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Kyle Joseph Norman  
*University of New Hampshire*

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# What is the Effect of the CAREs Act on Public Companies' Pension Plan Contributions?

Kyle Norman and Dr. Catherine Plante

## INTRODUCTION

The “Coronavirus Aid, Relief, and Economic Security Act” or the “CAREs Act” was signed into law by Donald Trump on March 27<sup>th</sup>, 2020 in response to the economic chaos caused by the COVID-19 pandemic. The bill provided over \$2 trillion in stimulus intended for small businesses and middle to low-income Americans, while over 16.8 million U.S. workers filed for unemployment over the three weeks ending April 4, 2020 (*A Breakdown of the CARES Act*). The Act seeks to provide relief to the U.S. economy by easing financial burdens on U.S. companies, and the research done in this paper focuses on changes made to pension plans.

This thesis is an investigation into the effect that these provisions had on public companies' pension plan contributions during 2020 and is an opportunity to begin to observe how effective this section of the act was in providing financial relief for struggling companies.

## BACKGROUND AND PRIOR RESEARCH

### How are RMCs Determined?

The Employee Retirement Income Security Act of 1974 (ERISA) details the methodology for determining required minimum contributions. Under ERISA, section 430 states,

“If the value of plan assets (less the sum of the plan's prefunding balance and funding standard carryover balance) is less than the funding target, section 430(a)(1) defines the

minimum required contribution as the sum of the plan's target normal cost and the shortfall and waiver amortization charges for the plan year. If the value of plan assets (less the sum of the plan's prefunding balance and funding standard carryover balance) equals or exceeds the funding target, section 430(a)(2) defines the minimum required contribution as the plan's target normal cost for the plan year reduced (but not below zero) by the amount of the excess.”

A prefunding balance (PFB) is the present value of contributions that have been made in excess of the RMC. The employer or plan sponsor must specifically designate what amount of the excess contribution should be added to their prefunding balance. A funding standard carryover balance (COB) is the same as a prefunding balance but refers to excess contributions made before the Pension Protection Act. So, a plan’s RMC is calculated by taking the value of plan assets, less the remaining credit balance from PFBs and COBs, and subtracting the total from their funding target. If this calculation is below the funding target, the RMC is equal to that shortfall plus the plan’s target normal cost. If this calculation is above the funding target, the RMC is equal to the plan’s target normal cost less the amount of excess. Employers/plan sponsors may elect to set FTAPs above and below 100% depending on their financial position in a given year. PFBs and COBs are often accumulated in years with higher economic success and depleted in years with lower economic success (American Academy of Actuaries).

The payment of the RMC must be made by 8 ½ months after the end of the plan year. Any amounts under-funded in previous plan years must be made up by making quarterly payments of 25% of the required annual payment. The plan sponsor may elect to use the funding standard carryover balance and the prefunding balance to pay for the amount under-funded in previous years. The required payment is either 90% of the RMC or 100% of that amount from

the previous plan year. For quarterly payments made after the required due date, interest is applied at the rate of the plan's effective interest rate plus 5 basis points. These payments are treated as late contributions for the earliest plan year in which the RMC has not been met. A 10% excise tax is applied to the balance of unpaid RMCs for all plan years in which they remain unpaid by the end of a plan year (Schreiber). There are additional excise taxes that may apply to certain plans in certain circumstances as well.

### **The CAREs Act**

On March 27, 2020, the United States enacted the Coronavirus Aid, Relief, and Economic Security (CARES) Act in response to the Covid-19 crisis. Within the act were many key changes related to retirement plans, and specifically to defined benefit plans. To ease financial hardships, the CAREs act extended the due dates of required minimum contributions (RMCs) that would otherwise have been due during 2020, including any quarterly payments made for prior years' funding shortfalls, to January 4, 2021. The act also allows companies to elect to treat their plan's adjusted funding target attainment percentage (AFTAP) for the last plan year ending before January 1<sup>st</sup>, 2020 as the AFTAP for the plan year that begins in 2020 (Holland, Knight). It can be expected that many companies that have been adversely affected by the pandemic will take advantage of this new policy for short term benefit, but in the long term this may lead to further underfunding of pensions or depletion of PFBs and COBs.

In the same way that lockdowns have affected businesses cash flows, it has affected people and their families. In the first 10 weeks of the Covid-19 lockdowns 40 million people, almost 25% of the labor force in America, lost their job (Arnott). The CAREs act temporarily altered the standards for early withdrawals from qualified retirement plans. Typically, a 10% penalty is applied to early withdrawals, i.e. participants under the age of 59 ½. This penalty was

waived for withdrawals of up to \$100,000 for “Coronavirus related distributions” and must be repaid to an eligible retirement plan or pay income tax ratably over a three-year period. This \$100,000 limit applies to the individual person, not to each individual plan (Zerjav, Friedman, Roberts). Furthermore, repayment of currently unpaid loans was delayed for one year for all payments originally due during the period beginning on March 27, 2020 and ending on December 31, 2020. It can be reasonably expected that millions of Americans will turn to this as a means of financial relief, and as a result reduce the balance of the plan’s assets.

As contributions to pension plans halt and withdrawals spike, funding ratios will likely fall even further. To account for this inevitable scenario facing companies, the CAREs act allowed adjustment of FTAP. With the many changes to distribution rules that make it easier for plan funds to be withdrawn companies had to be given leeway regarding their FTAP. The CAREs act allowed plan sponsors to elect to use the plan’s FTAP from the last plan year ending before January 1, 2020 as their adjusted FTAP for the plan year that begins in calendar year 2020 (Zerjav, Friedman, Roberts).

## **Market Factors**

In order to diagnose the state of a pension plan, several key metrics are typically used. To determine how much a pension plan will be able to pay out in the future, it is important to know the rate at which existing plan assets can grow. The risk-free rate is a useful metric for doing so, as it is essentially the base rate of interest that can be expected. This rate is often derived from the yield of a treasury bond, as well as that of a treasury inflation-protected security. In a study done by Rob Arnott, he recommends that the risk-free rate should be approximated using a blend of both the aforementioned metrics.

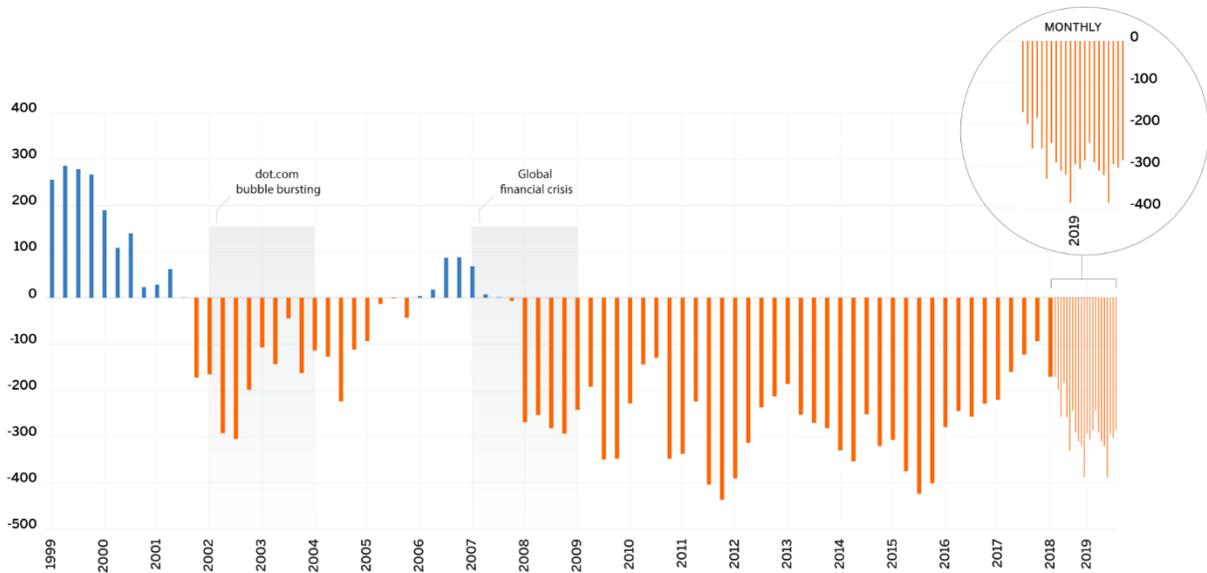
At a very basic level, companies determine the value of their pension plans by adding their plan assets and discounted future contributions by their expected rate of return as described above. As Treasury bond yields fall so too does the risk-free rate, thus reducing the expected returns on plan assets invested in low-risk assets. In 2019, the 20-year Treasury bond yield fell from 2.87% to 2.25%. On March 9<sup>th</sup>, in the heat of the Covid-19 induced crash, the 20-year Treasury bond yield fell to .87% (Arnott). As of December 4, 2020 the 20-year Treasury bond yield sat at 1.53%.

To be more specific, this ratio is referred to as the risk-free funding ratio and does not consider stock ownership when calculating return. A pension plan's official funding ratio is based on the return assumption recommended by actuaries, taking into account the entirety of the pension's portfolio. The third ratio to consider is the required return funding ratio, which is simply the return required from plan assets to fully fund the PBO. The difference between the risk-free rate and the pension return assumption is the amount of value that portfolio managers assume they can add. The problem is that all too often the actuarial return assumptions fall below the required return, and thus to be adequately funded pension plans must increase their contributions.

The Milliman 100 Pension Funding Index projects the funded status for the 100 largest pension plans of public companies. As of October 31, 2020 the funding ratio of these 100 companies is approximately 85.1%, or \$285 billion underfunded. This is the lowest the pension deficit has been since March of 2020 when Covid-19 lockdowns crashed the economy. Of the 100 companies, the median expected rate of return was 6.5%. If this rate is met and the discount rate remains at 2.71% for the rest of 2020 and 2021, the Milliman study forecasts that this would result in total pension deficit of \$275 billion (85.6% funded) by the end of 2020 and a total

pension deficit of \$202 billion (89.3% funded) by the end of 2021 (Wadia, Clark). If markets continue to rebound, concern for these pension plans can be relaxed. However, should another crash occur, the outlook for these plans could once again worsen.

The graph below illustrates the pension funding surplus/deficit of these companies over the past 20 years. It illustrates the effect of large market crashes on the funding ratios of these pension plans, and how there has not been an overall positive funding ratio since the global financial crisis of 2008.



(Zerjav, Friedman, Roberts)

## DATA RESEARCH AND OBJECTIVE

### Hypothesis

The purpose of this research is to determine whether the provisions of the CAREs act resulted in a widespread change in contributions, as well as what factors may be associated with this change. Pension data from 2019 and 2020 was used to gather financial information such as PBO, plan assets, net income, and net sales. The relationship between these factors and the

change in contributions from 2019 to 2020 allows an examination into the effectiveness of the provisions of the CAREs act. The expected outcome is:

- Companies with higher-funded plans will elect to reduce their contributions in 2020 due to financial hardship and the ability to disregard RMCs. Similarly, companies with reduced net income and sales from 2019 to 2020 will contribute less in 2020 than in 2019 in order to compensate for lost income. Furthermore, companies with larger PBOs in 2019 will contribute less in 2020 than in 2019 as a result of them choosing to use their previous plan year's FTAP.

### **Methodology and Design**

This sample was obtained using Wharton Research Data Services to access Compustat's "Pension Annual" data base. The desired pension information categories were input and a query was ran. This resulted in a sample size of 3,569 companies. The query was ran in February of 2021 and therefor many companies did not yet have financial information available on Compustat. Companies with either no pension plans or no information available for 2020 were removed from the sample, resulting in a remaining sample of 1,314 companies. Companies with non-12/31 year ends were also removed to avoid a timing bias among the reporting of financial information, resulting in a final sample size of 519 companies.

**Table 1**  
**Sample Selection**

Observations in Compustat for the period 12/31/19 – 12/31/20	3,569
Less:	
Companies with no pension information available	(2,255)
Companies without 12/31 year-end	(276)
Sample accounts for 2 years	(2)
<b>Final Sample (companies)</b>	<b>519</b>

Note: Sample was pulled in March of 2021, many companies' financial information had not yet been made available. For this reason, a consistent year-end of 12/31 was selected.

## Descriptive Statistics

Several variables used for this research were calculations of the difference between two other variables. The variable name “ChgCon” was calculated by subtracting 2020 contributions from 2019 contributions. “Funding” was calculated by subtracting 2019 PBO from 2019 plan assets. “PBO 19” is the 2019 projected benefit obligation. “ChgSales” was calculated by subtracting 2019 sales from 2020 sales. “ChgNI” was calculated by subtracting 2019 net income from 2020 net income.

**Table 2**  
**Descriptive Statistics**  
*In millions*

Variable	n	Mean	Median	Minimum	Maximum	Std. Dev.
<i>ChgCon</i>	519	3.93	0.04	-1,565	2,997	247.31
<i>Funding</i>	519	-560.44	-107.36	-22,902	4,470	1,937.49
<i>PBO19</i>	516	4,477.31	850.80	0.78	98,556	11,271.25
<i>ChgSales</i>	519	-1,404.36	-132.54	-77,009	17,654	6,990.77
<i>ChgNI</i>	519	-699.07	-44.01	-38,896	10,684	3,351.56

Table 2 presents descriptive statistics for the sample comprising 519 firm-year observations. All variable definitions are provided under “Descriptive Statistics” on page X

## Results

Parameter estimates were calculated using the statistics shown in Table 2. The Parameter estimates are the change in the response associated with a one-unit change of the dependent variable assuming all other predictors are held constant. In Table 3, the dependent variable is the change in contributions from 2019 to 2020 (ChgCon), and the independent variables are listed in the left hand column of the table. The interpretation of these results are as follows:

- The more overfunded the plan, the less they contributed in 2020. For every \$75.40 a plan was overfunded (underfunded) in 2019, they contributed \$1,000 less (more) in 2020 than 2019.
- The larger a company's pension liability in 2019, the less they contributed in 2020. For every \$2.90 a plan had in pension liability in 2019, they contributed \$1,000 less in 2020 than in 2019.
- The more a companies' sales increased from 2019 to 2020, the more they contributed in 2020. For every \$3.65 a company's sales increased (decreased) from 2020 to 2019, their contribution increased (decreased) by \$1,000 from 2020 to 2019.
- The more a companies' net income increased from 2019 to 2020, the more they contributed. For every \$6.03 a company's net income increased (decreased) from 2020 to 2019, their contribution increased (decreased) by \$1,000 from 2020 to 2019.

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**Table 3**  
**Parameter of Estimates**

Variable	Parameter Estimate	Standard Error	T Value	Pr >  t	Directional (1-tailed)
<i>Funding</i>	-.07543	.00876	-8.61	<.0001	<.0001
<i>PBO19</i>	-.00290	.0015	-1.94	.0534	.0267
<i>ChgSales</i>	.00365	.00205	1.78	.0754	.0377
<i>ChgNI</i>	.00603	.00406	1.48	.1387	.0694

## **Conclusion**

In conclusion, companies with well-funded plans and companies with decreased sales and net income chose to take advantage of the CAREs act and contributed less in 2020 than in 2019. This suggests that the CAREs act was successful in providing temporary relief to struggling companies during the COVID 19 pandemic. Furthermore, companies with large PBOs in 2019 likely contributed less in 2020 due to the ability to use the previous year's funding target attainment percentage. By doing so, they were able to avoid increasing their contributions in response to the volatile market conditions in 2020.

While the CAREs act seems to have satisfied its goal in the short-term, only time will tell what long-term consequences it may have caused. The majority of pension plans are already underfunded, and deferring payments may have only provided temporary relief for these companies.

## **Limitations**

Several factors imposed limitations on the ability of this thesis to entirely achieve its goals. Work on this project began in the Fall of 2020, less than 6 months after the CAREs act was signed into law on March 27, 2020. Because of this, much of the literature review and the direction of this thesis relied on incredibly recent information. Furthermore, much of the data used was collected in February of 2021 which resulted in many companies being eliminated from the sample due to a lack of financial information and the selection of 12/31 year ends.

Another limitation of this thesis is the multicollinearity of the variables used in Table 3. With multicollinearity comes the potential for variables to simply be correlated and not caused by the independent variable. For example, it can be expected that sales and net income would

show similar trends simply because they are correlated by their nature. Table 4 below lays out the Pearson Correlations for variables used in the regression model.

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**Table 4**  
**Pearson Correlations for Variables Used in the Regression Model**  
**N(a,b,d,e)=519, N(c)=516**

Variable	(a)	(b)	(c)	(d)	(e)
<i>(a)ChgCon</i>	1.00	-	-	-	-
<i>(b)Funding</i>	-.0425	1.00	-	-	-
<i>(c)PBO19</i>	.287	-.813	1.00	-	-
<i>(d)ChgSales</i>	-.019	.387	-.375	1.00	-
<i>(e)ChgNI</i>	.055	.229	-.276	.695	1.00

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Table 2 presents descriptive statistics for the sample comprising 519 firm-year observations. All variable definitions are provided in Appendix A.

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## Annotated Bibliography

- Arnott, R. (2020, June). *The COVID-19 Crash and the Abandonment of the Pensioner*.  
[https://www.researchaffiliates.com/en\\_us/publications/articles/809-the-covid-19-crash-and-the-abandonment-of-the-pensioner.html](https://www.researchaffiliates.com/en_us/publications/articles/809-the-covid-19-crash-and-the-abandonment-of-the-pensioner.html).
- A Breakdown of the CARES Act*. (2020, April 14).  
<https://www.jpmorgan.com/insights/research/cares-act>.
- Downs, M., Cohen, M., & Hanna, C. (2012). The 80% Pension Funding Standard Myth.  
*American Academy of Actuaries*, 1–4.
- Groom Law Group. (2020, November 20). *IRS And PBGC Give Sponsors Until January 4, 2021 To Make Contributions Under The CARES Act - Employment and HR - United States*.  
Welcome to Mondaq. <https://www.mondaq.com/unitedstates/retirement-superannuation-pensions/1007714/irs-and-pbgc-give-sponsors-until-january-4-2021-to-make-contributions-under-the-cares-act>.
- Krantz, M. (2019, October 10). *GE's Not Alone: 25 Companies That Owe \$1 Trillion In Pensions*.  
Investor's Business Daily. <https://www.investors.com/etfs-and-funds/sectors/sp500-ge-not-alone-25-companies-owe-trillion-pension-payments/>.
- NRTA. (n.d.). *Pension Contribution Retirements*. AARP.  
[https://assets.aarp.org/www.aarp.org\\_/articles/work/contribution-requirements.pdf](https://assets.aarp.org/www.aarp.org_/articles/work/contribution-requirements.pdf).
- Sally P. Schreiber, J. D. (2015, September 8). *IRS Final Rules Govern Required Minimum Contributions for Single-Employer Pension Plans*.  
The Tax Adviser. <https://www.thetaxadviser.com/news/2015/sep/minimum-contribution-for-single-employer-pension-plans-201512982.html>.
- Wadia, Z., & Clark, C. J. (2020, November 5). *Pension Funding Index November 2020*.  
Milliman. <https://www.milliman.com/en/insight/pension-funding-index-november-2020>.
- Wadia, Z., Perry, A. H., & Clark, C. J. (2020, April 28). *2020 Corporate Pension Funding Study*.  
Milliman. <https://us.milliman.com/en/insight/2020-corporate-pension-funding-study>.
- Zerjav, V. H., Friedman, R. J., & Roberts, C. (2020, March 31). *Implications for Retirement Plans Under the CARES Act: Insights*.  
Holland & Knight. <https://www.hklaw.com/en/insights/publications/2020/03/implications-for-retirement-plans-under-the-cares-act>.