

The Financial Contribution of Oil and Natural Gas Company Investments To Major Public Employee Pension Plans in Seventeen States, 2005 – 2009: New Mexico¹

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This report examines the financial impact of investments in oil and natural gas companies on the overall performance of the two largest public employee pension funds in each of seventeen states.² The data show these investments sharply out-performed the funds' other assets. From 2005 to 2009, spanning both vigorous expansion and deep recession, the share of the funds' returns attributable to oil and natural gas investments in New Mexico was 4.0 times greater than their share of those funds' assets.

Total Assets, Oil and Natural Gas Assets, and Returns on Those Assets, Two Largest Pension Funds in New Mexico, 2005 – 2009³

State	Total Assets (billions)	Oil and Natural Gas Assets (billions)	Oil and Natural Gas Assets As a Share of Total Assets	Returns from Oil and Gas Assets as a Share of All Returns	Ratio of Oil and Natural Gas Asset Returns to Their Share of Total Assets
NM	\$20.9	\$1.0	4.7%	19.0%	4.0 to 1

- In New Mexico, the two largest public pension funds account for 98 percent of the total membership, but using different classifications, the Census data suggest that they account for only 31 percent of all assets of all public employee pension programs in the state.
- The oil and natural gas investments by New Mexico's two largest public pension plans accounted for 4.7% of those funds' total assets while contributing 19% of those funds' total gains, for a ratio of 4.0 to 1.

New Mexico's Two Largest Public Employee Retirement Plans: Rates of Return from Oil and Natural Gas Investments and All Other Investments, 2005-2009⁴

	Return on \$1 invested in Oil and Natural Gas Stocks	Return on \$1 invested in Non-Oil and Natural Gas Investments	Ratio of Oil and Natural Gas Returns to Returns on All Other Assets
NM	\$1.41	\$1.02	20.5 to 1.0

- The five-year rate of return on oil and natural gas investments in the two largest pension funds in New Mexico was 41%.
- The five-year rate of return on all other investments was 2%.
- Over the period 2005-2009, oil and natural gas investments in the two largest pension funds in New Mexico outperformed the returns of other investments by 20.5 times.

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² We use "oil and gas company holdings" synonymously with "energy sector holdings" in this report, as oil and gas companies comprise 98 percent of the value of the S&P Energy Sector Index and the vast majority of energy sector holdings in the public employee pension funds examined here. The current S&P 500 Energy Sector Index is comprised of 60 percent integrated oil & gas companies; 18 percent oil & gas exploration and production enterprises; 14 percent oil and gas equipment and services firms; 3 percent oil and gas storage and transportation companies; 2 percent oil and gas drilling firms; and 1 percent oil & gas refining & marketing. Coal and consumable fuels account for the remaining 2 percent of the Index.

³ Comprehensive Annual Financial Report of Public Schools Employees Retirement Systems and State Employees Retirement System and authors' estimates.

⁴ *Ibid.*

Methodology

This study has estimated the financial impact of oil and gas company stocks on the returns achieved by the major public pension plans in the seventeen states of California, Florida, Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Nebraska, New Hampshire, New Mexico, New York, North Dakota, Ohio, Pennsylvania, South Carolina, and West Virginia, over the five-year period from FY 2005 to FY 2009. For each state, we selected the two largest state pension funds, covering public school employees and state government employees. Across the seventeen states analyzed here, these two public pension plans account for some 60 percent of the total assets and membership of all public pension plans in those states. The public pension plans in each state follow broadly similar investment strategies. For our estimates of the contribution of oil and natural gas company stocks to all public pension plan in a state, we apply the energy holdings as a share of the total assets and the annual returns of those holdings for the two largest pension plans to the aggregate holdings of all of a state's public pension assets.

For each state, we collected five years of investment data from the Comprehensive Annual Financial Reports (CAFRs) of the two largest public pension funds, including their total assets, asset allocations across classes of financial instruments, holdings by sector (including energy), and annual returns by asset class and sector. The asset allocations are reported for U.S. equities, international equities, fixed income securities, and other asset classes (cash, short-term instruments, real estate and alternative investments), in dollar amounts and as percentages of total assets. When a fund did not report its investments in the oil and natural gas sector, we use the energy sector's share in the S&P 500 to estimate the pension fund's holdings of oil and natural gas stocks. For example, energy companies accounted for 9.3 percent of the value of the S&P 500 index in 2005, 9.8 percent in 2006, 12.9 percent in 2007, 13.3 percent in 2008, and 11.5 percent in 2009.⁵ We also use each fund's reported exposure to the oil and natural gas sector and the S&P 500 Energy Sector as a proxy for oil and gas company holdings and the return of the funds' oil and gas company holdings. The S&P 500 Energy Sector is comprised almost entirely of oil and gas companies, with oil and gas companies accounting for 98.1 percent of the current S&P Energy Sector.⁶

To estimate the holdings and returns for all public employee pension plans in a state, we use aggregate data reported by the U.S. Census Bureau on each state, including total assets, asset allocations, memberships, and benefits. Since the Census Bureau does not report oil and natural gas sector holdings by state, we apply the share of total holdings in oil and natural gas stocks for the state's largest pension plan in each year to the state-wide level. If a state's two largest public pension plans do not report their oil and natural gas sector holdings, we apply the share of oil and natural gas stocks in the S&P 500 and the returns of the S&P 500 Energy Sector.

⁵ The domestic equity benchmark for public pension fund systems is typically based on a blend of several index benchmarks, such as the S&P 500, the Russell 3000, and the Wilshire 5000. Since the returns of financial indices are highly correlated over time, our results are not biased by our reliance on the S&P's index.

⁶ Again, the breakdown of the current S&P Energy Index: 60.3 percent integrated oil & gas companies; 17.75 percent oil & gas exploration and production; 14.11 percent oil and gas equipment and services; 2.66 percent oil and gas storage and transportation; 1.96 percent oil and gas drilling; and 1.29 percent oil & gas refining & marketing. Coal and consumable fuels account for 1.92 percent of the Index.

In calculating the contribution of oil and natural gas stocks to each plan's assets and returns, we first estimate the plan's annual capital gains and losses based on its annual returns and assets. Next, we estimate the capital gains and losses of the plan's oil and natural gas sector holdings each year based on its oil and natural gas assets and the annual return of the S&P 500 Energy Sector Index. Finally, we use the fund's total capital gains and losses each year and the capital gains and losses of its oil and natural gas sector holdings to estimate the contribution of oil and natural gas sector companies to the fund's overall returns.⁷

One important caveat in comparing the investment performance of these states, noted earlier, is that data are reported for each state's fiscal year, which differs from state to state. For example, the fiscal year ends on June 30 in Illinois, March 31 in New York, September 30 in Michigan, and December 31 in Ohio. These differences have significant effects on asset performance in FYs 2008 and 2009, including the performance of oil and gas company assets in those years. The aggregate data for all public employee pension plans reported by the Census Bureau covers only FYs 2005-2008. Thus, the data for states with fiscal years that end relatively early in the year do not include the sharp drops in the second half of 2008. Similarly, the data for the two largest pension plans in states with fiscal years that end relatively early do not include the recovery of equity value in the second half of 2009. Nevertheless, the patterns hold across all seventeen states: The returns on investments in oil and gas companies held by state public pension plans significantly outperform the average returns on their other investments.

The remainder of this study provides the analysis, state by state, of the impact of oil and natural gas company investments on the performance of state public employee pension funds.

⁷ The funds do not report dividends by company or sector, so we could not separately track dividend. However, following standard economic analysis, the value of a company's dividends is reflected in its stock price.

New Mexico

The Two Largest Public Pension Plans

We collected data on the investment portfolios and performance of the two largest public employee retirement plans in New Mexico, the Public School Employees' Retirement System (PSERS) and the State Employees' Retirement System (SERS), for fiscal years 2005-2009. Over these five years, the two plans had total assets averaging \$20.9 billion and a combined average membership of 200,389, including current retirees, current employees, and former or inactive employees. (Table NM-1, below) The two plans held oil and natural gas-sector investments averaging nearly \$1.0 billion or 4.7 percent of the two plans' total assets. The two plans report that they represent 98 percent of all members; but using different classifications, the Census data suggest that they account for 31 percent of all assets of all New Mexico public employee retirement plans. The different classification systems cannot be reconciled.

Table NM-1. New Mexico's Two Largest Public Employee Retirement Plans: Members, Total Assets and Oil and Natural Gas Assets, Annual Average, 2005-2009⁸

	Total Members	Total Assets (\$ billions)	Oil and Natural Gas Assets (\$ billions)	Oil and Natural Gas Assets as a Share of All Assets
Total	200,389	\$20.856	\$0.985	4.7%
PSERS	121,915	\$9.515	\$0.436	4.6%
SERS	78,474	\$11.341	\$0.549	4.8%

The cumulative rate of return on the assets of these two large plans was about 8 percent for the five years. (Table NM-2, below) Their oil and natural gas assets produced a 41 percent return over this period, while the return on the rest of their portfolios was just about 2 percent. The two plans generated total gains of nearly \$3.5 billion over this period, including \$661 million in gains from their investments in oil and natural gas stocks. As a result, oil and natural gas investments which represented 4.7 percent of the two plans' total assets contributed 19.0 percent of the two plans' total gains.

Table NM-2. New Mexico's Two Largest Public Employee Retirement Plans: Rates of Return and Gains, Overall and from Oil and Natural Gas Investments, FYs 2005-2009⁹

	Return on \$1 invested in Plans	Return on \$1 invested in Oil and Natural Gas Stocks	Return on \$1 invested in Non-Oil and Natural Gas Investments	Total Gains by Plans (millions)	Gains from Oil and Natural Gas Investments (millions)	Gains from Oil and Natural Gas as Share of All Gains
Total	\$1.08	\$1.41	\$1.02	\$3,478.6	\$661.4	19.0%
PSERS	\$1.13	\$1.41	\$1.08	\$1,968.9	\$355.1	18.0%
SERS	\$1.02	\$1.41	\$0.94	\$1,509.7	\$306.3	20.3%

⁸ Comprehensive Annual Financial Report of Public Schools Employees Retirement Systems and State Employees Retirement System and authors' estimates.

⁹ *Ibid.*

All New Mexico Public Employee Retirement Programs

To estimate the impact of oil and natural gas stocks on the returns on all New Mexico public employee retirement programs, we use the annual Census Bureau data on public employee retirement systems by state, covering only FYs 2005 to 2008. Since the returns on all investments and on oil and natural gas investments fell sharply in late 2008 and 2009, the four years of aggregate data cannot be strictly compared to the five years of data on the large plans. The data do show that all public employee retirement plans in New Mexico covered 23,786 retirees and beneficiaries, 51,503 active employees, and 3,184 inactive employees. The monthly benefit under these pension plans averaged \$1,774. The data also show the allocation of assets for public employee retirement plans in New Mexico for FYs 2005-2008. (Table NM-3, below)

**Table NM-3. All New Mexico Public Employee Retirement Plans:
Asset Allocations, FYs 2005-2008¹⁰**

Fiscal Year	Total	US Stocks: All Sectors	US Oil and Natural Gas Stocks	International Equities	Fixed Income	Other Assets
<i>As percentage of total assets</i>						
2005	100.0%	44.5%	4.1%	19.7%	26.8%	9.0%
2006	100.0%	41.9%	4.1%	23.5%	26.2%	8.5%
2007	100.0%	41.8%	5.4%	24.3%	24.7%	9.3%
2008	100.0%	32.7%	4.4%	22.0%	19.2%	26.1%
<i>In millions of US dollars</i>						
2005	\$18,980.3	\$8,450.3	\$785.9	\$3,742.2	\$5,080.5	\$1,707.3
2006	\$20,236.7	\$8,473.9	\$830.4	\$4,747.8	\$5,304.6	\$1,710.4
2007	\$23,119.9	\$9,660.3	\$1,246.2	\$5,610.2	\$5,700.8	\$2,148.6
2008	\$23,821.7	\$7,800.6	\$1,037.5	\$5,249.8	\$4,562.2	\$6,209.0

These data further show that the overall performance of New Mexico public pension plans from July 2004 to June 2008 (the state's fiscal year ends June 30) was stronger than that of the two largest plans from FY 2005 to FY 2009. This reflects the differences in the two time periods: In FY 2009, from July 1, 2008 to June 30, 2009, the value of all assets held by these funds declined by 17 percent to 24 percent, while the value of the system's oil and gas assets fell 43 percent. (See Appendix, Tables A-NM-3 and A-NM-6) The four-year data show that that \$1.00 invested in the New Mexico public employees' retirement system in July 2004 grew to \$1.34 in June 2008. Over this period, \$1.00 invested in oil and gas stocks grew to \$2.48. If the system had not held oil and natural gas stocks, \$1.00 invested in 2005 would have grown to \$1.23 in 2008.

Even without data from mid-2008 on, the annual returns fluctuated significantly over the four years, ranging from 18.1 percent to negative 7.4 percent for all assets and from 20.3 percent to 36.5 percent for oil and natural gas assets. (Table NM-4) Although this period is less representative without the second half of 2008 and the first half of 2009, when oil and natural gas shares fell sharply, we estimate that oil and natural gas assets contributed \$982 million of the

¹⁰ U.S. Census' State & Local Government Employee Retirement Systems; Comprehensive Annual Financial Report; and authors' estimates.

system's net \$6.7 billion in returns in the period. Thus, oil and natural gas assets representing 4.5 percent of total system holdings contributed 14.7 percent of its gains for this period.

Table NM-4. All New Mexico Public Employee Retirement Plans, Returns and Gains for All Assets and for Oil and Natural Gas Investments, FYs 2005-2008¹¹

Fiscal Year	Annual Return on All Assets	Annual Return on Oil and Natural Gas Stocks	Return on \$1 of All Assets Invested in 7/2004	Return on \$1 in Oil & Natural Gas Assets Invested in 7/2004	Return on \$1 of Non-Oil and Natural Gas Assets Invested in 7/2004	Capital Gains from All Assets (millions)	Capital Gains from Oil and Natural Gas Investments (millions)
7/2004			\$1.00	\$1.00	\$1.00		
2005	9.9%	36.5%	\$1.10	\$1.36	\$1.04	\$1,879.1	\$286.8
2006	11.7%	20.3%	\$1.23	\$1.64	\$1.16	\$2,367.7	\$168.3
2007	18.1%	24.5%	\$1.45	\$2.04	\$1.34	\$4,184.7	\$305.2
2008	-7.4%	21.4%	\$1.34	\$2.48	\$1.23	(\$1,762.8)	\$221.9
Total						\$6,668.6	\$982.3

¹¹ *Ibid.*

References

New Mexico State Public School Teachers Retirement System (2005-2009) “Comprehensive Annual Financial Report.”

New Mexico State & Local Retirement System (2005-2009) “Comprehensive Annual Financial Report.”

Standard & Poor’s.

U.S. Census’ State & Local Government Employee Retirement Systems.

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Robert J. Shapiro is the chairman and co-founder of Sonecon, LLC, a private firm that advises U.S. and foreign businesses, governments and non-profit organizations on market conditions and economic policy. He is also a Senior Fellow of the Georgetown University School of Business, an advisor to the International Monetary Fund, director of the Globalization Initiative at NDN, chair of the U.S. Climate Task Force, co-chair of the America Task Force Argentina, and a director of the Ax:son-Johnson Foundation in Sweden. From 1997 to 2001, Dr. Shapiro was Under Secretary of Commerce for Economic Affairs. In that post, he directed economic policy for the Commerce Department and oversaw the nation’s major statistical agencies, including the Census Bureau before and during the 2000 decennial census. Prior to that, he was co-founder and Vice President of the Progressive Policy Institute, Legislative Director for Senator Daniel P. Moynihan, and Associate Editor of *U.S. News & World Report*. Dr. Shapiro also served as the principal economic advisor to Governor Bill Clinton in his 1991-1992 presidential campaign, and senior economic advisor to Vice President Albert Gore, Jr. and Senator John Kerry in their presidential campaigns. In the 2008 campaign, he advised the campaign and transition of Barack Obama. Dr. Shapiro has been a Fellow of Harvard University, the Brookings Institution, and the National Bureau of Economic Research. He holds a Ph.D. and M.A. from Harvard University, a M.Sc. from the London School of Economics and Political Science, and an A.B. from the University of Chicago. He is widely published in scholarly and popular journals.

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