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An Updated Analysis of Corporate Behavior and the Tax Cuts and Jobs Act

Nicholas H. Cohen & Manoj Viswanathan

This update to our April 2020 Essay extends our earlier study by (1) adding data from corporate filings released in early 2020 to include effective tax rate numbers from 2019 and (2) expanding our analysis to include all members of the S&P 500 that meet the criteria described in our original Essay. This expanded data set did not materially change our earlier conclusions. For this update we considered the same twelve dependent variables as previously investigated (number of employees, dividends paid, capital expenditures, cash flow from operations, market value, capital expenditure ratio, research and development ratio, EBIT, EBITDA, total executive compensation, CEO compensation, and total value of shares repurchased) and found no statistically significant relationship between any dependent variable and change in a corporation's effective tax rate.

The effects of COVID-19 preclude extending our study for additional years of data beyond 2019. The economic consequences of the global pandemic and the government responses to mitigate them will affect corporate profitability, taxation, and behavior in ways that will mask the TCJA's effects. Though the massive, global shock of COVID-19 will eliminate any ability to isolate the TCJA's possible effects (positive or negative), the adverse effects of the TCJA on the United States federal budget will, of course, remain.

* * *

The Tax Cuts and Jobs Act of 2017 (the "TCJA") fundamentally altered United States tax law. Among other things, it broadly decreased income tax rates paid by individuals and corporations, eliminated miscellaneous itemized deductions, limited the state and local tax deduction, increased the standard deduction, reduced the alternative minimum tax for individuals and eliminated it entirely for corporations, and allowed a deduction for certain pass-through business income.

TCJA proponents, generally Republicans, claimed that its \$1.5 trillion of tax cuts would result in significant economic benefits. In particular, TCJA supporters believed that the tax benefits afforded U.S. corporations,² most notably the reduction in rate from 35 percent to 21 percent, would incentivize corporations to use their additional after-tax cash in ways generally beneficial to the U.S. economy. Predicted indicia of these salutary effects included increases in the rate growth of gross domestic product, increased national capital stock, and significant increases to workers' wages. TCJA opponents instead expected its benefits to inure almost entirely to a small group of investors and corporate managers. Many critics (generally Democrats and deficit hawks) considered the TCJA a distributionally unsound way to allocate such a significant tax cut.

Corporations have operated for nearly two years under this new corporate tax regime. Their most recent annual corporate filings provide information from the first full calendar year in which the TCJA's provisions are in full effect. These reports contain information on effective tax rate, capital expenditures, CEO

compensation, and other important metrics of corporate activity and productivity. From this data we can analyze the preliminary effects the TCJA has had on these corporations and assess the extent to which claims made by the TCJA's proponents on corporate behavior have been borne out. While other studies have considered the TCJA's effect on specific corporate attributes, this Essay is the first to assess the TCJA's effect on a range of corporate behaviors by using recently filed, publicly available data on a granular, corporation-by-corporation basis.

Specifically, our study assesses the extent to which changes in effective tax rates for the top cohort of companies in the Standard & Poor's 500 index (S&P 500) relate to a variety of corporate behaviors purportedly affected by the TCJA.³ Our results indicate that the TCJA's reduction in effective tax rate had zero relationship to number of employees; dividends paid; capital expenditures; cash flow from operations; market value; capital expenditure ratio; research and development ratio; earnings before interest and taxes (EBIT); earnings before interest, taxes, depreciation and amortization (EBITDA); and total executive compensation. Our study indicates that the TCJA's reduction in effective tax rate has a small relationship to CEO compensation and total value of shares repurchased. Although the effects (or non-effects) of the TCJA may not be known for years, our study indicates that the anticipated economic benefits of the TCJA due to its changes to effective corporate tax rate have yet to be observed. Indeed, the reduced effective corporate tax rates might promote certain less desirable corporate behaviors, such as increased CEO compensation and increased numbers of stock shares repurchased.

This Essay proceeds in four parts. Part I describes how the TCJA modified the corporate income tax code and details the purported economic benefits of the TCJA, focusing on claims that were made just prior to the TCJA's passage. Part II describes our study's methodology, presents our statistical results, and discusses limitations to our analysis. Part III discusses the implications of our study on the economics of corporate tax rates. The Appendix includes a full description of our methodology.

* * *

I. TCJA Changes to Corporate Taxation and Predicted Economic Effects

The TCJA made many important changes to U.S. corporate income tax law. Most fundamentally, the TCJA reduced the statutory rate on all corporate income to a flat 21 percent from a previous top marginal rate of 35 percent. Beyond reducing the statutory rate, the TCJA also affected several other provisions relevant for corporations, including those concerning earnings stripping, expensing and depreciating, net operating losses, and the taxation of foreign subsidiaries.⁴ In addition, it created a global intangible low-taxed income (GILTI) regime⁵ and the foreign-derived intangible income (FDII) deduction.⁶

These TCJA provisions influence corporations in various ways. The specific operations of a particular business affect the tax benefits (or penalties) to which the business might be subjected. A corporation with little foreign operations, for instance, will have little use for the FDII deduction. In the aggregate, however, the TCJA is unequivocally corporation-friendly: it generally reduces the taxes paid by corporations despite an increase in corporate profits. This reduction in corporate tax liability was marketed by TCJA supporters as a necessary stimulus for the U.S. economy.

TCJA proponents expected that corporations paying lower taxes would have greater access to cash flows. These cash flows could be deployed to invest in capital expenditures, such as research, development, and upgraded plants and equipment. These investments would result in a boom of productivity, increasing the marginal value created by each employee. This, in turn, would cause increased hiring of new employees and increased compensation for existing employees. Proponents also expected that corporations would take advantage of decreased repatriation taxes to “onshore” cash previously held in foreign subsidiaries; this would create beneficial effects similar to the decreased corporate income tax rate.

Proponents also expected that investor behavior would change in ways that were beneficial to the general economy. The assumption inherent in this view is that investors have a largely constant expectation of after-tax returns on deployed capital for a given level of risk asset. Decreasing the corporate tax rate would, therefore, increase the supply of capital, as more investment opportunities would offer the desired after-tax return on investment. Similar to the actions of corporations, this would result in increased capital expenditures, eventually increasing employment levels and average incomes via the same path.

Trump administration officials and other prominent Republicans frequently reiterated these purported economic benefits of the TCJA. Senate Majority Leader Mitch McConnell predicted that the economic growth catalyzed by the tax cuts would result in the bill’s revenue neutrality. Former House Speaker Paul Ryan stated that the corporate tax cuts would lead directly to the creation of new jobs, and not to corporations redistributing the newfound cash to shareholders. Kevin Hassett, Chairman of the Council of Economic Advisers, claimed that the reduced corporate income rate and expanded expensing provisions would promote higher wages to workers and increased capital expenditures. And last but not least, President Donald Trump promised that the TCJA would result in more American jobs, bigger paychecks for workers, repatriation of trillions of dollars of corporate cash, a rocket-fueled economy, and a one-page tax filing for the vast majority of taxpayers.

* * *

II. Effect of Tax Rate Reductions on Corporate Behaviors

Our analysis considers the natural experiment engendered by the passage of the TCJA. It compares the change in effective tax rate and its relationship on

measurable corporate behavior as reported in the first set of post-TCJA 10-K filings. (The Securities and Exchange Commission requires all corporations with publicly offered equity, as well as corporations meeting other criteria, to file 10-K forms each year.) The complexity of corporate tax laws ensures a dramatic divergence between the statutory corporate tax rate of 21 percent and effective corporate tax rates, where effective rate is defined as total worldwide taxes divided by total worldwide earnings. Some of these divergences are related to identifiable corporate features (such as industry group), but others are unique to a corporation's specific tax situation. This tax rate divergence ensures that corporations have experienced vastly different consequences from the TCJA. Companies already paying little tax, for example, would see almost no rate reduction from the TCJA. In contrast, corporations paying the maximum pre-TCJA statutory rate of 35 percent are nearly guaranteed to see large reductions in effective tax rate. Proponents of the TCJA would expect these more affected corporations to take the actions described previously, thereby creating positive externalities for the U.S. economy. Corporations with little reduction in effective tax rate would not be expected to change their actions. If these actions are a function of their respective corporations' change in tax rate, this would indicate the TCJA is affecting corporate behaviors.

We considered the one hundred companies with the largest weightings in the S&P 500, excluding financial companies, as well as certain firms that had not published 2018 annual results at the time of the study. We also excluded outlier companies with an unusually large relative tax benefit, with a tax rate greater than 75 percent, or with an absolute value of change in deferred income tax of at least \$15 billion between 2017 and 2018. This left ninety-one companies within our study.

To represent the period before the passage of the TCJA, we considered both the change in effective tax rate from 2017 alone, as well as the change in effective tax rate using an average from years 2015, 2016, and 2017 as the base year. These relative changes in effective tax rate were then compared to several dependent variables to determine the effect, if any, on corporate behavior. The twelve dependent variables against which the change in effective tax rate were tested are (1) number of employees; (2) dividends paid; (3) capital expenditures; (4) cash flow from operations; (5) market value; (6) capital expenditure ratio; (7) research and development ratio; (8) EBIT; (9) EBITDA; (10) total executive compensation; (11) CEO compensation; and (12) total value of shares repurchased. We used three control variables in the study: corporate market capitalization, number of employees, and tax rate.

As expected, the effective income tax rate decreased significantly within our group of corporations. Using the single year base of 2017, the mean and median decrease in effective tax rate was 5.8 percent and 4.5 percent, respectively, with 71 of 91 companies reporting a decrease in effective tax rate. Using the multi-year base of years 2015–2017, the mean and median decrease was even larger, 9.8 percent and 8.0 percent, respectively, with 72 of 91 companies experiencing a relative

decrease in tax rate. The summary statistics for the corporate behaviors studied are contained in Tables 1 and 2 of the [Appendix](#).

Our analysis revealed that few corporate behaviors were affected by change in effective tax rate to a statistically significant degree. This includes two specific corporate behaviors, number of employees and capital expenditure ratio, which TCJA proponents indicated would change due to decreased corporate tax rates. The only dependent variables showing any statistical significance are CEO compensation, using the single base year of 2017, and total value of shares repurchased, using the 2015–2017 average. This implies that the decrease in effective corporate tax rate bears some relationship—though likely not a causal relationship—to both increased CEO compensation and total value of shares repurchased.

While our study has shown no evidence of widespread benefits of any kind resulting changes in corporate behaviors due to changes in effective corporate tax rates, there are limitations to our analysis. We focused on only the largest, publicly-listed U.S. corporate entities. It is possible that smaller companies or private companies might behave differently than the corporations in our sample set. In addition, as this study was intended as a survey, we did not analyze sub-samples, such as industry type; as such, there may be ways to further parse the data that could return different results. Also, our study considers only one year after the passage of the TCJA, which may be too brief of a period for corporations to take action due to decreased tax rates. Finally, different corporations could make accounting decisions that render comparisons of the type included here imperfect; it is possible that different methods of managing data would produce different conclusions.

* * *

III. Rationales for Corporate Behaviors (and Non-Behaviors)

Our analysis indicates that post-TCJA corporate behavior accords little with what TCJA proponents predicted. The reasons for this lack of observed corporate behavior due to changes in effective tax rate are far from clear, but potential explanations can be posited.

Even before its passage, opponents of the legislation expressed strong reasons to believe that corporations would do little with their tax savings other than returning it to investors in the form of stock buybacks or overcompensating management. Corporations have many sources of cash other than after-tax earnings. Total checkable deposits and currency on non-financial corporate balance sheets as of the first quarter of 2019 ~~total~~ approximately \$926 billion. In addition, as of February 2020, highly rated “AA” companies could borrow funds at an effective interest rate of approximately 2.1 percent; even corporations that borrow in the higher-yielding “junk bond market” (rating “BB”) had an approximate average interest rate of only 3.7 percent. If corporations already have vast access to cash

reserves that they were not investing, the relatively smaller, additional cash flow from tax savings is unlikely to be significantly invested in company operations.

There was historical precedent that the repatriation holiday would produce little benefit. A similar measure was attempted through the American Jobs Creation Act (AJCA) of 2004; but few corporations took advantage of the provision at the time. The ACJA also created a perverse, long-term disincentive for corporations to repatriate future earnings due to expectations of future one-time tax cuts, which was one reason why corporate assets in extraterritorial subsidiaries had greatly increased in the interim. The similarity between the repatriation provisions of the AJCA and the TCJA could be expected to produce similar results.

Other theories could explain why TCJA provisions affecting investor tax liabilities would not positively affect the economy via increased worker wages or increased capital expenditures. Macroeconomics dictates that, in an economy closed to foreign investment, savings must equal investment. By virtue of this “savings identity,” for total invested capital to increase in an economy, the savings rate must increase. The likely source for this increase is decreased consumption. However, this decreased consumption diminishes economic output, offsetting the benefits of increased investment. In the medium term, efficiency gains resulting from investment could outweigh the short-term drag caused by this decreased consumption. However, in the first eighteen months after its passage, the increased capital expenditures included in rosy projections of the TCJA’s effects have not materialized.

The savings identity argument against the TCJA could, potentially, be mitigated by the fact that the United States is not a closed economy. Capital can travel almost freely into the United States from many other countries. It is possible that the newly decreased corporate tax rate would result in greatly increased foreign investment in the United States, creating productivity gains without domestic consumption loss. However, if the equilibrium level of after-tax return on investment is roughly fixed (an assumption of TCJA proponents, as discussed above), then cross-border investment opportunities are correspondingly limited. Our analysis reveals no evidence of an increase in net foreign capital flows since the passage of the TCJA.

* * *

Conclusion

Despite a decline in effective tax rate that is, on average, approximately five percent from the year preceding the TCJA, and ten percent from years 2015–2017, there are few indicia of the corporate-investment-led economic boom predicted by Trump administration officials. While it is difficult to definitively know why corporations have not significantly reinvested their tax savings in their employees, property, plants, or equipment, we have identified economic theories that predict such a lack of activity. Should further studies find similar results, they will support theories predicting that the incidence of corporate taxation falls mainly upon

investors (as opposed to employees or customers), and that investor behavior is largely inelastic with respect to moderate changes in tax rates.

The TCJA cut taxes by \$1.5 trillion and in the process conferred significant tax benefits on U.S. corporations. Unlike the predictions of the TCJA's proponents, economic growth has shown no sign of increasing nearly to the extent necessary for the tax cut to pay for itself. In addition to increases in discretionary spending passed shortly after the TCJA, the United States now faces the largest federal budget deficit it has ever experienced during a period of peace and economic growth. While the long-term impacts of fiscal profligacy are as uncertain as the tax policy effects on economic growth, we should expect that such a sizable reduction in federal tax revenue comes with some economic benefits to offset the burden of increased debt. Based on our study, we have not found any such benefits in the post-TCJA behavior of U.S. corporations.

* * *

Nicholas Cohen is the Founder and Principal of LobbySeven LLC, where he regularly publishes on fiscal policy through a quantitative lens. Manoj Viswanathan is an Associate Professor of Law at the University of California, Hastings College of the Law. Thanks to Amrita Sethi for outstanding research assistance.

Appendix (updated July 2020)

This Appendix describes the methodology of our most recent analysis, highlighting changes between our initial, April 2020 Essay and this analysis. We note at the outset that our general approach did not change appreciably.

In order to include a larger sample and to address potential behavioral differences among company sizes, we have increased our sample universe to include all the members of the Standard & Poor's 500 index. We have again excluded financial companies (GICS sector 40), leaving a potential universe of 438 companies.

We have included the additional year of tax data (2019) obtained from the most recently filed corporate financial statements. As in our April 2020 Essay, we have considered base periods of both the single year 2017, as well as the average of the years 2015, 2016, and 2017. For the post-TCJA period, we considered both 2019 and an average of 2018 and 2019; we also updated our previous study using only 2018 as the post-TCJA period in order to see any effect due the expanded universe of companies as well as include possible restated financial information.

As in our previous essay, we removed from our analysis any companies with extreme tax situations, defined as an effective tax rate of either greater than 75 percent or less than negative 50 percent (i.e., a large tax benefit). This resulted in a final universe of 293 corporations. However, not all corporations report relevant data for all our independent variables; each regression therefore includes a subset of this larger universe.

Our data is below.

Summary Data

Variable	Start Period	End Period	N	Mean	StDev	Min	Median	Max
NumEmployees	2017	2018	290	0.05	0.13	-0.46	0.03	0.81
NumEmployees	2017	2019	290	0.09	0.21	-0.63	0.06	0.99
NumEmployees	2017	2018-2019	290	0.07	0.15	-0.52	0.05	0.84
NumEmployees	2015-2017	2018	285	0.10	0.20	-0.58	0.07	0.95
NumEmployees	2015-2017	2019	285	0.14	0.28	-0.67	0.09	1.46
NumEmployees	2015-2017	2018-2019	285	0.12	0.23	-0.59	0.10	1.20
Dividends	2017	2018	226	0.13	0.28	-0.98	0.09	2.93
Dividends	2017	2019	226	0.28	0.69	-0.73	0.17	8.07
Dividends	2017	2018-2019	226	0.21	0.47	-0.78	0.13	5.50
Dividends	2015-2017	2018	220	0.22	0.39	-0.93	0.17	3.23
Dividends	2015-2017	2019	220	0.40	0.93	-0.72	0.26	9.54
Dividends	2015-2017	2018-2019	220	0.31	0.64	-0.67	0.21	6.06
Capex	2017	2018	291	0.18	0.35	-0.61	0.12	3.18
Capex	2017	2019	291	0.28	0.60	-0.60	0.16	6.51
Capex	2017	2018-2019	291	0.23	0.45	-0.50	0.17	4.85
Capex	2015-2017	2018	291	0.22	0.39	-0.80	0.17	2.04
Capex	2015-2017	2019	291	0.31	0.57	-0.73	0.19	3.96
Capex	2015-2017	2018-2019	291	0.27	0.45	-0.73	0.21	2.86
Cash from Operations	2017	2018	286	0.21	0.62	-0.69	0.13	7.59
Cash from Operations	2017	2019	283	0.30	0.61	-0.62	0.22	6.09
Cash from Operations	2017	2018-2019	283	0.26	0.58	-0.56	0.17	6.22
Cash from Operations	2015-2017	2018	283	0.24	0.38	-0.79	0.20	2.16
Cash from Operations	2015-2017	2019	280	0.34	0.42	-0.61	0.28	1.87
Cash from Operations	2015-2017	2018-2019	280	0.29	0.36	-0.70	0.24	1.78
Total Market Value	2017	2018	290	-0.03	0.20	-0.55	-0.04	0.82
Total Market Value	2017	2019	290	0.22	0.38	-0.61	0.18	2.28
Total Market Value	2017	2018-2019	290	0.09	0.27	-0.58	0.08	1.36

Total Market Value	2015-2017	2018	288	0.11	0.29	-0.58	0.08	1.63
Total Market Value	2015-2017	2019	288	0.41	0.51	-0.60	0.34	3.76
Total Market Value	2015-2017	2018-2019	288	0.26	0.38	-0.57	0.21	2.49
CapexRatio	2017	2018	286	-1.00	0.02	-1.20	-1.00	-0.90
CapexRatio	2017	2019	283	-1.00	0.03	-1.12	-1.00	-0.80
CapexRatio	2017	2018-2019	283	-1.00	0.02	-1.10	-1.00	-0.88
CapexRatio	2015-2017	2018	283	-1.00	0.03	-1.14	-1.00	-0.82
CapexRatio	2015-2017	2019	280	-1.00	0.04	-1.14	-1.00	-0.59
CapexRatio	2015-2017	2018-2019	280	-1.00	0.03	-1.13	-1.00	-0.79
R&DRatio	2017	2018	143	-0.99	0.18	-1.71	-1.00	0.12
R&DRatio	2017	2019	142	-1.01	0.17	-1.87	-1.01	0.03
R&DRatio	2017	2018-2019	142	-2.00	0.15	-2.79	-2.00	-1.29
R&DRatio	2015-2017	2018	140	-1.02	0.22	-2.23	-1.01	0.07
R&DRatio	2015-2017	2019	139	-1.04	0.21	-2.14	-1.01	-0.13
R&DRatio	2015-2017	2018-2019	139	-2.03	0.19	-3.19	-2.00	-1.45
EBIT	2017	2018	279	0.20	0.83	-0.86	0.08	10.70
EBIT	2017	2019	278	0.26	0.74	-0.70	0.14	8.46
EBIT	2017	2018-2019	275	0.23	0.75	-0.63	0.12	9.58
EBIT	2015-2017	2018	267	0.23	0.52	-0.86	0.16	3.98
EBIT	2015-2017	2019	267	0.32	0.64	-0.76	0.18	5.16
EBIT	2015-2017	2018-2019	264	0.28	0.54	-0.65	0.15	4.15
EBITDA	2017	2018	285	0.15	0.51	-0.89	0.09	7.05
EBITDA	2017	2019	287	0.26	0.44	-0.96	0.21	2.95
EBITDA	2017	2018-2019	284	0.21	0.43	-0.73	0.15	4.95
EBITDA	2015-2017	2018	279	0.22	0.39	-0.89	0.16	2.66
EBITDA	2015-2017	2019	281	0.37	0.54	-0.96	0.27	4.12
EBITDA	2015-2017	2018-2019	278	0.30	0.42	-0.72	0.23	3.03
ExecComp	2017	2018	287	0.61	2.30	-0.95	0.10	36.57
ExecComp	2017	2019	279	0.83	2.13	-0.79	0.36	31.71
ExecComp	2017	2018-2019	278	0.72	2.19	-0.64	0.27	34.14

ExecComp	2015-2017	2018	284	0.66	2.30	-0.88	0.24	36.57
ExecComp	2015-2017	2019	275	0.89	2.10	-0.75	0.52	31.71
ExecComp	2015-2017	2018-2019	275	0.78	2.18	-0.63	0.42	34.14
CEOCComp	2017	2018	282	0.34	2.71	-0.95	0.05	43.26
CEOCComp	2017	2019	272	0.25	0.89	-0.98	0.13	10.00
CEOCComp	2017	2018-2019	271	0.31	1.49	-0.96	0.12	21.14
CEOCComp	2015-2017	2018	278	0.29	1.87	-0.89	0.09	28.13
CEOCComp	2015-2017	2019	268	0.24	0.74	-0.99	0.14	8.33
CEOCComp	2015-2017	2018-2019	268	0.27	1.04	-0.92	0.15	13.57
ShareRepurchase	2017	2018	233	4.12	17.29	-0.98	0.30	161.09
ShareRepurchase	2017	2019	230	4.13	18.82	-0.99	0.18	201.10
ShareRepurchase	2017	2018-2019	227	4.20	16.56	-0.93	0.24	177.31
ShareRepurchase	2015-2017	2018	214	1.41	6.87	-0.99	0.07	83.17
ShareRepurchase	2015-2017	2019	210	1.59	8.16	-0.99	-0.04	77.37
ShareRepurchase	2015-2017	2018-2019	209	1.53	6.68	-0.95	0.06	67.01

Regression Data

Variable	Base Year	Projecte d Year	N	Intercept	Co-Efficient	tStat	pValue	rSquare d
NumEmployees	2017	2018	290	0.0504	0.0065	0.1318	0.0000	0.0001
NumEmployees	2017	2019	290	0.0903	-0.0070	-0.0844	0.0000	0.0000
NumEmployees	2017	2018-2019	290	0.0705	0.0029	0.0429	0.0000	0.0000
NumEmployees	2015-2017	2018	285	0.0985	0.0116	0.2241	0.0000	0.0002
NumEmployees	2015-2017	2019	285	0.1416	-0.0159	-0.2250	0.0000	0.0002
NumEmployees	2015-2017	2018-2019	285	0.1200	-0.0014	-0.0236	0.0000	0.0000
Dividends	2017	2018	226	0.1258	-0.0833	-0.6509	0.0000	0.0019
Dividends	2017	2019	226	0.2786	-0.0268	-0.0844	0.0000	0.0000
Dividends	2017	2018-2019	226	0.2046	-0.0149	-0.0612	0.0000	0.0000
Dividends	2015-2017	2018	220	0.2181	-0.0113	-0.0961	0.0000	0.0000

Dividends	2015-2017	2019	220	0.3998	-0.0397	-0.1512	0.0000	0.0001
Dividends	2015-2017	2018-2019	220	0.3104	-0.0003	-0.0018	0.0000	0.0000
Capex	2017	2018	291	0.1995	0.2497	1.8101	0.0000	0.0111
Capex	2017	2019	291	0.2822	0.0895	0.3698	0.0000	0.0005
Capex	2017	2018-2019	291	0.2469	0.2762	1.3973	0.0000	0.0067
Capex	2015-2017	2018	291	0.2291	0.1236	1.2041	0.0000	0.0050
Capex	2015-2017	2019	291	0.3070	-0.0406	-0.2792	0.0000	0.0003
Capex	2015-2017	2018-2019	291	0.2690	0.0631	0.5223	0.0000	0.0009
Cash from Operations	2017	2018	286	0.2074	-0.1123	-0.4549	0.0000	0.0007
Cash from Operations	2017	2019	283	0.3257	0.3981	1.6051	0.0000	0.0090
Cash from Operations	2017	2018-2019	283	0.2708	0.1692	0.6521	0.0000	0.0015
Cash from Operations	2015-2017	2018	283	0.2501	0.1215	1.1989	0.0000	0.0051
Cash from Operations	2015-2017	2019	280	0.3568	0.3227	3.0111	0.0000	0.0314
Cash from Operations	2015-2017	2018-2019	280	0.3071	0.2498	2.5760	0.0000	0.0231
Total Market Value	2017	2018	290	-0.0328	0.0310	0.4006	0.0329	0.0006
Total Market Value	2017	2019	290	0.2134	-0.1546	-1.0218	0.0000	0.0036
Total Market Value	2017	2018-2019	290	0.0900	-0.0589	-0.5014	0.0000	0.0009
Total Market Value	2015-2017	2018	288	0.1171	0.0824	1.0839	0.0000	0.0041
Total Market Value	2015-2017	2019	288	0.4126	-0.0395	-0.3051	0.0000	0.0003
Total Market Value	2015-2017	2018-2019	288	0.2648	0.0260	0.2534	0.0000	0.0002
CapexRatio	2017	2018	286	-1.0005	-0.0210	-2.1536	0.0000	0.0160
CapexRatio	2017	2019	283	-0.9977	-0.0122	-0.9808	0.0000	0.0034
CapexRatio	2017	2018-2019	283	-0.9995	-0.0223	-2.1624	0.0000	0.0163
CapexRatio	2015-2017	2018	283	-0.9983	-0.0085	-1.2276	0.0000	0.0053
CapexRatio	2015-2017	2019	280	-0.9941	0.0274	2.8088	0.0000	0.0274
CapexRatio	2015-2017	2018-2019	280	-0.9960	0.0105	1.3441	0.0000	0.0064
R&DRatio	2017	2018	143	-0.9968	-0.0389	-0.4294	0.0000	0.0013

R&DRatio	2017	2019	142	-1.0160	-0.0321	-0.4035	0.0000	0.0011
R&DRatio	2017	2018-2019	142	-2.0067	-0.0434	-0.5630	0.0000	0.0022
R&DRatio	2015-2017	2018	140	-1.0239	-0.0699	-1.0281	0.0000	0.0075
R&DRatio	2015-2017	2019	139	-1.0440	-0.1325	-2.1463	0.0000	0.0321
R&DRatio	2015-2017	2018-2019	139	-2.0342	-0.1088	-1.8297	0.0000	0.0235
EBIT	2017	2018	279	0.2476	0.7102	1.9014	0.0000	0.0128
EBIT	2017	2019	278	0.2989	0.7909	2.3242	0.0000	0.0191
EBIT	2017	2018-2019	275	0.2957	1.0341	2.7910	0.0000	0.0275
EBIT	2015-2017	2018	267	0.2072	-0.3948	-2.5658	0.0000	0.0241
EBIT	2015-2017	2019	267	0.2988	-0.3189	-1.8312	0.0000	0.0124
EBIT	2015-2017	2018-2019	264	0.2576	-0.3605	-2.1925	0.0000	0.0179
EBITDA	2017	2018	285	0.1365	-0.1657	-0.7956	0.0000	0.0022
EBITDA	2017	2019	287	0.2781	0.2833	1.5490	0.0000	0.0083
EBITDA	2017	2018-2019	284	0.2064	0.0197	0.0985	0.0000	0.0000
EBITDA	2015-2017	2018	279	0.2056	-0.2439	-2.1956	0.0000	0.0170
EBITDA	2015-2017	2019	281	0.3677	-0.0868	-0.5987	0.0000	0.0013
EBITDA	2015-2017	2018-2019	278	0.2894	-0.1621	-1.2589	0.0000	0.0057
ExecComp	2017	2018	287	0.5825	-0.3459	-0.3807	0.0000	0.0005
ExecComp	2017	2019	279	0.8003	-0.4739	-0.5494	0.0000	0.0011
ExecComp	2017	2018-2019	278	0.6892	-0.4923	-0.5073	0.0000	0.0009
ExecComp	2015-2017	2018	284	0.6521	-0.1355	-0.2226	0.0000	0.0002
ExecComp	2015-2017	2019	275	0.8691	-0.2842	-0.5298	0.0000	0.0010
ExecComp	2015-2017	2018-2019	275	0.7609	-0.2319	-0.3938	0.0000	0.0006
CEOCmp	2017	2018	282	0.3992	0.8175	0.7466	0.0110	0.0020
CEOCmp	2017	2019	272	0.2833	0.5367	1.4615	0.0000	0.0078
CEOCmp	2017	2018-2019	271	0.3530	0.7069	1.0382	0.0000	0.0040
CEOCmp	2015-2017	2018	278	0.3280	0.4968	1.0042	0.0014	0.0036
CEOCmp	2015-2017	2019	268	0.2711	0.5401	2.8899	0.0000	0.0302

CEOComp	2015-2017	2018-2019	268	0.3070	0.5276	1.8728	0.0000	0.0129
ShareRepurchase	2017	2018	233	3.4573	-9.8103	-1.3037	0.0002	0.0072
ShareRepurchase	2017	2019	230	4.8876	12.1145	1.4724	0.0007	0.0093
ShareRepurchase	2017	2018-2019	227	4.2284	0.3848	0.0476	0.0001	0.0000
ShareRepurchase	2015-2017	2018	214	1.2968	-1.4912	-0.6044	0.0016	0.0017
ShareRepurchase	2015-2017	2019	210	1.7715	2.5282	0.8576	0.0033	0.0035
ShareRepurchase	2015-2017	2018-2019	209	1.5871	0.8154	0.3181	0.0006	0.0005