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Tax Reforms, Investor Sentiment and Closed-End Fund Performance

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Abstract

Purpose: Tax reforms have a significant impact on asset prices and shareholders' wealth. The Tax Cuts and Jobs Act 2017 (TCJA) reduces the tax obligations for both households and businesses. This paper investigates the relationship between closed-end funds performance and investor sentiment induced by tax reforms.

Methodology: Two proxies of investor sentiment are used to measure the impact on closed-end fund (CEF) performance.

Results: The results reveal that overall, tax reforms have a positive effect on the closed-end fund valuations. Institutional investors' sentiment takes a differential view from individual investors on CEF returns. Institutional investors' sentiment does not show a relationship with fund returns. Medium size CEFs benefit more from tax reforms.

Unique Contribution to Theory, Policy and Practice: Despite mixed signals, the results suggest that TCJA has influenced the investors' sentiment resulting in excessive optimism.

Keywords: *Tax Reforms, Investor Sentiment*

JEL Classification Codes: G40, G41

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INTRODUCTION:

The Tax Cuts and Jobs Act of 2017 (TCJA) is considered one of the most impactful and market friendly tax reforms since the Economic Recovery Tax Act of 1981. The Act has provisions for repatriating the untaxed profits of U.S. firms held abroad and drastically cut corporate tax rates. This tax reform is structured to provide fillip to supply side incentives. It also marks the first time in modern history when the U.S. has a formal flat corporate tax provision. Overall, the attributes of tax reforms would fuel the next stage of economic growth through lifting wages, businesses ramping up their investments, and boosting job markets. Thus, this tax-reform is seen as an important statute for the U.S. capital markets, resulting in an immediate boost to corporate earnings and bolstering shareholder wealth.

However, there is no consensus how strongly TCJA would spur economic growth and private investment. Some argue that lowering taxes have significantly improved business environment. They would benefit the economic growth and overall investment (e.g. Davidson 2017, Council of Economic Advisers 2019)). Others argue that the Act may create a small portion of cash freed up and any proceeds coming from a reduction in taxes would be passed to stockholders as enhanced corporate payouts (e.g. Stone 2017, Krugman 2018). Recent studies note that firms with financial constraints or higher growth opportunities have not benefited as expected (e.g. Kalcheva et al., 2020).

This paper analyzes the role of investor sentiment in asset prices particularly in closed-end funds performance. It uses two different measures of investor sentiment i.e. direct and indirect measures. The direct measure is represented by the U.S. One Year Confidence Index – Individual and Institutional while Business and Consumer Confidence Indices denote for indirect measure. The goal is to find a positive association of investor sentiment measures with closed-end fund performances. It is based on the presumption that positive changes in the prospects for corporations induced by the tax reforms would reflect in the valuation for firms. Further, tax measures are generous towards firms who are likely to use share buyback programs aggressively and large dividends. Literature suggests that share repurchase programs can support equity prices, as they have the byproduct of lifting earnings per share by reducing the number of shares outstanding. However, slowing buybacks later can be a risk for markets. Therefore, investor sentiment measures at individual and institutional level will play a differential role towards the tax reforms.

Again, evaluating the law's impact after it was enacted, it would be important to see the investors' sentiment before and after the tax reforms. This is interesting for two reasons, First, some commentators in the Wall Street argued that the tax cut (TCJA) enacted in December 2017 created a lower quality increase in U.S. earnings growth that almost guarantees a peak rate of change. Furthermore, the second order effects of said tax cuts would not be all positive. Specifically, while

an increase in capital spending and wages creates a revenue opportunity for some, it also creates higher costs for most resulting lower margins.

Second, several equity strategists were reluctant to price tax-reform expectations into their already-bullish forecasts that time. Therefore, it would be valuable to see the tax reforms and investor sentiment measures to dispel any such misgivings. Prior studies on the TCJA have primarily focused on the asset valuations of listed firms (Gaertner et al. (2019) Chen and Koester (2020), Wagner et al. (2020)), This study contributes to the literature by studying the investors' sentiment role and performance of closed-end funds on tax reforms.

To estimate the effect of the TCJA on investors' sentiment and closed-end funds, the paper uses all closed-end funds (518) traded in U.S. markets during 2017-18. The data period is from May 2017 to June 2018. The sentiment measures i.e. Business and Consumer Confidence Indices, Individual and Institutional One-Year Confidence Indices are on monthly basis. The results reveal that overall, tax reforms have a positive effect on the closed-end mutual funds. Individual and institutional sentiments take a differential view on the changes in tax policy. Lastly, medium size CEFs benefit more from tax reforms. Despite mixed signals, the results suggest that TCJA has influenced the investors' sentiment positively in the short term.

Investor Sentiment and Asset Price:

Investor sentiment is difficult to define and quantify for asset pricing. It is a belief, emotion, and disposition among investors regarding an asset or financial markets. Therefore, it isn't an exact science. Traditional finance finds it problematic to rely on sentiment measures for investment risk and decision. However, behavioral finance, a growing body of finance, has been gaining currency using the effects of psychology on investors and financial markets. It looks into the investor sentiment hypothesis. Prior studies use the proxies of investor sentiment and conclude that investor sentiment plays a role in determining market prices (e.g. Chan, Hameed, and Lau (2003), Kumar and Lee (2006)). Studies suggest that bullish sentiment of investors particularly small investors could lead to stock overvaluation (e.g. Hvidkjaer (2008), and Barber, Odean and Zhu (2008)).

Prior research documents irrational phenomena and anecdotal accounts of investor sentiment such as IPO waves and dot com bubble that can be explained in rational models such as those presented in Pastor and Veronesi (2005, 2006). Influential paper by Baker and Wurgler (2006) has established that investor sentiment does affect equity prices and has predictive ability in stock returns. They suggest that investor sentiment is the optimism or pessimism on investment decisions. Cherkes et al. (2009) shows that a liquidity-based model (proxy for closed-end fund discount) generates the observed discount phenomenon suggesting sentiment role.

This paper presents an analysis, based on sentiment data, of the performance of closed-end fund shares. It has two goals. First, it analyzes the financial assets reactions and tax reforms. To gauge the effects of the TCJA on financial assets, it investigates the closed-end funds valuation such as

Net Asset Value (NAV) and fund share price. A closed-end fund invests the money raised in financial assets such as in stocks, bonds, money market instruments and/or other securities. The assets under management are computed on a daily basis and NAV is established daily. Further, a closed-end fund shares are traded on an exchange. Thus, the impact of tax reforms will be observed on the NAVs and shares price both, typically.

Second, the paper investigates investor sentiment through direct and indirect measures. To measure the effects of any regulation, it is important that the regulation is unanticipated (Schwert, 1981; Binder, 1985). Prior to passage of the tax bill, the likelihood of this bill becoming legislation was considered highly uncertain. Therefore, investor sentiment becomes a key issue in the study. Further, corporate finance theory predicts taxes affect equity valuation (Modigliani and Miller, 1958; Miller and Modigliani, 1961; Graham, 2003). Intuitively, all else being equal, paying lower taxes should benefit shareholders (e.g., Mills 1998). Therefore, investors would expect higher asset prices in the financial markets and would show a positive relationship with closed-end fund NAVs / share prices.

The paper employs time-series portfolio sorts and multivariate cross-sectional regressions to provide four sets of results. First, the portfolio sorts look into NAVs of the closed-end funds. They provide evidence of valuation change in the funds NAV where tax change would be positive for firms. Second portfolio sorts are based on closed-end fund shares. They show that subsequent change in the NAVs will transmit into share prices in the secondary markets. Third portfolio sorts analysis are focused on indirect sentiment measures while fourth portfolio sorts provide for direct sentiment measures.

Time series univariate portfolios ignore the fact that more than one factor can affect funds and that the effects can be interrelated. To evaluate these interrelations, a cross-sectional multivariate regression is used to investigate NAV and share returns vary with economic variables. The benchmark model used in is based on standard models using macroeconomic variables as control variables and sentiment measure variables to capture the effect of TCJA on closed-end funds performance. Further, December 2017 is an anchor point so a tax dummy is created. The months prior to December 2017 are treated as 0 and after 1.

$$Y_{it} = \alpha_i + \sum_{j=1}^{J} \beta_j Ret_{j,it} + \sum_{k=1}^{K} \gamma_k Sent_{k,it} + \beta_{3taxdummy} + \varepsilon_{it}$$

where Y_{it} is either Net Asset Value Return or CEF Share Price Return for fund i in month t, Ret_{it} is a vector that consists of either market or fund variables for respective funds, and $Sent_{it}$ is a vector of sentiment variables. Taxdummy is an indicator variable for months equal to 1 after passing of TCJA. The last term is the standard error term.

The above approach acknowledges two caveats upfront. First, although the aim is to have a small model and include the most important and relevant macroeconomic variables, there is always the risk that other important variables can be missed. Second, it is possible that these macroeconomic variables are influenced by sentiment and thus carry information about sentiment creating multicollinearity issues among explanatory variables. Therefore, the model includes variance inflation factors (VIF) associated with variables of interest in running regression.

Data:

All closed-end funds (518 CEF) are obtained from morningstar.com. Federal Reserve Economic Data (FRED) provides macroeconomic variables. Market volatility (VIX) is obtained from Chicago Board Options Exchange (CBOE). Business and Consumer Indices are obtained from OECD while the individual and institutional investor sentiment data are obtained from the International Center for Finance, Yale University.

OECD Business and Consumer Confidence Indices are indicators where above 100 suggest an increased confidence in near future performance, and numbers below 100 indicate pessimism towards future developments in the economy. U.S. One-Year Confidence Index – Individual or Institutional represent the percent of the individuals or institutions, respectively expecting an increase in the Dow in the coming year. The One-Year Confidence Index is the percentage of respondents giving a number strictly greater than zero for “in 1 year”. The questions are worded to show the possibility of being bearish or bullish than more optimistically worded questions used by some other surveys. The paper uses monthly data to exclude any confounding effect that may arise in a shorter period data. Further, to reduce the effects of extreme outliers, the final data is winsorized at 1% and 99% level.

EMPIRICAL RESULTS:

Table 1 shows that on average, the NAV and share price returns are 0.38% and 0.25%, respectively on a monthly basis. This indicates that market participants view the TCJA as a positive tax reform for the markets. Indirect sentiment measures i.e. consumer and business confidence indices, on average, are 101.27 and 101.27, respectively. In fact, both indices are always above 100 during the sample period signaling a boost in the sentiment towards the future economic situation. Similarly, direct sentiment measures i.e. U.S. One-Year Confidence Index for individual and institutional, both are above 50 suggesting a strong undercurrent of positive sentiment towards tax reforms.

Table 1: Summary Statistics

This table presents descriptive statistics of variables examined for sentiment measures and closed-end funds performance. Net Asset Value Return is the value of the fund's assets minus its liabilities divided by the number of fund's outstanding shares. CEF Share Price Return is the difference between share price end of period and share price beginning of period divided by share price

beginning of period. Average Net Asset is the average value in dollars of total net asset during a month. GDP Growth Rate is the average rate of change of the gross domestic product. S&P 500 Return is the percentage of change in S&P 500 index value. CBOE Volatility Index is a measure representing stock market's expectations for the relative strength of near-term price changes of the S&P 500 Index. Consumer Confidence Index is an indicator of future developments of households' consumption and saving, based on sentiment about the general economic situation. Business Confidence Index is an indicator on future developments, based upon opinion surveys on developments in production, orders and stocks of finished goods in the industry sector. U.S. One-Year Confidence Index - Individual represents the percent of the individuals expecting an increase in the Dow in the coming year as calculated by International Center of Finance at Yale University. U.S. One-Year Confidence Index - Institutional represents the percent of the institutions expecting an increase in the Dow in the coming year as calculated by International Center of Finance at Yale University.

Variables	N	Mean	Median	Standard Deviation	Minimum	Maximum
Net Asset Value Return	7208	0.38	0.34	2.14	-7.97	7.48
CEF Share Price Return	7194	0.25	0.27	2.85	-8.48	9.55
Average Net Asset ($ in million)	7224	465.31	286.40	509.83	241.08	2897.92
GDP Growth Rate	13	0.33	0.32	0.33	-0.18	0.95
S&P 500 Return	13	0.97	1.07	2.22	-3.89	5.62
CBOE Volatility Index	13	13.23	11.23	3.48	9.51	19.97

Consumer Confidence Index	13	101.27	101.30	0.17	100.98	101.53
Business Confidence Index	13	101.14	101.23	0.24	100.55	101.36
U.S. One-Year Confidence Index - Individual	13	63.46	63.48	2.89	59.75	71.13
U.S. One-Year Confidence Index - Institutional	13	68.88	67.91	5.26	61.64	77.37

TCJA has provided major tax benefits to firms for a long term and most firms would enjoy tax savings on a recurring basis. It has several provisions such as flat corporate tax rate, immediate 100% expensing of capital assets, R&D related provisions, and one-time tax on unrepatriated earnings that provide benefits immediately boosting firm valuations and shareholder wealth. A natural question would be that the benefits should be visible to firms in current macroeconomic conditions. To investigate the effect of tax reforms provisions, Table 2 presents the results of regression analysis of macroeconomic variables affecting the NAV and share price returns of closed-end funds. Tax dummy is a focal point. It is used in the regression to show the effect of TCJA. Tax dummy is considered to be 0 before December 2017 or 1 later on.

Model 1 of Table 2 presents the relationship between macroeconomic variables and NAV return after controlling for fund size. The estimates for fund size, GDP, and S&P 500 are all positive and significant with NAV returns suggesting buoyancy and positive economic outlook during the sample period. As expected, CBOE volatility index is negative and significant. When tax dummy is included in the Model 2, its estimate is 0.847 and highly significant with NAV return suggesting higher return for closed-end funds due to tax reforms. When similar regression analysis is conducted on fund share return as dependent variable, the results are consistent with NAV return. The argument that markets react positively to tax cuts not offset by tax increases is supported by the studies finding a positive market reaction to the Economic Growth and Tax Relief Reconciliation Act of 2001 and the Jobs and Growth Tax Relief Reconciliation Act of 2003 (e.g., Auerbach and Hassett, (2007); Gadarowski et al. (2007)). Overall, the impact of TCJA seems to have positively influenced asset prices and financial markets.

Table 2: Multivariate Cross-sectional Fund-level Regression

This table presents results of the multivariate analysis of NAV return and closed-end fund share return. It reports the estimates of the pooled OLS regression. The regression models present the

effect of economic activity and financial markets after controlling for market volatility and size of the closed-end funds. The variables are defined in Table 1 legend. The estimates of regression models are reported in the upper part. Numbers in parentheses are t-statistics.

Variables	**NAV Return as Dependent Variable**		**CEF Share Return as Dependent Variable**	
	Model 1	**Model 2**	**Model 3**	**Model 4**
Average Net Asset	0.074	0.074	0.120	0.120
	(3.11)	(3.13)	(3.66)	(3.68)
GDP Growth Rate	0.149	0.197	0.503	0.572
	(1.98)	(2.62)	(4.84)	(5.53)
S&P 500 Return	0.235	0.254	0.103	0.131
	(16.74)	(18.00)	(5.31)	(6.73)
CBOE Volatility Index	-0.080	-0.060	-0.130	-0.102
	(-9.00)	(-6.71)	(-10.65)	(-8.22)
Tax Dummy		0.847		1.233
		(9.00)		(9.51)
Intercept	-0.287	-0.629	-0.631	-1.135
	(-0.60)	(-1.31)	(-0.95)	(-1.71)
Adj.R Square	0.12	0.13	0.05	0.06
Number of Observations	7208	7208	7194	7194

Similar to Wagner et al. (2020), the paper split the sample data into four quartiles. Table 3 shows the results where funds are sorted based on size into four segments to analyze the differential impacts of TCJA. The results show that funds whether big, small or medium size, all are positively influenced by the tax reforms. However, the estimates for medium size funds i.e. 2nd and 3rd quartile size funds are higher than other size funds. Further, these estimates show the tax reforms experience a positive and statistically significant market reaction. The estimates for top or bottom quartile funds are similar and experience a positive and significant market reaction. The findings indicate that these results are driven positively by tax reforms in line with the fact of higher valuation and asset prices.

Table 3: Multivariate Cross-sectional Fund-level Regression – Size Level

This table presents results of the multivariate analysis of NAV return and closed-end fund share return. It reports the estimates of the pooled OLS regression. The regression models present the effect of economic activity and financial markets after controlling for market volatility and size of the closed-end funds. The variables are defined in Table 1 legend. The estimates of regression models are reported in the upper part. Numbers in parentheses are t-statistics.

Variables	NAV Return as Dependent Variable			CEF Share Return as Dependent Variable		
	Model 1 Q1	Model 2 Q4	Model 3 Q2-3	Model 4 Q1	Model 5 Q4	Model 6 Q2-3
Average Net Asset	0.102	0.043	0.061	0.130	0.056	0.088
	(1.24)	(0.44)	(0.65)	(1.07)	(0.42)	(0.69)
GDP Growth Rate	0.104	0.172	0.260	0.308	0.610	0.684
	(0.73)	(1.22)	(2.34)	(1.46)	(3.16)	(4.58)
S&P 500 Return	0.151	0.338	0.264	0.095	0.180	0.124
	(5.59)	(12.70)	(12.62)	(2.37)	(4.95)	(4.43)
CBOE Volatility Index	-0.090	-0.057	-0.048	-0.135	-0.083	-0.096
	(-5.22)	(-3.36)	(-3.63)	(-5.33)	(-3.56)	(-5.33)

Tax Dummy	0.755	0.647	0.997	0.379	1.441	1.548
	(4.19)	(3.69)	(7.12)	(1.43)	(6.02)	(8.23)
Intercept	-0.585	-0.064	-0.618	-0.669	-0.098	-0.678
	(-0.39)	(-0.03)	(-0.33)	(-0.30)	(-0.03)	(-0.27)
Adj.R Square	0.10	0.18	0.11	0.05	0.08	0.06
Number of Observations	1801	1797	3610	1788	1796	3610

Prior studies document a close link between sentiment measures and fundamental economic variables. The sentiment indicators are significantly correlated with macroeconomic variables used in the regressions. Therefore, while running multivariate regressions, variance inflation factor (VIF) is included in the models. The paper finds that among variables of interest, the VIF was less than 10 suggesting that multicollinearity is not a concern.

To fully disentangle the causal relationship between indirect sentiment variables i.e. consumer and business confidence with closed-end fund performance, the macroeconomic variables are included in the model. Table 4 presents the results. Consistent with the results observed in Table 2 and Table 3, the estimates for tax dummy is positive and highly significant with funds NAV and share return. However, indirect sentiment measures i.e. consumer and business confidence indices are negative and significant. The negative and significant association reflects excessive optimism towards tax reforms. Since the sentiment measures are highly upbeat and beyond the fundamentals, they come down swiftly as well resulting in a negative relationship in the short term. These results are similar to prior studies that document that the measure of sentiment based on consumer confidence indices are negatively associated with future size premium (e.g. Lemmon and Portniaguina (2006)). Barone-Adesi et al. (2014) shows that sentiment index reflects excessive optimism resulting in negative association with future returns.

Table 4: Multivariate Cross-sectional Fund-level Regression – Indirect Sentiment Measures

This table presents results of the multivariate analysis of NAV return and closed-end fund share return. It reports the estimates of the pooled OLS regression. The regression models present the effect of sentiment measures such as consumer confidence and business confidence after controlling for market variables and size of the closed-end funds. The variables are defined in Table 1 legend. The estimates of regression models are reported in the upper part. Numbers in parentheses are t-statistics.

Variables	NAV Return as Dependent Variable			CEF Share Return as Dependent Variable		
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
Average Net Asset	0.074	0.074	0.074	0.120	0.120	0.120
	(3.12)	(3.16)	(3.16)	(3.69)	(3.72)	(3.72)
GDP Growth Rate	0.334	-0.210	-0.307	0.858	-0.011	0.126
	(4.29)	(-2.60)	(-3.22)	(8.03)	(-0.10)	(0.96)
S&P 500 Return	0.294	0.310	0.302	0.213	0.212	0.223
	(19.14)	(21.24)	(19.84)	(10.12)	(10.51)	(10.64)
CBOE Volatility Index	0.016	0.012	-0.008	0.058	0.002	0.030
	(1.08)	(1.13)	(-0.55)	(2.81)	(0.11)	(1.46)
Tax Dummy	0.986	1.267	1.264	1.523	1.834	1.840
	(10.24)	(12.85)	(12.83)	(11.52)	(13.53)	(13.56)
Consumer Confidence Index	-1.614		-0.596	-3.362		-0.842
	(-6.47)		(-1.89)	(-9.81)		(-1.94)
Business Confidence Index		-1.675	-1.614		-2.403	-2.131
		(-12.95)	(-6.47)		(-13.49)	(-9.40)
Intercept	1.616	1.675	1.270	3.375	1.675	2.978
	(6.44)	(12.89)	(5.08)	(9.78)	(12.89)	(8.63)
Adj.R Square	0.13	0.14	0.15	0.08	0.09	0.09

Number of Observations	7208	7208	7208	7194	7194	7194

Sibley et al. (2016) suggests that one should be cautious about interpreting the information content of investor sentiment measures. Therefore, the paper attempts to use direct measures of investor sentiment. U.S. one-year confidence index measures investor confidence and related investor attitudes. This index is calculated as percent of respondents who report holding a certain view. This process is considered to be superior to indices formed on a simple average of surveys. In sum, the cross-sectional multivariate results reported in Table show that for all models, tax dummy representing tax reforms is positively and significantly associated with funds performance.

Table 5: Multivariate Cross-sectional Fund-level Regression – Direct Sentiment Measures

This table presents results of the multivariate analysis of NAV return and closed-end fund share return. It reports the estimates of the pooled OLS regression. The regression models present the effect of sentiment measures such as U.S. one-year confidence in the stock markets of individuals and institutions after controlling for market variables and size of the closed-end funds. The variables are defined in Table 1 legend. The estimates of regression models are reported in the upper part. Numbers in parentheses are t-statistics.

Variables	**NAV Return as Dependent Variable**			**CEF Share Return as Dependent Variable**		
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
Average Net Asset	0.074	0.074	0.074	0.121	0.120	0.121
	(3.18)	(3.13)	(3.17)	(3.73)	(3.69)	(3.73)
GDP Growth Rate	-0.020	0.173	-0.006	0.321	0.547	0.339
	(-0.27)	(2.26)	(-0.08)	(3.02)	(5.19)	(3.17)
S&P 500 Return	0.410	0.230	0.439	0.312	0.105	0.348
	(20.77)	(11.20)	(15.88)	(11.41)	(3.72)	(9.11)
CBOE Volatility Index	0.057	-0.095	0.093	0.034	-0.139	0.080

	(4.14)	(-4.16)	(3.30)	(1.78)	(-4.40)	(2.06)
Tax Dummy	0.751	0.687	0.895	1.122	1.065	1.307
	(8.01)	(5.06)	(6.59)	(8.66)	(5.69)	(6.96)
One-Year Confidence Index -	-0.154		-0.160	-0.179		-0.186
Individual	(-11.20)		(-11.17)	(-9.37)		(-9.39)
One-Year Confidence Index -		-0.020	0.018		-0.021	0.023
Institutional		(-1.64)	(1.46)		(-1.25)	(1.36)
Intercept	7.520	1.214	6.129	8.297	0.799	6.509
	(8.64)	(0.99)	(4.76)	(6.89)	(0.47)	(3.65)
Adj.R Square	0.14	0.12	0.14	0.07	0.06	0.07
Number of Observations	7208	7208	7208	7194	7194	7194

In case of direct measures of investor sentiment estimates, the individual sentiment measure reported in Model 1 and 4 is negative and significantly related to fund performance. In contrast, the institutional sentiment measure reported in Model 2 and 5 is negative but insignificant. In order to further explore whether these results are consistent, Model 3 and 6 report similar results. Therefore, Table 4 and 5 conclude that tax reforms enacted in 2017 have positively impacted the funds' performance resulting in higher valuation and asset prices. However, the individual investor sentiment measure has shown excessive optimism over the tax reforms while institutional investor sentiment measure is neutral.

CONCLUSION:

Tax policy directly affects the financial markets. Changes in taxes influence the investors' sentiment affecting asset prices. Empirical research is key to understanding the consequences of such policy changes. This paper contributes to a growing field of literature on the effects of the TCJA by investigating the role of investors' sentiment. The TCJA has been a major structural change in the U.S. corporate tax.

Studies focusing on the period after the TCJA confirm that the passage of the reform had a positive impact on the valuations of listed firms, but that most of the effect first became priced in when the firms released their financial statements in early 2018 (Wagner et al., 2020). Chen and Koester (2020) find similar results by showing that analysts failed to incorporate the majority of the deferred tax adjustments of the TCJA in late 2017. These findings suggest that although the markets reacted to news about the Act, they found it difficult to estimate the full effects of the TCJA during the legislative process. Thus, most of the impact on valuations in the stock markets was seen after the reform came into force on January 1st, 2018.

This paper results show that investors' sentiment whether attributed directly or indirectly has a significant relationship in the financial markets. The change in tax structures has influenced the investors' sentiment positively inducing higher valuation for financial assets following the tax reform. However, the estimates of sentiment variables seem to suggest that sentiment has been excessive optimism. The study reveals that TCJA's effect and investors' sentiment are not uniform across closed-end funds. This has been observed when the closed-end funds are segregated into four equal groups based on their size. Valuation effects are more for mid-size funds. Although the analysis cannot establish a significant valuation difference between small- and big-size funds, they still indicate that investors' sentiment has significant influence. Institutional investor sentiment appears to be neutral towards tax reforms.

Overall, the paper shows that investors' sentiment has a significant role in asset pricing in contrast with traditional asset pricing models that usually leave no role for investor sentiment. Several other interesting topics could be further explored in this field to supplement its findings.

Limitation of the Study:

It is not always easy to establish a compelling story using investors' sentiment measure. The paper serves as a useful reference for future researchers in assessing how investors' sentiment varies following the TCJA. However, it examines only a small potential effect of the corporate tax changes in the TCJA and the role of investors' sentiment. By analyzing results only through May 2019 to June 2018, it focuses only on short-term effects, which may be a poor guide to the long run. Further, the paper doesn't study specific provisions of the TCJA.

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