DECEMBER 2017

FOSSIL FUEL DIVESTMENT IMPACT ON NEW YORK STATE PENSIONS

Commissioned by:
Suffolk AME, Inc

a member of the New York State Public Employee Conference (PEC)

Researched and produced by Global Analytic Services, Inc.

TABLE OF CONTENTS

03 Introduction

05 Methodology

06 Findings

08 Background

10 Regulations

11 Investments

14 Climate Change

15 Divestment Risk

16 Conclusion

Endnotes

Introduction

Climate change is real. It has a profound effect on how people engage with the environment in their everyday lives. As a result, the role climate change has on the global economy has become a key factor when evaluating and planning future investments in sector-based and diversified holdings in relation to a corporation's or fund's exposure. This document provides evidence-based views on the likely impact on pensioners within the context of climate change and divestment from fossil fuels.

The rapidly developing global economy has increased demand for existing fuel sources and created a dynamic where alternative energy sources are created almost daily. This influx of energy industry offerings has triggered greater stakeholder scrutiny in the area of divestment. It is the fiduciary responsibility of the Trustees and fund managers to accurately assess data and employ investment strategies that garner the greatest return for members. As noted in Ernst and Young's *Global Corporate Divestment Study*, "for many corporations, investment funds, and public pension systems, divestments are now a fundamental part of economic strategy — leading companies focus on selling assets in the same way they focus on acquisitions." [1] Divestment can enhance the corporate valuation toolbox and guide returns. The Ernst and Young study continues, "divestments once seen as a short-term tactical tool to raise capital or pay down debt, today , provide longer-term value — and growth" and at times can have social policy implications. [2] Divestment, particularly from large global investments, can also pose investment risk. For the purposes of this study the social policy conversation centers on climate change and its impact on investment strategies.

This report does not debate the science of climate change. This report focuses on the economic reality of divesting from fossil fuels, the subsequent effect on pension funds, and the fiduciary responsibility of fund Trustees. Understanding that nothing can be effectively accomplished in a vacuum, this report acknowledges the need for a global multi-lateral strategy that implements measured, consistent, and sustainable actions to address the climate realities of today and tomorrow, while also reviewing the potential impact divesting from fossil fuels would have on investment funds, notably the New York State Common Retirement Fund.

Global Analytic Services' researchers established a baseline of key points driving the climate change debate and used those points and associated timelines to evaluate the economic impact on investment funds; principally the New York State Common Retirement Fund "The Fund".

Key Points for Consideration derived from the *Paris Agreement and The BlackRock Institute* **include:**

- Global average surface temperatures (land and ocean) have risen 0.88° Celsius (1.6° Fahrenheit) since records began in 1880, according to the US National Oceanic and Atmospheric Administration.
- Seventeen of the past 18 years have been the hottest on record globally. Possible causes are many, including an increase in carbon and other heat-trapping greenhouse gas emissions.
- Rising temperatures help explain melting ice caps, rising sea levels, shifting precipitation patterns, droughts and floods.
- A warming of 2° Celsius or more (from the 1880 starting point) is seen by many scientists as an initial threshold for irreversible damage and severe weather effects. [3, 4]

In an ever changing environment it is prudent to evaluate all facets of global politics and local economies while also assessing localized and globalized regulatory momentum. This action ensures stability in investment strategy and protects the future of funds.

There are numerous strategies that have been developed and implemented to stymie the global average temperature increase of 2°C.[5] These strategies include the acknowledgement of climate change, that climate change is caused by human actions, and the need to address the future of our global reliance on natural resources. Some argue that divestment from corporations with fossil fuel holdings is the "silver bullet" to cutting CO2 emissions. Others argue that by having significant ownership in these corporations allows more room for meaningful corporate reform. In both instances data, the acknowledgement that we live in the now, and the reality that the fundamental purpose of an investment fund is to generate a maximum rate of return for pensioners must be taken into account.

Divestment must pay attention to the unknown and unintended consequences on global economies and industries. One such area that deserves attention is the concept of **"stranded assets"** and their impact on not just tangible assets, but long term repercussions for industries and the workforce. The OECD notes in their response to the *Paris Agreement* that, "as climate policies drive this transition, some assets will become 'stranded' - i.e. unable to recover their investment cost as intended, with a loss of value for investors."[6] These stranded investments may include tangible items like rigging and refineries, but also include the workforce and skills training of hundreds of thousand of individuals. These assets and human derivatives stemming from divestment represent an unknown. The OECD continues, "the value of these potentially stranded assets cannot be estimated with precision, as much depends on the clarity of investors about climate policy interventions and their effectiveness and on underlying macro-economic trends, as well as the uncertain response of financial markets once the transition is engaged."[7] These stranded assets have an unknown but significant impact on sector divestment and must be accounted for in any serious divestment analysis.

The fossil fuel divestment movement promises that the problem of climate change can be ameliorated if investors in certain companies refuse to hold the securities of those companies in their portfolios. This approach is not strategic and does little to influence the reality of climate change. As iterated in his 2015 study, *Fossil Fuel Divestment: A Costly and Ineffective Investment Strategy*, University of Chicago Professor Daniel Fischel examined the claim that divestment would be the silver bullet to address climate change. Based on well accepted economic theory and the academic literature studying previous divestment attempts, Professor Fischel's study concluded that fossil fuel divestment has minimal or no environmental impact because it is highly unlikely to affect the production or distribution of fossil fuels on the part of targeted companies.[8] Moreover, not only is fossil fuel divestment ineffective, it is also costly to investors as it may trigger the creation of stranded assets.

Given the unique role of the energy sector in the economy, investors that chose to remove traditional energy from their investments reduce the diversification of their portfolios and thereby suffer reduced returns and greater risk. Investor costs are further compounded when considering the additional costs of transactional fees, commissions, and compliance costs that are unavoidable when divesting. During a period when many pension funds are underfunded, divestment has real financial implications that jeopardize their the long-term health and solvency.[9, 10]

Methodology and Assumptions

The Global Analytic Services Divestment Study analyzed domestic and global portfolios, holdings from the nation's largest retirement funds, with specific attention on the New York Common Retirement System and the New York City Pension Fund, and commonly applied divestment strategies. This report utilized data from an independent actuary that was confirmed by in-house actuarial staff. This report provides insights from leading actuaries and economists to better understand the economic impact accelerated divestment of fossil fuels from the New York State Common Retirement Fund will have on pensioners and State and local governments.

Actuarial analysis contemplated the impact of divestment in fossil fuels from the New York State and Local Retirement System assets. The analysis includes sole sector based investments and does not include diversified funds whereby fossil fuels may represent a portion of the portfolio. The results of this study establish a baseline analysis. Further analysis into diversified funds would indicate a greater negative impact on the NYS Local Retirement System Assets if divestment from fossil fuels were implemented. As a result, the assumptions utilized for the analysis were as follows:

- The Common Retirement Fund, valued at $181 billion as of June 30, 2016, holds the assets of the New York State and Local Retirement System. The Retirement System, one of seven public funds in New York State, provides pension benefits to public employees of the State and its localities aside from teachers and New York City employees, who are covered by separate plans. The Comptroller, as Trustee of the Common Retirement Fund, invests Fund assets on behalf of the Retirement System's more than one million members, retirees and beneficiaries.

- Two different systems: Employees' Retirement System (ERS) and Police and Fire Retirement System (PFRS), both managed by the NYS Comptroller.

- Currently, there are approximately **$978 million of fossil fuel investments** within their various holdings. Fossil fuel investments are part of non-sector based funds. If those funds were included in this report total fossil fuel investments would increase significantly. Fossil fuel investments have consistently provided annual returns in excess of 8.0%, averaging a return of 11% in 2016. Alternative investments are being considered, but there is concern that their potential for lower returns could cause significant increases in future plan funding requirements.

- Stabilized sector based funds in alternative energy and fuel have a return that ranges from 3-5% per annum. This range is based on returns from innovative technologies and long established investments in sectors like solar or wind technologies.

- Five-year asset valuation method currently used by SLRS, as disclosed in the annual assumption prepared by the System Actuary for the New York State Comptroller.

- 15 year amortization period for recognition of gains and losses, coupled with a 7.0% interest rate assumption and a 3.0% payroll growth assumption, used as a proxy for the Aggregate Cost Method employed by the System Actuary.

- Two scenarios were employed:
    - The securities to be divested are presently returning 8% per annum, and will be replaced by securities returning 5% per annum, and

    - The securities to be divested are presently returning 8% per annum, and will be replaced by securities returning 3% per annum.[11]

Findings

Based on the aforementioned Assumptions independent actuarial analysis varied the expected annual return for the alternative investments to determine the impact on the annual contributions to the trust. The five-year smoothing of returns in the asset valuation method leads to a delay in significant changes to the annual contribution amounts; as a result, we have provided the cost impact for each return over a five-year period in the following table:

Table 1 – 5 Year Divestment Impact on Returns

Annual Return on Alternative Investment	Five-Year Contribution Impact (in millions)
8.0%	$0.0
7.0%	$4.4
6.0%	$8.7
5.0%	$13.0
4.0%	$17.2
3.0%	$21.4

In short, for each 1% change in the annual return, SLRS can expect a change in five-year contributions to be approximately $4.3 million.

Further analysis by Global Analytic actuarial staff provides the outcomes of two assumption based scenarios:

(a) The securities to be divested are presently returning 8% per annum, and will be replaced by securities returning 5% per annum, and

(b) The securities to be divested are presently returning 8%per annum, and will be replaced by securities returning 3% per annum.

In both cases, the analysis will show the effect after (i) one year, (ii) three years and (iii) five years.
As can be seen from the following tables, the impact on the combined employer contribution to the NYSLERS and the NYSPFRS ranges from $3 million per annum to $30 million per annum.

Table 2 – Employer Pension Contributions in Fiscal 2016

System	**Amount**
NYSLERS	$4.348 billion
NYSPFRS	$ .793 billion
Total	$5.141 billion

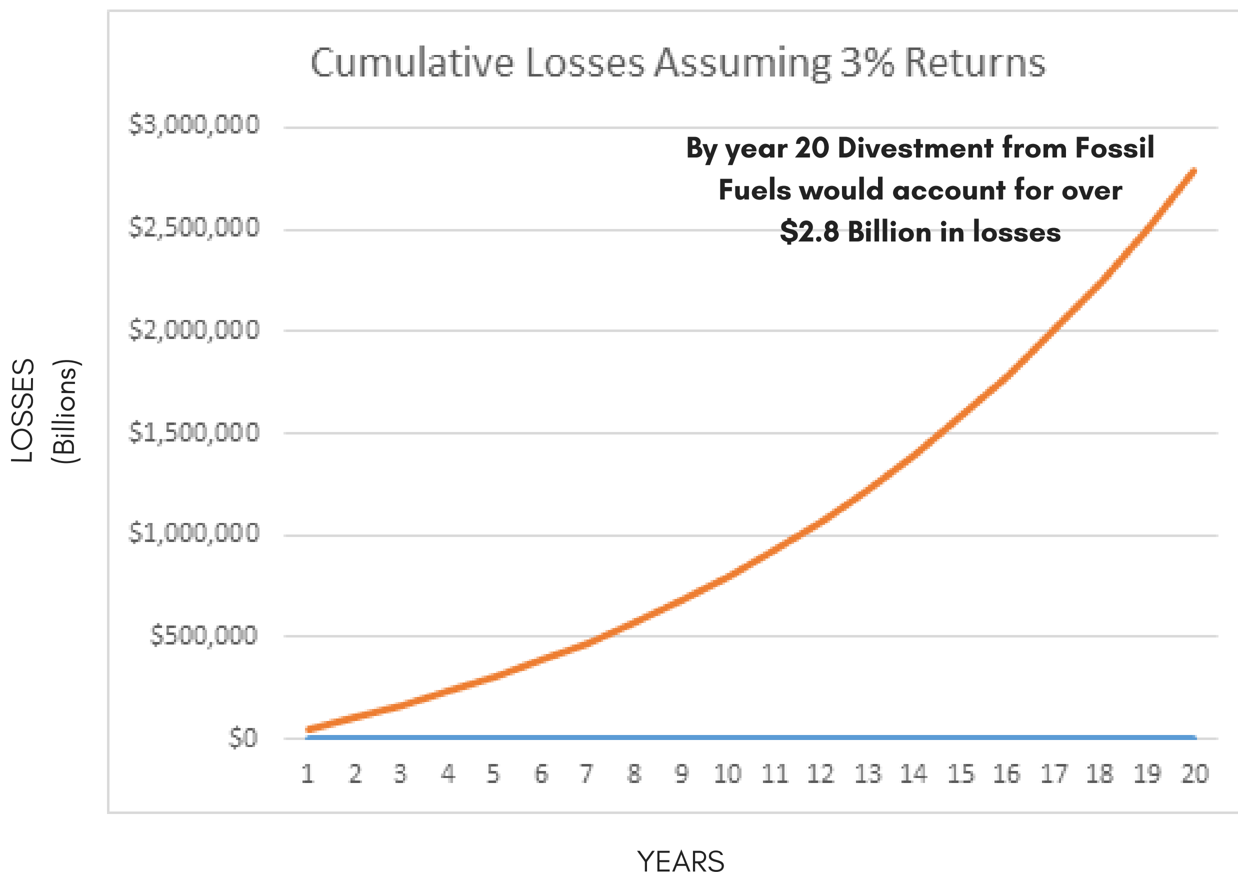
Findings

Table 3 – Financial Implications of Replacing $978 million in Fossil Fuel Assets Returning 8% per Annum with "Green" Assets Returning 5% per Annum

1) **Loss in first year**	$29.4 million
2) **Cumulative loss after three years**	$99.8 million
3) **Cumulative loss after five years**	$188.8 million
4) Cumulative increase in pension costs over 5 years	$13.0 million

Table 4 – Implications of Replacing $978 million in Fossil Fuel Assets Returning 8% per Annum with "Green" Assets Returning 3% per Annum

1) **Loss in first year**	$48.9 million
2) **Cumulative loss after three years**	$163.3 million
3) **Cumulative loss after five years**	$303.2 million
4) **Cumulative increase in pension costs over 5 years**	$ 21.4 million



Background

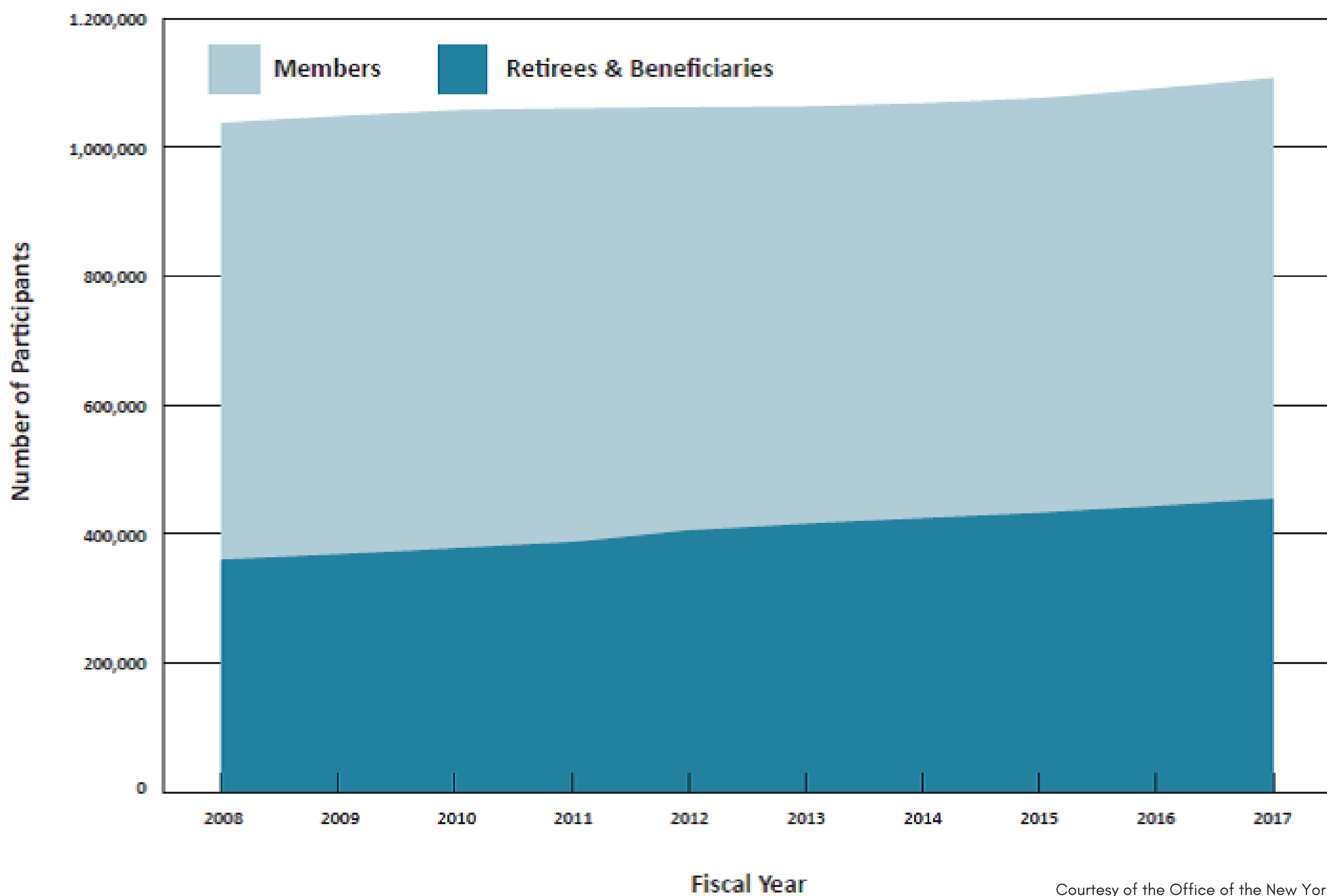
About the New York State and Local Retirement System

As documented by the New York Office of the Comptroller, In 1921, legislation created the New York State Employees' Retirement System (ERS) to provide benefits for state civil service officers and employees. By 1923, several counties, cities, towns and villages became participating employers. Legislation in 1966 created the New York State Police and Fire Retirement System (PFRS), and membership of all police officers and firefighters was transferred from the ERS at that time. The two systems have separate retirement plans but are administered by the same staff. Today, they are collectively called the New York State and Local Retirement System (NYSLRS).[12]

There are 1,104,779 participants in the System, including 652,324 members and 452,455 retirees and beneficiaries.

The number of retirees is increasing more quickly than members. For example, in 1997 retirees represented 33 percent of the System's participants. By fiscal year 2017, that number had increased to approximately 41 percent. The value of the pension plan's fiduciary net position at the end of the fiscal year was $197.60 billion. Benefit payments continue to rise, reflecting improvements in final average salaries over the past decades, cost-of-living adjustment (COLA) payments and benefit improvements enacted over the years.

Table 5



Courtesy of the Office of the New York State Comptroller, 2017

Member Information (as of March 31, 2016) [13]

- Overall membership in NYSLRS: 1,088,342
  - 647,399 employees, 81% of which are active (currently working for a participating employer). 612,294 (95%) are ERS; 35,105 (5%) are PFRS.
  - 403,802 retirees; 37,141 beneficiaries

Average Salary and Pensions (as of March 31, 2016)

- Average salary for ERS member: $50,536
- Average pension for all ERS retirees and beneficiaries: $22,415
- Average pension for new ERS retirees: $28,364
- Average salary for PFRS member: $107,700
- Average pension for all PFRS retirees and beneficiaries: $47,397
- Average pension for new PFRS retirees: $71,603

Tiers of ERS and PFRS Membership (percentages as of March 31, 2016)

- Tier 1 ERS members joined before July 1, 1973 (0.6% of members)
- Tier 2 ERS members joined between July 1, 1973 and July 26, 1976 (0.7% of members)
- Tier 3 ERS members joined between July 27, 1976 and August 31, 1983
- Tier 4 ERS members joined between September 1, 1983 and December 31, 2009 and 68.9% of members are in Tiers 3 & 4
- Tier 5 ERS members joined between January 1, 2010 and March 31, 2012 (8.7% of members)
- Tier 6 ERS members joined on or after April 1, 2012 (21.1% of members)
- Tier 1 PFRS members joined before July 31, 1973 (0.2% of members)
- Tier 2 PFRS members joined between July 31, 1973 and June 30, 2009 (77.9% of members)
- Tier 3 PFRS members joined between July 1, 2009 and January 8, 2010 (0.6% of members)
- Tier 5 PFRS members joined between January 9, 2010 and March 31, 2012 (5.2% of members)
- Tier 6 PFRS members joined on or after April 1, 2012 (16.0% of members)

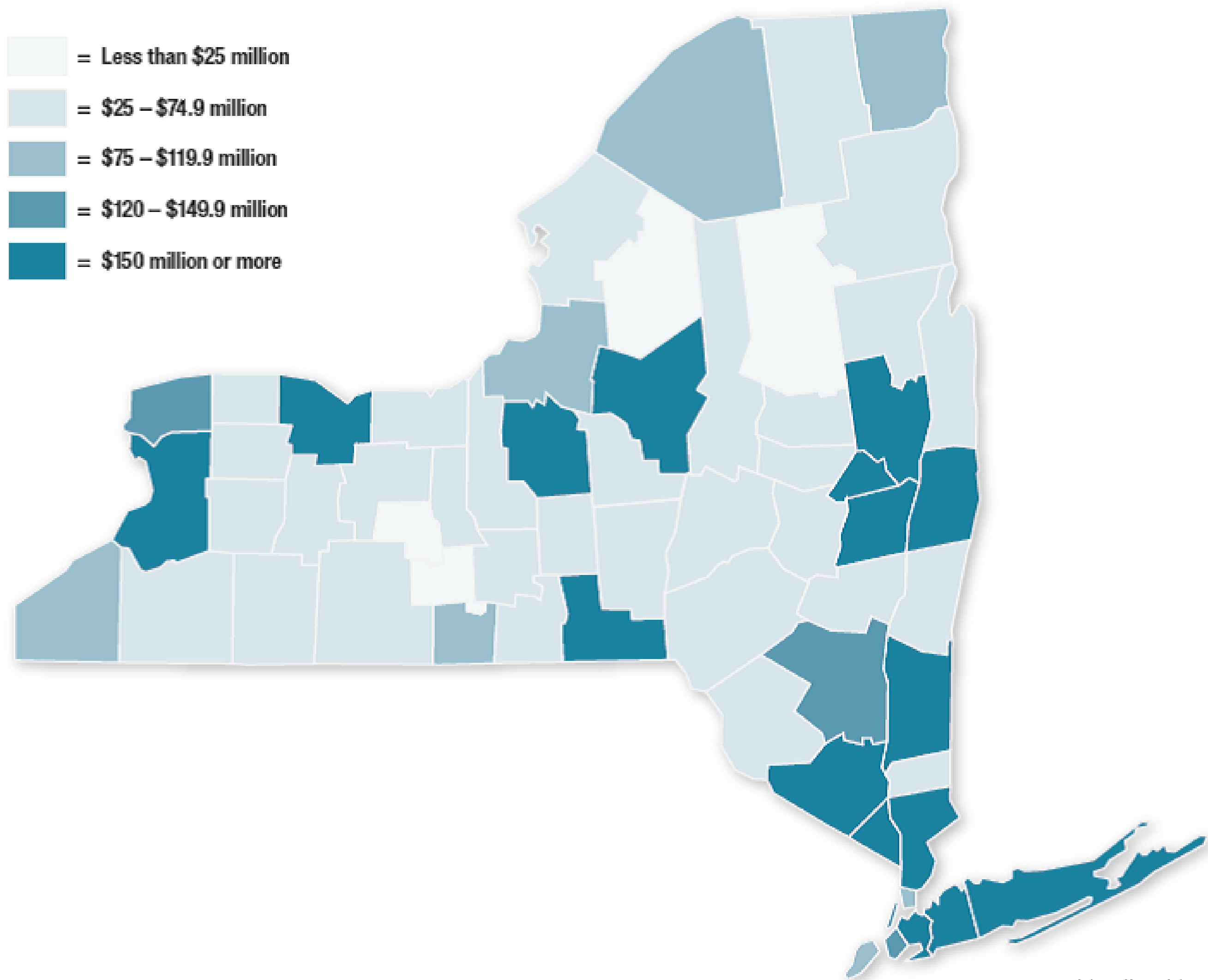
Benefits Paid and Contributions (as of March 31, 2016)

- $10.91 billion in benefits paid
- Employer contributions totaled $5.14 billion
- State government contributions totaled $1.96 billion
- Local government contributions totaled $3.18 billion
- Employee contributions totaled $307 million

More than 3,000 employers participate in the NYSLRS. Of the total members, approximately 32% are state employees, 32% are local government employees, and 20% are school district employees. Employees of state and local public authorities and other governmental corporations make up the remaining members. Of the 452,455 retirees and beneficiaries in the System, 355,028 (78 percent) remain New York State residents.

Membership data provided by the New York State Office of the Comptroller. This is the most up to date available.

Benefit Payments by County



Courtesy of the Office of the New York State Comptroller, 2017

Regulatory Requirements and Fiduciary Responsibility

In New York, the State Comptroller is sole trustee of the New York State Common Retirement Fund (CRF). The external advisory committees appointed by the Comptroller meet periodically throughout the year and provide independent, expert assistance in guiding the Fund. These committees include: the Advisory Council for the Retirement System; the Investment Advisory Committee; the Real Estate Advisory Committee; the Actuarial Advisory Committee; and the Audit Advisory Committee.[14]

The New York State Common Retirement Fund, valued at $181 billion as of June 30, 2016, holds the assets of the New York State and Local Retirement System. The Retirement System, one of seven public funds in New York State, provides pension benefits to public employees of the State and its localities aside from teachers and New York City employees, who are covered by separate plans. The Comptroller, as Trustee of the Common Retirement Fund, invests Fund assets on behalf of the Retirement System's more than one million members, retirees and beneficiaries.

Currently, there are approximately $978 million of fossil fuel investments within their various holdings. Non-sector based diversified funds hold additional fossil fuel investments. These investments have consistently provided annual returns in excess of 8.0%, in keeping with the statutorily mandated threshold of 8.0% returns to maintain the solvency of the fund to pay out current and future benefits to its retirees.[15]

The Fund's asset allocation is not intended to be an absolute limit on the type of investments that can be made by the Comptroller or considered by staff. The Comptroller is expressly permitted to invest the assets of the Fund pursuant to various provisions of State law, including, among others, sections 13, 176, 177, 178, and 313 of the RSSL, which also contains limitations on the amount and quality of investments the Fund may hold in certain asset categories. Investments purchased pursuant to these provisions are so-called "legal list"[16] investments. In addition to the foregoing, section 177(9) of the RSSL contains a provision that currently provides that up to 25 percent of the Fund's assets may be placed in investments not specifically authorized by any other provision of law. In making investments under this provision, the Comptroller is subject to the prudent person and exclusive benefit provisions in the statute. Subject to such standards, investments made under this provision must also, to the extent reasonably possible, benefit the overall economic health of the State. Investments purchased pursuant to section 177(9) of the RSSL are so called "basket clause" investments.

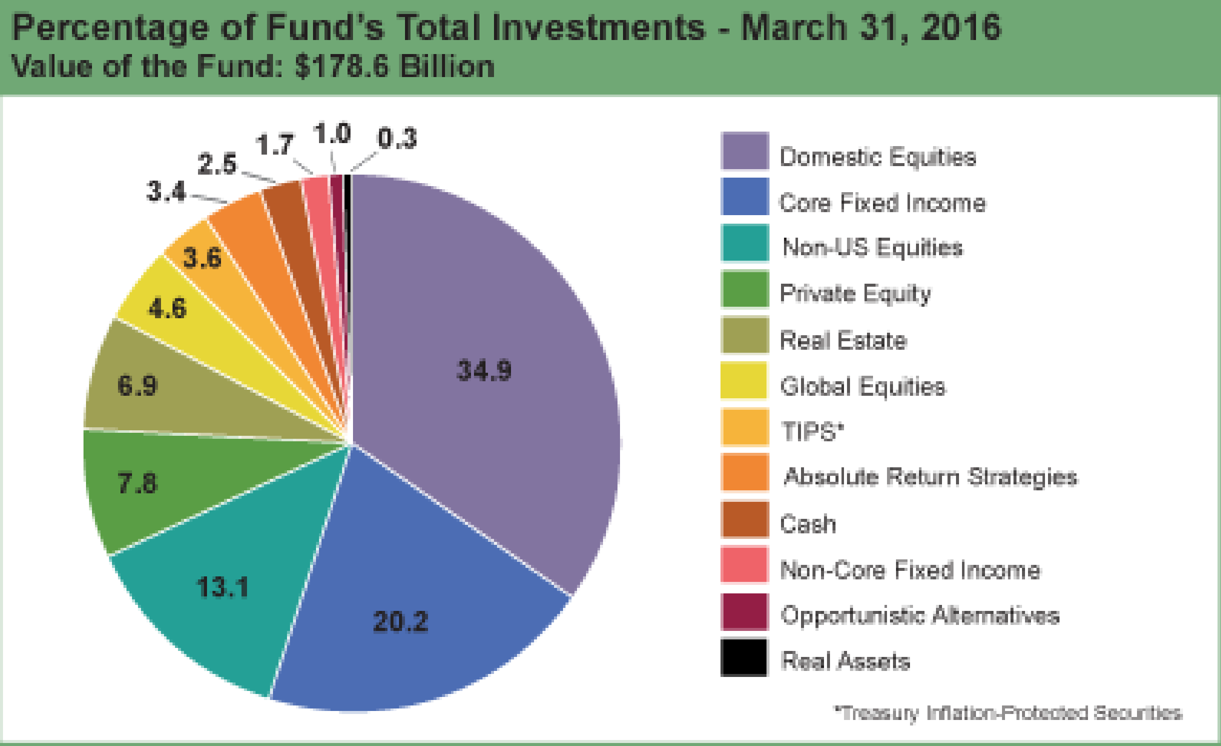
According the the New York State Office of the Comptroller, In fulfilling mandated responsibilities, the Comptroller is legally bound by a fiduciary duty to act prudently and solely in the interest of, and for the exclusive purpose of providing benefits to, the Retirement System's participants. And, as interpreted by the Court of Appeals, those participants are entitled to the constitutionally protected benefit of the Comptroller's freedom to exercise his independent judgment in fulfilling that duty. Therefore, the Comptroller's focus on the Fund's long term financial returns and risks must be paramount. This fundamental fiduciary obligation is the foundation upon which the Fund's investment philosophy, policies and strategies are based. Investment decisions must be guided by his fiduciary duty and cannot be driven by unrelated motives, no matter how compelling. The Fund invests broadly in all sectors of the economy. This diversity of investments helps balance risk and return in a prudent manner thereby enhancing the Fund's ability to support benefits to the Retirement System's participants on a perpetual basis.[17]

Current Investment Strategy

The Fund invests in several different asset classes including global equities (stock), fixed income (bonds and notes), and alternative investments such as private equity, real estate, absolute return, opportunistic and real assets. Through the Fund's asset allocation strategy, the Comptroller identifies the optimal diversified mix of assets needed to meet the Retirement System's obligations to its participants . Across the portfolio, the Fund holds "direct" investments, such as stock or bond holdings in the global equities and fixed income portfolios, or "indirect" investments, such as a commitment of funds to private equity investments in which the Fund is a limited partner.

As a long-term investor, the Fund has a robust diversification investment approach which capitalizes on market opportunities and weathers market ups and downs.

According to the New York State Comptroller's 2016 Common Retirement Fund Annual Report, the Fund's average five-year return is 10.17%, 10-year return is 7.12% and 20-year return is 8.69%. [18]



Courtesy of the Office of the New York State Comptroller, 2016

Investment Portfolio

Analysis of the Fund's 2017 Annual Report, long-term target allocation for the Fund's investment portfolio is 22 percent in fixed income assets (cash, bonds, mortgages and Treasury Inflation-Protected Securities or "TIPS") and 78 percent in equity, including domestic and international public equities as well as private equity investments, real estate, real assets, absolute return strategies, and opportunistic funds. [19]

Further, with respect to its global public equity portfolio, the Fund employs two basic investment strategies - passive and active. The vast majority of the Fund's public equity holdings are invested passively - that is, by replicating index funds. Through its passive investment strategy, the Common Retirement Fund does not select companies or sectors, rather it replicates an index fund - for example, the Russell 3000. The Fund rebalances its passively held public equities at least twice monthly to assure that its investments mirror the index fund. Index investing has proven to be a low cost, efficient and superior strategy for investing the Fund's significant public equities portfolio. In addition to indexed holdings, the Fund contracts with external managers to create externally managed public equity portfolios aimed at outperforming the market.

Methods Used to Value Investments [20]

Equity securities traded on a national or international exchange are reported at current quoted fair values.

Bonds and other fixed assets are primarily reported at fair values obtained from independent pricing services.

Mortgages are valued on the basis of future principal and interest payments and are discounted at prevailing interest rates for similar instruments.

Direct investments in real estate are valued based on independent appraisals made every three years or according to the fund agreement.

Real estate partnerships are reported at values provided by general partners. These values are based on discounted cash flows, comparative sales, capitalization rates applied to net operating income, or if none of the preceding fit a property's attributes and strategy, at cost.

For various alternative investments (private equity, absolute return strategies, opportunistic funds, and real assets) where no readily ascertainable fair value exists, management in consultation with its investment advisers will value these investments in good faith based upon reported net asset values, cash-flow analysis, purchases and sales of similar investments, new financings, economic conditions, other practices used within the industry, or other information provided by the underlying investment advisers. Because of the inherent uncertainty in privately held securities, the fair value may differ from the values that would have been used if a ready market for such securities existed, and the difference can be material.

The Fund trades in **foreign exchange** contracts in the normal course of its investing activities in order to manage exposure to market risks. Such contracts, which are generally for a period of less than one year, are used to purchase and sell foreign currency at a guaranteed future price. These contracts are recorded at fair value using foreign currency exchange rates.

The breadth of the Fund's investments, the allocation of its assets, and the manner in which it executes and manages those investments, reflect informed and deliberate investment strategies adopted by the Comptroller in furtherance of the position's fiduciary duty.

The following overview of the financial activity of the New York State and Local Retirement System (the System) for the fiscal year ended March 31, 2017 is intended to provide the reader with an analysis of the System's overall financial position. The System is comprised of the New York State and Local Employees' Retirement System (ERS) and the New York State and Local Police and Fire Retirement System (PFRS). This analysis stems from the latest information available by the New York State Office of the Comptroller.

2017 Financial Highlights

The fiduciary net position of the System held in trust to pay pension benefits was $197.60 billion as of March 31, 2017. This amount reflects an increase of $13.96 billion from the prior fiscal year. This change is primarily the result of the net appreciation of the fair value of the investment portfolio. Investment appreciation (depreciation) for the fiscal years ended March 31, 2017 and 2016 is $16.92 billion and $(3.93) billion, respectively.[21]

- The System's investments reported a positive money-weighted rate of return, net of investment expense, of 11.40 percent for the fiscal year ended March 31, 2017 and a positive money-weighted rate of return, net of investment expense, of 0.03 percent for the fiscal year ended March 31, 2016.

- Retirement and death benefits paid during fiscal year 2017 to 452,455 annuitants totaled $11.45 billion, as compared to $10.91 billion paid to 440,943 annuitants for fiscal year 2016. The increase is primarily due to the number of new retirees.

- Contributions from employers decreased to $4.79 billion for the fiscal year ended March 31, 2017, from $5.14 billion for the fiscal year ended March 31, 2016. The decrease in contributions is attributable to lower billing rates.

- The Net Pension Liability (NPL) for ERS was $9.40 billion for the measurement period ended March 31, 2017 as compared to $16.05 billion for the measurement period ended March 31, 2016. The fiduciary net position, restricted for pension benefits as of March 31, 2017, was $168.00 billion, which represents 94.7 percent of the calculated total pension liability for ERS. The NPL is allocated to participating employers and reported pursuant to Governmental Accounting Standards Board (GASB) Statements 67 and 68.

- The NPL for the PFRS was $2.07 billion for the measurement period ended March 31, 2017 as compared to $2.96 billion for the measurement period ended March 31, 2016. The fiduciary net position restricted for pension benefits as of March 31, 2017, was $29.60 billion, which represents 93.5 percent of the calculated total pension liability for the PFRS.

- The NPL is allocated to participating employers and reported pursuant to GASB Statements 67 and 68.

The Fund announced positive investment performance for the fiscal year ended March 31, 2017, with a time-weighted rate of return of 11.48 percent, a strong increase which reflected the strength of the global equity markets in the second half of the year. Both U.S. and international equity portfolios performed exceptionally well as global growth picked up pace. The Fund's alternative portfolios also added to performance, all having a positive year. Finally, despite talk of higher inflation and raising rates, the Fund's fixed income had a modestly positive year as well. General market volatility remained subdued and the Fund is closely monitoring this complacency in the market. This was the eighth consecutive year of positive performance for the Fund following the fiscal crisis of 2008.

Investment data provided by the New York State Office of the Comptroller. This is the most up to date available.

Climate Change and the NYSLERS

The Office of the New York State Comptroller, in public statements has acknowledged that based on scientific evidence – climate change is happening and human activity is a primary contributing cause. Further, the Comptroller has agreed that climate change presents material risks to and opportunities for the New York State Common Retirement Fund's investments. As a result, the Comptroller committed substantial resources to take responsible actions to mitigate these investment risks and to position the Fund to take advantage of investment opportunities as the world transitions to a low carbon economy. These initiatives have centered on corporate engagement and low carbon emission fund investment.

As the Trustee of the Fund, however, the Comptroller has determined that divestment of the Fund's fossil fuel holdings is not an appropriate response at this time.

A Seat at the Table – Engagement Over Divestment [22]

The following statement was provided by Vicki Fuller, Chief Investment Officer for the NYS Common Retirement Fund.

Climate risk has been a primary focus of the Fund's corporate engagement strategy throughout the Comptroller's tenure. This year, The Asset Owners Disclosure Project, an international organization established to protect retirement savings and other long-term investments from the risks posed by climate change, endorsed the Fund as the top fund in North America for our work to mitigate risks associated with climate change, giving the Fund its highest rating.

A recent example of the Fund's engagement strategy is the shareholder proposal we submitted to ExxonMobil together with the Church of England asking the company to assess and report on how its business model will be affected by global efforts to limit the average rise in temperatures to below two degrees Celsius. This resolution garnered the support of 38.2 percent of shareholders at the company's annual meeting in May this year, representing a record level of support for a climate change resolution at an Exxon annual meeting despite the board's recommendation that shareholders vote against the proposal.

Working with partners at Ceres – a non-profit organization advocating for sustainability leadership – and through its Investor Network on Climate Risk initiative and other institutional investors, the Fund has sponsored over 40 resolutions calling on portfolio companies to assess risks to their businesses posed by climate change and to develop strategies to address them. In 2015 we reached agreements with five of those companies to create reports on what they can do to help reduce carbon emissions by 80 percent by 2050. We also exercise active ownership through proxy voting by regularly supporting proposals asking companies for information about their greenhouse gas emissions and related policies and the setting of emission reduction targets.

The Fund's broad strategies to address climate risk are developed to overcome the consequences of a fragmented environmental regulatory landscape.

Climate change poses a risk that could affect the market as a whole. The Fund's public policy advocacy activity focuses on strengthening regulatory support for effective action to build well-designed markets and scale up low carbon investments. The Fund has supported specific climate change mitigation policies such as the Clean Power Plan, the production tax credit for wind and the investment tax credit for solar, low carbon fuels standards, carbon pricing and lowering the carbon cap under the Regional Greenhouse Gas Initiative, and the American Clean Energy and Security Act. We have used the Fund's "voice" as a shareholder in urging the Securities and Exchange Commission to promulgate and enforce robust rules requiring corporate disclosure of material carbon risks.

Divestment Risk

Decisions to divest are among the most complex investment decisions a trustee may face. As a fiduciary, in investing the Fund's portfolio the Comptroller is required to act prudently and solely in the interest of, and for the exclusive purpose of providing benefits to, the Retirement System's participants. Those participants are entitled to the benefit of the Comptroller's freedom to exercise his independent judgment in fulfilling that duty. Therefore, the Comptroller's focus on the Fund's long term financial returns and risks must be paramount.

This is not to say that an investment decision cannot have a "double bottom line." Investment decisions can, and sometimes do, extend the conventional bottom line that measures fiscal performance - financial profit or loss - by adding a second bottom line to measure their performance in terms of positive social impact. However, the conventional bottom line must always be the primary motivating factor for investment decision making by a fiduciary.

In those limited instances in which the NYSLERS Fund has divested, the Fund did so to mitigate an identified, unacceptable level of investment risk and, even then, only when satisfied that the Fund's investment returns would not be negatively impacted. Whether investment decisions are consistent with the Comptroller's fiduciary duty must be analyzed on a case-by-case basis. That analysis starts and ends with the expected impact the investment decisions will have on the Fund and whether it would benefit the Retirement System's participants. [23]

Divestment is indiscriminate. It preempts thoughtful fiduciary analysis to assess the impact on the Fund.

With respect to a broad-based restriction on all investments in fossil fuel producers, or even in the so-called CU200 companies, such action is not consistent with the Comptroller's fiduciary duty. First, such a sweeping action is indiscriminate. It preempts the thoughtful analysis a fiduciary is required to undertake to assess the expected impact on the Fund. Second, an industry or sector-wide restriction disregards the fact that the Fund is strategically and broadly invested across all sectors and industries to best enhance returns and balance risk. Prohibiting investments in a selected sector such as fossil fuel companies would disrupt this strategy.

One of the benefits of the Fund's passive investment strategy is that market forces choose winners and losers. By that, industries or sectors that lose value may be balanced by industries or sectors that gain value. So, if the fossil fuel industry loses value, the index will reflect that fact by adjusting the industry's weight in the mix of companies. And, if an out of favor industry or sector recovers and outperforms in later periods, its weight in the index will be adjusted to reflect its performance. The Fund's public equity exposure to a sector or industry that is declining in value, therefore, is reduced automatically in response to the reality of the market. The index strategy efficiently protects the Fund from volatility in the fossil fuel industry. And the Fund's interests are also protected in it's actively managed public equity portfolio because the compensation structure for the Fund's external managers aligns their interests with those of the Fund. It is in their best interests if our accounts outperform the market. [26]

Both sides of the divestment debate agree that fossil fuel is a historic and global driver of the world's energy - one that has been ingrained into industry, workforce development, and tangible sunk assets. While renewable energy is coming online the reliance on fossil fuels is a reality and that will not end tomorrow. The reality is that fossil fuels are not only sector based investment but have significant impact of diversified portfolios. Additionally, fossil fuels are meaningfully integrated into nearly every facet of the global business sector. To divest immediately would be akin to telling the world not to breath air.

As the Fund's fiduciary, the Comptroller has consistently upheld that it is prudent to maintain investments in those companies whose products are driven by consumer demand. Active engagement with these companies is an integral component of addressing investment risk and as essential to effectuating long-term business model changes that will meaningfully reduce those risks. These companies will have a large impact on global efforts to meet the aggressive goals to address climate change. As such, continued engagement at this time remains the best way to not only protect the interests of the Fund, but also to persuade the companies to acknowledge and address the move to a low carbon economy. Selling shares to other investors who might not share our concerns about these issues or worse deny climate change and support the status quo is not a wise option.[27]

The New York State Comptroller has concluded that sector-focused divestment is not the most effective way to produce change and does not comport with his fiduciary duty to the Fund's participants.

Proposed Regulatory Action in New York State

Fossil Fuel Divestment Act (S.5873/A.8011), which would require the State Comptroller to divest the Common Retirement Fund (CRF) from fossil fuel holdings by 2020.

An act to amend the retirement and social security law, in relation to limitations on investments of public pension funds (S.4596 / A.3712), which directs the State Comptroller to divest the New York State Common Retirement Fund from companies engaged in the production of fossil fuels.

1.5 degree Celsius Aligning New York City with the Paris Climate Agreement, The New York City Mayor's Office of Sustainability have identified actions that the city's various agencies need to take within the next few years when it comes to recycling, energy consumption, transportation, waste management, buildings, and carbon neutrality.

Conclusion: Divestment Impact in Detail

The aforementioned Global Analytics' data, produced by an independent actuary and vetted by internal actuaries, confirms the notion that sector based divestment would adversely affect the New York State Retirement System and result in a significant increased pension contribution by local governments. **Divestment losses would jeopardize critical civic services such as public safety, healthcare, and education, which according to the 2018 budget for the State of New York account for 74% of budget spending. The losses from divestment would mean that State and local governments would have to cut critical services or raise taxes to ensure that the pension system is funded.**

This data is further confirmed on a national scale by the June 2017 report "Fossil Fuel Divestment and Public Pension Funds." This report, written by Daniel Fischel of the University of Chicago, provided a 50-year retrospective sample period and focused on the eleven largest pension funds in the United States. The study found that "an optimal equity portfolio including fossil fuel stocks outperforms a portfolio of equal risk that is divested of energy stocks by an average of 0.5 percent per year." [28]

Of particular importance was Fischel's study of the New York City Pension System. Clearly New York City and New York State are different animals. However, based on the New York State and City actuarial data, and initial and fifty year fund projections, the ramifications from divestment of fossil fuels are troublingly similar. This data would project losses in the trillions should divestment from fossil fuels be implemented in New York State.

As both Fischel's and our data point out, there are additional costs to divestment. These costs include transaction costs and compliance costs and establish the unknown of stranded assets. These expenses are funds that must be paid for in some way - either in increased taxes, cuts to vital programs, or significantly lower pension payouts. All of these scenarios would undercut local economies and affect the households of thousands of pensioners.

While the financial losses of divestment are important; it is equally important to understand that there are no clear alternatives to fossil fuels that can satisfy the global energy appetite. Alternatives to fossil fuels lack the scalability and capability to meet the growing energy needs of not just the United States, but the economies of China and India where populations are growing at unprecedented rates.[29]

In addition to not having a suitable alternative of scale; divestment, particularly from public retirement funds is counter to the purpose of those funds. An individual's investment decision affects the individual; however, the Fund's decision affects thousands of families and the stability of the State or local government's economy. This potential withdrawal from sector based and diversified funds would send markets in a tailspin as uncertainty over the rate of return from alternative fuels would cause wide-spread panic.

It is a venerable concept to think divesting from fossil fuels would provide the "silver bullet" for climate change; however this is tom foolish and does not take into account the large and generational role this natural resource has had on global markets. Any divestment consideration must be gradual and be guided by market forces and sector development. Today, passive investment in low carbon footprint funds are emerging as a meaningful method to reduce CO2 emissions and remain consistent with market dynamics. These types of funds have been guided by demand and are firmly based on stable returns. This presents a smart, meaningful approach where investors have a seat at the table and guide long term sustainable solutions.

At present and in the foreseeable future divestment from fossil fuels would be restrictive and harm New York State's Retirement System and the stability of pensioners.

End Notes

This report owes significant acknowledgement to the actuaries of Foster and Foster and the in-house actuarial staff at Global Analytic Services The credit for writing group lead is attributed to Mark Sheeran. Additionally this report team wishes to thank the professors at Harvard University and University of Chicago for their guidance and wealth of knowledge on fossil fuel divestment and labor.

Sources

4 - BlackRock Investment Institute. "The Price of Climate Change." BlackRock Institute. Washington, DC. 2015.
6,7 - Baron, Richard. "Divestment and Stranded Assets." 32 nd Round Table on Sustainable Development. OECD Headquarters, Paris. October 2015.
10 - Bessembinder, Hendrick. "Frictional Costs of Fossil Fuel Divestment". 2015
15, 20, 26 - DiNapoli, Thomas. "NYS Environment Social and Governance Report." NYS Office of the Comptroller. New York, NY March 2017.
1 ,2 - Ernst and Young Global Corporate Divestment Study, 2014
28 - Fischel, Daniel. "Fossil Fuel Divestment and Public Pension Funds." University of Chicago. Chicago, Illinois. 2017.
8, 9 - Fischel, Daniel. "Fossil Fuel Divestment: A Costly and Ineffective Investment Strategy." University of Chicago. Chicago, Illinois. 2015
17, 22, 23, 27 - Fuller, Vicki. "In or Out: A Roundtable on Fossil Fuel Divestment." Baruch College. New York, NY. October 2016.
Mankins, Michael. "How the Best Divest." Harvard Business Review. Cambridge, MA. 2016
7, 12, 14, 16, 19, 21 - NYSLERS. "2017 Comprehensive Annual Financial Report." Office of the NYS Comptroller. New York, NY. 2017
6, 13, 18 - NYSLERS. "2016 Comprehensive Annual Financial Report." Office of the NYS Comptroller. New York, NY. 2016
2018 NYS Budget. www.openbudget.ny.gov/overview.html
3, 5, 29 - United Nations / Framework Convention on Climate Change, 2015. Adoption of the Paris Agreement
11 - See, "Moody's: U.S. states' FY 2015 net pension liabilities reach $1.25 trillion, with more growth to come," Moody's Press Release, October 6, 2016. See also, "2016 Public Pension Funding Study," Milliman White Paper.We included common stock, preferred stock, and warrants in the analysis, but excluded REITs, even though these are sometimes classified by the pension funds as equity.
SIC code 6798 is associated with Real Estate Investment Trusts, and, as noted above, all securities classified in this SIC code were eliminated from the analysis. Furthermore, SIC codes 6722 and 6726 are associated with open-end and closed-end funds, respectively. As noted above, we attempted to identify the specific holdings of these funds and classify each of those specific holdings into an SIC. If holdings were not available for assets with these two codes, they were determined to be unclassified. In addition, assets that were classified as funds by the pension itself, but for which holdings were not available, were also determined to be unclassified.
Global Analytic Services is not responsible for any **errors or omissions** associated with this report.
Excess return is the return minus the 3-month secondary market Treasury bill rate. To calculate the average annual excess return for a particular stock, we subtracted the Treasury bill rate from each month, quoted on a monthly basis, from the monthly return of the stock. Then, we found the average of the excess return over all months in the sample, and annualized this average by multiplying by 12. Similarly, the standard deviation was found by finding the standard deviation of excess returns over all months in the sample, and then by multiplying by $\sqrt{12}$.
Scaling the mean and standard deviation by the same factor essentially amounts to investing a portion of the portfolio in 3-month Treasury bills and the remaining portion in the unadjusted divested portfolio, with precise weights chosen so that the volatility of the risk-adjusted divested portfolio matches the volatility of the original nondivested portfolio.
Graphic Sources and non-original data are designated with integrated notes
Global Analytic Services, LLC . Party for Release: SUFFOLK COUNTY ASSOCIATION OF MUNICIPAL EMPLOYEES
Confidentiality Statement:The information contained in this white paper document is confidential and is intended only to be viewed by the recipient (s) listed above. If you are not the intended recipient (s), you are hereby notified that any distribution, reproduction, alteration or copying of this document is strictly prohibited without the explicit written approval of Global Analytic Services, Inc. Written service can be sent via certified mail to 112 Lincoln Ave, Ste. 217, Bronx, New York 10454. Any violation of the above statement may be subject to legal action at the discretion of Global Analytics Services, Inc.

Opinions

Rather than give up its seat at the table by divesting, the state pension fund leverages its role as a large institutional investor to engage with companies as a shareholder to address the goals of the Paris Agreement. ... We believe that we can actively engage with companies in building a cleaner, sustainable global economy, while fulfilling our fiduciary duty to maximize the long-term value of the fund through profitable investments.

Hon. Thomas DiNapoli

New York State Comptroller

Significantly constraining investment options risks significantly constraining investment returns. The endowment provides more than one-third of the funds we expend on University activities each year. Its strength and growth are crucial to our institutional ambitions — to the support we can offer students and faculty, to the intellectual opportunities we can provide, to the research we can advance. Despite some assertions to the contrary, logic and experience indicate that barring investments in a major, integral sector of the global economy would — especially for a large endowment reliant on sophisticated investment techniques, pooled funds, and broad diversification — come at a substantial economic cost.

Drew G. Faust, President

Harvard University

The Comptroller has implemented many initiatives to protect the Fund's investments from the risks posed by climate change, using the Fund’s shareholder voice to promote change and considering relevant environmental, social and governance factors in investment decisions. As the Trustee of the Fund, however, the Comptroller has determined that divestment of the Fund’s fossil fuel holdings is not an appropriate response at this time.

Vicki Fuller, Chief Investment Officer

New York State Common Retirement Fund

Divestment would cost pension funds trillions of dollars, an outcome that likely would significantly harm returns for pensioners. Given the unique role of the energy sector in the economy, investors who chose to remove traditional energy from their investments reduce the diversification of their portfolios and thereby suffer reduced returns and greater risk....Divestment may seem noble, but it has real financial implications for pension funds, many of which are already struggling to provide reliable investment returns to beneficiaries.”

Daniel Fischel, Professor

University of Chicago Law School