charter Communications	21 %	2 %	7 %	1 %	24 %	2 %
Cisco Systems*	0 %	19 %	0 %	9 %	0 %	21 %
Comcast Corp	36 %	16 %	12 %	6 %	27 %	12 %
Costco Wholesale Corp*	27 %	27 %	8 %	8 %	2 %	2 %
Dow Inc	5 %	3 %	2 %	1 %	5 %	3 %
Duke Energy	7 %	8 %	2 %	2 %	13 %	13 %
Eli Lilly and Company	-2 %	13 %	0 %	4 %	-1 %	7 %
Emerson Electric Co*	25 %	23 %	11 %	10 %	13 %	12 %
Exxon Mobil Corp	11 %	8 %	6 %	4 %	8 %	6 %
Facebook Inc	6 %	10 %	6 %	9 %	33 %	50 %
FedEx	26 %	18 %	9 %	6 %	7 %	5 %
Ford Motor Company	24 %	23 %	3 %	3 %	5 %	5 %
General Dynamics	27 %	28 %	9 %	9 %	9 %	10 %
General Electric	-7 %	-3 %	-2 %	-1 %	-5 %	-2 %
General Motors	-10 %	9 %	-2 %	2 %	-3 %	2 %
Gilead Sciences	23 %	51 %	7 %	16 %	18 %	39 %
Goldman Sachs	5 %	10 %	0 %	1 %	13 %	27 %
Honeywell	9 %	29 %	3 %	10 %	4 %	13 %
Intel Corp	14 %	22 %	8 %	13 %	15 %	24 %
Lowe's	56 %	56 %	10 %	10 %	5 %	5 %
McDonalds Corp			16 %	18 %	23 %	26 %
Medtronic plc*	6 %	11 %	3 %	6 %	10 %	18 %
Microsoft*	19 %	36 %	7 %	12 %	15 %	27 %
PayPal	12 %	13 %	5 %	5 %	14 %	15 %
Pepsico	44 %	66 %	6 %	10 %	8 %	12 %
Pfizer Inc	32 %	16 %	12 %	6 %	41 %	20 %
Philip Morris International			15 %	19 %	8 %	10 %
Raytheon Technologies	20 %	22 %	7 %	7 %	8 %	9 %
Schlumberger	-4 %	-4 %	-2 %	-2 %	-5 %	-5 %
Starbucks Corp	136 %	141 %	23 %	24 %	18 %	19 %
The Coca Cola Company	42 %	165 %	19 %	73 %	19 %	74 %
The Walt Disney Company*	27 %	23 %	13 %	12 %	22 %	19 %
Walgreens Boots Alliance*	19 %	18 %	7 %	7 %	4 %	4 %
Wells Fargo	11 %	9 %	1 %	1 %	23 %	19 %
Visa Inc*	31 %	31 %	15 %	15 %	50 %	50 %

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