

The Impact of Easing Investment Restrictions on Downstate Illinois Police and Fire Pension Funds

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I. Executive Summary

In Illinois, retirement benefits are provided to police officers and firefighters through local pension funds. As of the end of fiscal year 2017, there were 643 pension funds for police officers and firefighters across the state. State law places limits on the types of securities that these pension funds can own. These limitations are particularly prohibitive for smaller funds. While these limitations reduce risk for funds, they also limit potential investment returns.

PURPOSE OF REPORT The Illinois Public Pension Fund Association (IPPFA) retained Anderson Economic Group to estimate the impacts of easing investment restrictions on pension fund with less than \$10 million in assets.

OVERVIEW OF APPROACH We constructed an investment returns model to simulate future returns for police and fire pension funds under two scenarios—baseline and universal restrictions. In our baseline scenario, we projected future returns for police and fire pension funds with less than \$10 million in assets if they continue to invest how they currently do in accordance with Illinois statutory investment restrictions. Under our universal restrictions scenario, we projected future returns for police and fire funds with less than \$10 million in assets if these funds were allowed to invest according to the rules for funds with more than \$10 million in assets.

See “Appendix A. Methodology” on page A-1 for more details on our methods and sources.

OVERVIEW OF FINDINGS

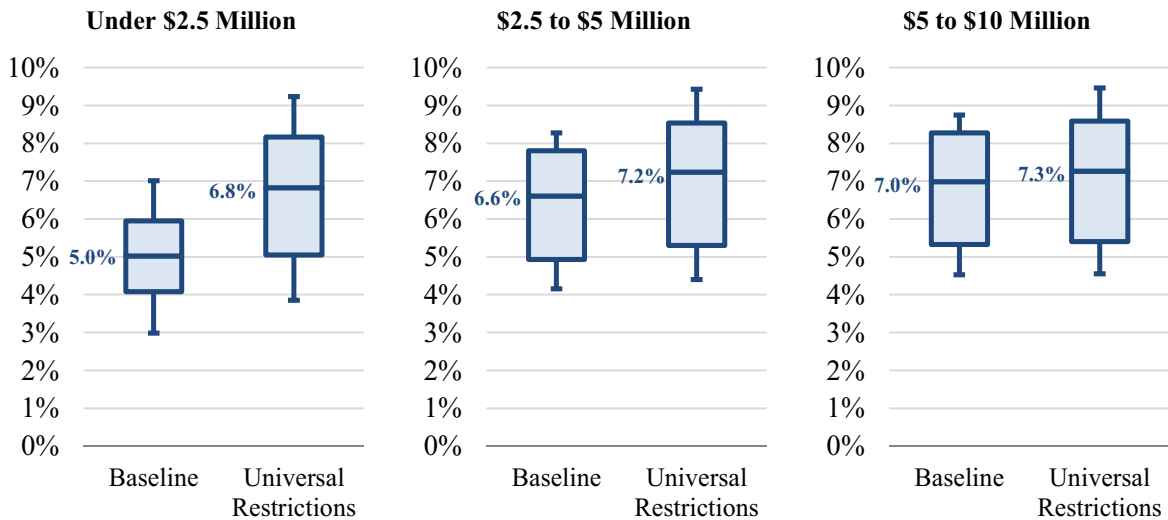
1. Easing investment restrictions on funds with less than \$10 million in assets would increase average annual returns by hundreds of millions of dollars over twenty years, in total. The gains for the smallest funds would average almost two percentage points per year.

Easing investment restrictions to allow funds with less than \$10 million in assets to invest how funds with over \$10 million in assets currently invest would lead to greater investment returns for these funds over the long term. These increased returns would be greatest for funds with less than \$2.5 million in assets, which face the greatest investment restrictions. If funds with less than \$2.5 million in assets were allowed to invest how funds with \$10 million or more invest today, there would be an average increase in real returns from 5.0% per year to 6.8% per year for 20 years.

Over a 20-year period, the returns from a more aggressive portfolio for all funds with less than \$10 million in assets would be hundreds of millions of dollars higher than projected under the current asset allocation. Conservatively, we estimate that the change in investment returns over 20 years will total \$418 million, even before taking into account the likely net increase in assets due to higher

contributions in coming years. We show our projected median real annual rate of return for funds of different sizes in Figure 1 under a “baseline restrictions” scenario in which funds continue to invest as they currently are, and under a “universal restrictions” scenario in which all funds transition to a portfolio similar to that held by funds with over \$10 million in assets.

FIGURE 1. Police and Fire Pension Fund Estimated 20-Year Real Annual Return under Current and Universal Restrictions Rules



Note: Boxes represent 25th, 50th, and 75th percentile of future projected returns. Whiskers represent minimum and maximum projected returns.

Source: Anderson Economic Group analysis of base data from Illinois Department of Insurance, Matrix Book 2018, U.S. Federal Reserve.

For a full discussion of rates of return associated with easing investment restrictions, see “Asset Restrictions on Smaller Funds” on page 4.

2. Easing investment restrictions on funds with less than \$10 million in assets will result in higher returns within 20 years with near certainty, even when taking into account the higher volatility of returns from riskier assets.

We ran a total of 63 randomized projections, using a probability distribution of projected returns, to estimate returns for pension funds of each size—less than \$2.5 million, \$2.5 to \$5 million, and \$5 to \$10 million—over 20 years. In 62 of the 63 projections, returns were greater with relaxed asset restrictions than under the status quo.

We also ran a total of 93 projections for each fund size over 10 years. We found that 83 of the 93 projections resulted in better performance relative to the current asset allocation. We show these findings in Table 1 below.

For a full discussion of rates of return associated with easing investment restrictions, see “Asset Restrictions on Smaller Funds” on page 4.

TABLE 1. Projected Police and Fire Pension Fund Returns for Fund with Less Than \$10 Million in Assets Under Current and Universal Investment Restrictions Scenarios, 10- and 20-Year Periods

	10-Year	20-Year
Number of Projections Run	93	63
Number of Projections in which Universal Restrictions Result in Greater Returns	83	62
Odds that Universal Restriction Projections Result in Greater Returns	89%	98%

Source: Anderson Economic Group analysis of base data from Illinois Department of Insurance, Matrix Book 2018, U.S. Federal Reserve.

ABOUT ANDERSON ECONOMIC GROUP

Anderson Economic Group, LLC is a boutique research and consulting firm, with offices in East Lansing, Michigan and Chicago, Illinois. The experts at AEG specialize in strategy, business valuation, public policy, and market analyses. They have conducted nationally-recognized actuarial, economic, and fiscal impact studies for private, public, and non-profit clients across the United States.

The consultants at Anderson Economic Group have a deep understanding of public pension policy, and have completed pension reform analyses for clients across the country, including Oregon, Michigan, and Illinois.

For more information, please see “Appendix B. About Anderson Economic Group” on page B-1 or visit www.AndersonEconomicGroup.com.

II. Asset Restrictions on Smaller Funds

The Illinois Pension Code splits police and fire pension funds into four size categories based on total assets—less than \$2.5 million, \$2.5 million to \$5 million, \$5 million to \$10 million, and over \$10 million. Funds in each category face statutory restrictions on how they may invest money. Funds with fewer assets must hold lower risk investments such as certificates of deposits and government bonds, while funds with more assets may invest in higher-risk securities such as stocks and mutual funds.

Even for the largest funds, there are still considerable restrictions on the amount of risk a fund can take. For example, the fund portfolios cannot invest more than a small share of assets in any given fund or stock. Also, pension funds can only invest in mutual funds that have a diversified portfolio.

There are 653 downstate police and fire pension funds in Illinois. Approximately half of these—53%—have assets of more than \$10 million. We show the count of funds in each size class and the investment restrictions for each class in Table 2.

TABLE 2. Investment Restrictions for Illinois Police and Fire Pension Funds

Fund Size	Count of Funds	Percentage of Fund Assets that may be Equities	Permitted Equity Investments
Less than \$2.5 Million	123	10%	Separate Accounts of Life Insurance Companies Diversified Mutual Funds
\$2.5 to \$5 Million	83	45%	Separate Accounts of Life Insurance Companies Diversified Mutual Funds
\$5 to \$10 Million	102	45%	Separate Accounts of Life Insurance Companies Diversified Mutual Funds Common and Preferred stocks of a U.S. corporation
Over \$10 Million	345	65%	Separate Accounts of Life Insurance Companies Mutual Funds Common and Preferred stocks

Sources: Illinois Statute §40.5.1-113.4, COGFA, “Downstate Police & Fire Pension Funds in Illinois,” 2017.

III. Results of Portfolio Transition Analysis

EASING INVESTMENT RESTRICTIONS

Easing investment restrictions for funds with less than \$10 million in assets would allow funds to invest in higher-risk securities that provide greater long-term rates of return. We created an investment returns model to simulate the effects of easing investment restrictions on these funds. We ran the model under two scenarios—“baseline” and “universal restrictions.” The baseline scenario projects returns for the funds in each size class as they are currently invested. The universal restrictions scenario projects returns for the funds in each size class if the funds were allowed to invest according to the restrictions applied to funds with over \$10 million in assets.

We ran both scenarios multiple times over 10- and 20-year time periods to establish a range of real annual returns for each size class. In the baseline scenario, we assumed that pension funds would rebalance themselves each year to their current asset allocation. In our universal restrictions scenario, we assumed that funds would transition over a period of five years from their current asset allocation to a more aggressive asset allocation that matches the typical portfolio if funds were over \$10 million today. This transition would occur as funds gradually sell their current securities or wait for them to mature, and then purchase more aggressive ones.

We provide a full breakdown of the asset allocation of funds by size class in “Fund Composition Analysis” on page A-1.

We discuss the results of our projections below along two dimensions. First, we examine the expected range of real returns under each scenario. We then show the odds that returns in the universal restrictions scenario exceed baseline returns over 10- and 20-year periods. We show both 10- and 20-year periods since market returns can be volatile in the short run, and pension funds tend to invest for the long-term.

AVERAGE REAL ANNUAL RETURNS

Our projections show that instituting universal investment restrictions would likely result in measurable increases in returns for pension funds with assets below \$10 million. We ran our baseline and universal restrictions investment return projections multiple times to account for the variability of investment returns. For each group of pension funds by size, we ran our 10-year model 31 times, and our 20-year model 21 times. We show the median annual returns projected by the model for 10-year periods in Table 3 on page 6, and for 20-year periods in Table 4 on page 6.

The increase in median returns would be largest for funds with less than \$2.5 million in assets. We estimate that the 20-year median real annual return for funds with less than \$2.5 million would increase from 5.0% to 6.8% per year.

Funds of \$2.5 to \$5 million and \$5 to \$10 million would see increases in their 20-year median annual return of 0.6 and 0.3 percentage points, respectively.

TABLE 3. Median Projected 10-Year Real Annual Returns for Downstate Police and Fire Pension Funds, by Fund Size and Investment Restrictions

Fund Size	Median Annual Return	
	Current Law	Universal Restrictions
Less Than \$2.5 Million	5.1%	6.7%
\$2.5 to \$5 Million	6.6%	7.0%
\$5 to \$10 Million	6.9%	7.3%

Source: Anderson Economic Group analysis of base data from Illinois Department of Insurance, Matrix Book 2018, U.S. Federal Reserve.

TABLE 4. Median Projected 20-Year Real Annual Returns for Downstate Police and Fire Pension Funds, by Fund Size and Investment Restrictions

Fund Size	Median Annual Return	
	Current Law	Universal Restrictions
Less Than \$2.5 Million	5.0%	6.8%
\$2.5 to \$5 Million	6.6%	7.2%
\$5 to \$10 Million	7.0%	7.3%

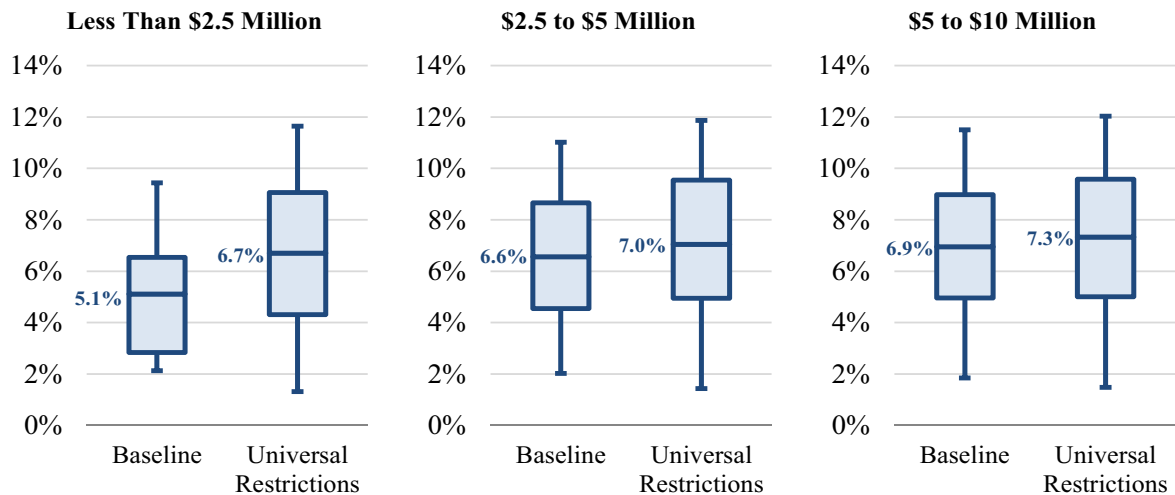
Source: Anderson Economic Group analysis of base data from Illinois Department of Insurance, Matrix Book 2018, U.S. Federal Reserve.

VARIABILITY OF RETURNS

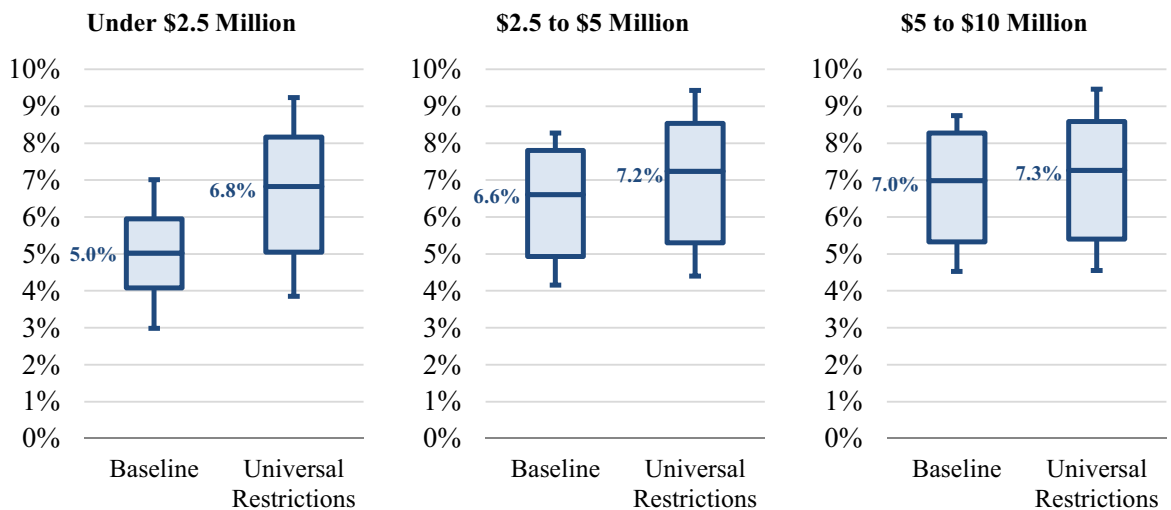
Figure 2 on page 7 shows the range of our model’s projected real annual returns over the next 10 and 20 years for each scenario and fund size. The boxes show the 25th, 50th, and 75th percentile of projected returns, while the whiskers show the minimum and maximum projected annual return.

FIGURE 2. Estimated 10- and 20-Year Real Annual Return for Downstate Police and Fire Pension Funds under Baseline and Universal Restrictions Scenarios

10-Year



20-Year



Note: Boxes represent projected 25th, 50th, and 75th percentile of future annual returns. Whiskers represent minimum and maximum projected annual returns.

Source: Anderson Economic Group analysis of base data from Illinois Department of Insurance, Matrix Book 2018, U.S. Federal Reserve.

RISK OF A MORE AGGRESSIVE PORTFOLIO

In Tables 5 and 6 on page 8, we compare the results of each 10- and 20-year return projection. We ran our 10-year projection model 31 times, and our 20-year projection model 21 times for each group of funds. Allowing a fund with \$2.5 to \$5 million in assets to invest in a more aggressive portfolio that matches

portfolios of current funds with over \$10 million in assets results in higher investment returns over a 10-year period in 90% of our projections.

TABLE 5. Downstate Police and Fire Pension Fund Annual Return Model Performance by Fund Size and Investment Restrictions, 10-Year

	<u>Share of Model Runs Resulting in Higher Returns After 10 Years</u>			
	Baseline	Universal Restrictions	% Baseline	% Unrestricted
Less Than \$2.5 Million	2	29	6%	94%
\$2.5 to \$5 Million	3	28	10%	90%
\$5 to \$10 Million	5	26	16%	84%

Source: Anderson Economic Group analysis of base data from Illinois Department of Insurance, Matrix Book 2018, U.S. Federal Reserve.

TABLE 6. Downstate Police and Fire Pension Fund Annual Return Model Performance by Fund Size and Investment Restrictions, 20-Year

	<u>Share of Model Runs Resulting in Higher Returns After 20 Years</u>			
	Baseline	Universal Restrictions	% Baseline	% Unrestricted
Less Than \$2.5 Million	0	21	0%	100%
\$2.5 to \$5 Million	0	21	0%	100%
\$5 to \$10 Million	1	20	5%	95%

Source: Anderson Economic Group analysis of base data from Illinois Department of Insurance, Matrix Book 2018, U.S. Federal Reserve.

In other words, even though more aggressive portfolios have a higher risk, there is a 90% chance that the more aggressive portfolio would result in greater returns over 10 years, and nearly a 100% chance that it would result in greater returns over 20 years.

AGGRESSIVE PORTFOLIO SCENARIO

In addition to projecting returns under universal restrictions, we also projected returns for a hypothetical “aggressive” investment scenario in which funds with less than \$10 million in assets would transition to a portfolio of 55% international equities and 45% bonds. We provide a detailed discussion of our returns projection model in “Appendix A. Methodology” on page A-1.

Appendix A. Methodology

In this section, we provide a detailed discussion of our analysis of the impacts of easing investment restrictions on downstate police and fire pension funds.

We used historical asset return indices and data on downstate police and fire fund holdings to construct a model that estimates the impacts of easing investment restrictions on pension funds with less than \$10 million in assets.

FUND COMPOSITION ANALYSIS

We first reviewed annual statements and aggregate data from the Illinois Department of Insurance (DOI) website to determine the types of assets that different size funds tend to hold. Pension funds report their holdings to DOI under the following categories:

- Certificates of Deposit;
- State and Local Obligations;
- U.S. Government and Agency Obligations;
- General Accounts of Insurance Companies;
- Separate Accounts of Insurance Companies;
- Pooled Investment Accounts;
- Common and Preferred Stocks; and
- Mutual Funds.

In order to estimate the holdings of a typical fund of each size class—less than \$2.5 million, \$2.5 to \$5 million, \$5 to \$10 million, and over \$10 million—we summed the total value of each asset category for all funds for each size class, and then divided the total by the aggregate value of assets held by funds of each size class. We show this breakdown in Table A-1.

TABLE A-1. Downstate Police and Fire Pension Fund Average Asset Allocation by Fund Size

Asset Group	Less Than \$2.5 Million	\$2.5 to \$5 Million	\$5 to \$10 Million	Over \$10 Million
Certificate of Deposit	20.6%	4.2%	2.3%	0.6%
State and Local Obligations	19.9%	13.5%	16.6%	13.9%
U.S. Government and Agency Obligations	34.0%	37.7%	29.3%	21.6%
General Accounts of Insurance Companies	7.8%	2.7%	2.0%	0.7%
Separate Accounts of Insurance Companies	4.2%	3.3%	2.9%	4.0%
Pooled Investment Accounts	1.1%	1.1%	0.0%	0.5%
Common and Preferred Stocks	0.0%	0.8%	8.5%	11.0%
Mutual Funds	12.3%	36.8%	38.4%	47.6%

Source: Anderson Economic Group analysis of base data from Illinois Department of Insurance.

We initially separated out the asset allocations of police and fire pension funds. Upon investigation, however, we found that the average fund in each size class for police and fire are very similar. Therefore, we do not separate police and fire returns in our analysis.

After determining the average holdings for each size class, we conducted further research on the composition of mutual funds and separate accounts of insurance companies. These two categories required additional research to determine the types of underlying assets in each class.

We randomly sampled 20 funds in each size class—10 police and 10 fire—and estimated the percentage of mutual funds and separate account assets held as international and domestic equities, bonds, certificates of deposit, and cash by consulting Morningstar data on the holdings of the sampled mutual funds. Due to a lack of available data, we assumed that the securities breakdown of mutual funds and separate accounts of insurance companies was the same. We show our mutual fund and separate account asset allocation estimates by fund size in Table A-2.

TABLE A-2. Downstate Police and Fire Pension Funds Estimated Mutual Fund and Separate Account Asset Allocation, by Fund Size

Asset Type	Less Than \$2.5 Million	\$2.5 to \$5 Million	\$5 to \$10 Million	Over \$10 Million
Domestic Equity	63.7%	72.8%	79.7%	55.7%
International Equity	7.5%	22.9%	17.0%	37.4%
Bonds	25.7%	1.9%	0.4%	3.0%
Cash	3.1%	2.2%	2.5%	3.9%

Source: Anderson Economic Group analysis of data from Illinois Department of Insurance, Morningstar.com.

**INVESTMENT
RETURNS ANALYSIS**

After determining an average asset composition for each fund by size, we matched each fund's assets with historical return indices for the years 1976 to 2016. We show the indices used for each asset class in Table A-3.

TABLE A-3. Returns Projection Model Historical Market Return Indices

Asset Category	Index Used	Data Source
Certificates of Deposit	6-Month Certificate of Deposit Index	U.S. Federal Reserve
State and Local Obligations	Bloomberg Barclays Aggregate Bond Index	Dimensional Fund Advisors Matrix Book 2018.
U.S. Government and Agency Obligations	Bloomberg Barclays Aggregate Bond Index	Dimensional Fund Advisors Matrix Book 2018.
General Accounts of Insurance Companies	Bloomberg Barclays Aggregate Bond Index	Dimensional Fund Advisors Matrix Book 2018.
Separate Accounts of Insurance Companies	Blend of S&P 500, MSCI World Excluding USA, Bloomberg Barclays Aggregate Bond Index	Dimensional Fund Advisors Matrix Book 2018.
Pooled Investment Accounts	Consumer Price Index	U.S. Bureau of Labor Statistics
Common and Preferred Stocks	S&P 500	Dimensional Fund Advisors Matrix Book 2018.
Mutual Funds	Blend of S&P 500, MSCI World Excluding USA, Bloomberg Barclays Aggregate Bond Index	Dimensional Fund Advisors Matrix Book 2018.

We then estimated future returns for a typical fund of each size class by running multiple 10- and 20-year return scenarios in which each asset class performs similarly to its historical performance. Our model includes three scenarios—baseline, universal restrictions, and aggressive. In our baseline model, we assumed that each fund would maintain its current asset allocation and rebalance its assets annually.

In the universal restrictions scenario, we assumed that the typical fund in each size class would transition to a new asset allocation similar to that of funds with over \$10 million in assets today. We assumed that this transition would take 5 years. In the aggressive return scenario, we assumed that all funds, including those with over \$10 million in assets, would transition over a five-year period to the most risky asset allocation currently allowed for funds over \$10 million—a mix of 55% international equity and 45% bonds.

We ran our 10-year model 31 times for each scenario, and ran our 20-year model 21 times for each scenario. For each run, we determined what the average real annual return was. We then compared this output to results from other runs to determine a range of expected returns under different asset allocations.

We show the range of real annual returns projected by the model for each size class in the following tables.

TABLE A-4. Project Real Annual Returns for Downstate Police and Fire Pension Funds with Under \$2.5 Million in Assets under Baseline, Universal Restrictions, and Aggressive Scenarios

Percentile	Baseline	Universal Restrictions	Aggressive
10 - YEAR RETURN			
Minimum	2.1%	1.3%	2.0%
25th Percentile	2.8%	4.3%	3.8%
50th Percentile	5.1%	6.7%	5.9%
75th Percentile	6.5%	9.1%	9.1%
Maximum	9.4%	11.6%	12.7%
20 - YEAR RETURN			
Minimum	3.0%	3.8%	3.3%
25th Percentile	4.1%	5.0%	4.2%
50th Percentile	5.0%	6.8%	5.7%
75th Percentile	6.0%	8.2%	7.4%
Maximum	7.0%	9.2%	8.6%

Source: Anderson Economic Group analysis of base data from Illinois Department of Insurance, Matrix Book 2018, U.S. Federal Reserve.

TABLE A-5. Project Real Annual Returns for Downstate Police and Fire Pension Funds with \$2.5 to \$5 Million in Assets under Baseline, Universal Restrictions, and Aggressive Scenarios

Percentile	Baseline	Universal Restrictions	Aggressive
10 - YEAR RETURN			
Minimum	2.0%	1.4%	1.8%
25th Percentile	4.5%	4.9%	3.7%
50th Percentile	6.6%	7.0%	6.5%
75th Percentile	8.7%	9.5%	9.4%
Maximum	11.0%	11.9%	13.0%
20 - YEAR RETURN			
Minimum	4.2%	4.4%	3.9%
25th Percentile	4.9%	5.3%	4.6%
50th Percentile	6.6%	7.2%	6.1%
75th Percentile	7.8%	8.5%	7.5%
Maximum	8.3%	9.4%	8.8%

Source: Anderson Economic Group analysis of base data from Illinois Department of Insurance, Matrix Book 2018, U.S. Federal Reserve.

TABLE A-6. Project Real Annual Returns for Downstate Police and Fire Pension Funds with \$5 to \$10 Million in Assets under Baseline, Universal Restrictions, and Aggressive Scenarios

Percentile	Baseline	Universal Restrictions	Aggressive
10 - YEAR RETURN			
Minimum	1.8%	1.5%	1.7%
25th Percentile	5.0%	5.0%	3.6%
50th Percentile	6.9%	7.3%	6.5%
75th Percentile	9.0%	9.6%	9.4%
Maximum	11.5%	12.0%	13.1%
20 - YEAR RETURN			
Minimum	4.5%	4.6%	4.0%
25th Percentile	5.3%	5.4%	4.7%
50th Percentile	7.0%	7.3%	6.1%
75th Percentile	8.3%	8.6%	7.6%
Maximum	8.7%	9.5%	8.8%

Source: Anderson Economic Group analysis of base data from Illinois Department of Insurance, Matrix Book 2018, U.S. Federal Reserve.

TABLE A-7. Project Real Annual Returns for Downstate Police and Fire Pension Funds with Over \$10 Million in Assets under Baseline, Universal Restrictions, and Aggressive Scenarios

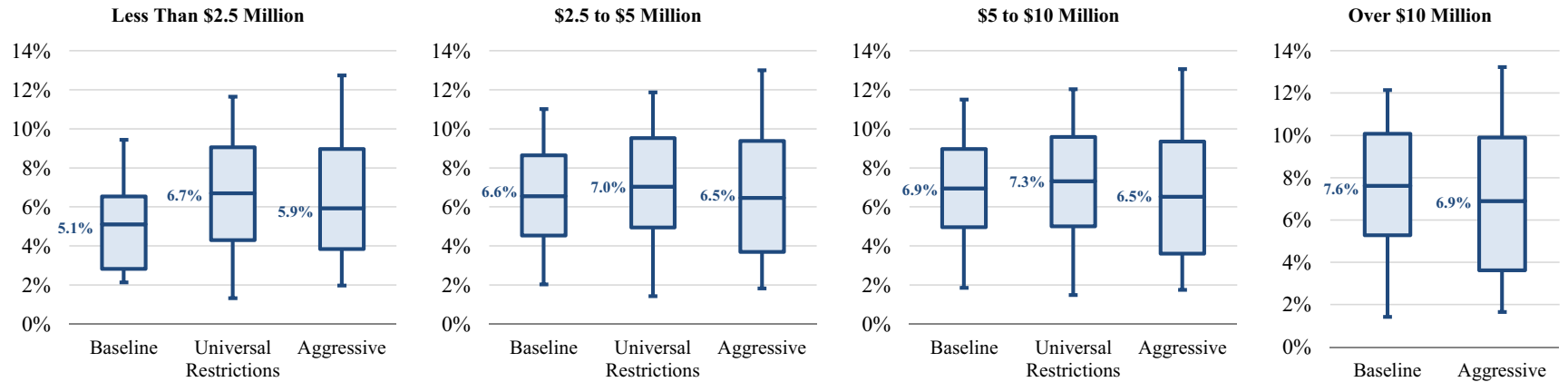
Percentile	Baseline	Universal Restrictions	Aggressive
10 - YEAR RETURN			
Minimum		1.4%	1.7%
25th Percentile		5.3%	3.6%
50th Percentile		7.6%	6.9%
75th Percentile		10.1%	9.9%
Maximum		12.1%	13.2%
20 - YEAR RETURN			
Minimum		4.7%	4.0%
25th Percentile		5.5%	4.8%
50th Percentile		7.7%	6.5%
75th Percentile		8.8%	7.6%
Maximum		9.6%	8.9%

Source: Anderson Economic Group analysis of base data from Illinois Department of Insurance, Matrix Book 2018, U.S. Federal Reserve.

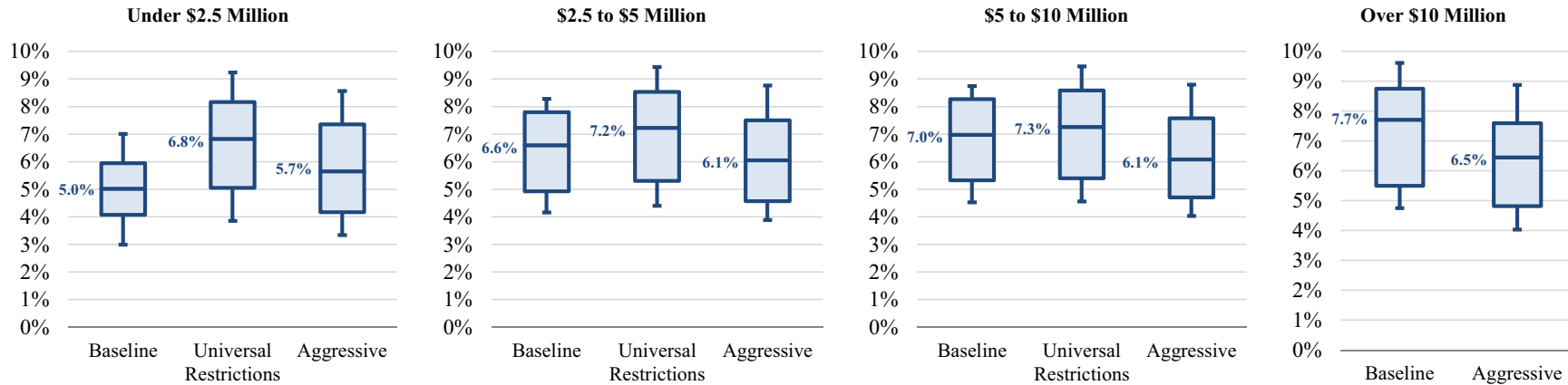
We show the range of returns graphically in Figure A-1 on page A-7.

Figure A-1. Estimated 10- and 20-Year Real Annual Return for Pension Funds under Baseline, Universal Restrictions, and Aggressive Scenarios

10-YEAR



20-YEAR



*Note: Boxes represent projected 25th, 50th, and 75th percentile of future projected returns. Whiskers represent minimum and maximum projected returns.
Source: Anderson Economic Group analysis of base data from Illinois Department of Insurance, Matrix Book 2018, U.S. Federal Reserve.*

WORKS CONSULTED

We used the following reports and data for our analysis.

- U.S. Federal Reserve, “H.15 Select Interest Rates for September 20, 2018,” dataset ID: H15/discontinued/H0.RIFSPDCNSM06_N.A, <http://federalreserve.gov>.
- Bankrate, “Historical CD Interest Rates - 1984-2016,” <http://www.bankrate.com>.
- Dimensional Fund Advisors, “Matrix Book 2018,” <http://www.ifa.com>.
- Illinois Department of Insurance “Public Pension Fund Detailed Financial Data Report Police and Fire,” Fiscal Year 2016, <http://insurance.illinois.gov>.
- Illinois Department of Insurance “Public Pension Fund Detailed Financial Data Report Police and Fire,” Fiscal Year 2017, <http://insurance.illinois.gov>.

Appendix B. About Anderson Economic Group

Anderson Economic Group, LLC is a boutique consulting firm founded in 1996, with offices in East Lansing, Michigan and Chicago, Illinois. We specialize in strategy, valuation, public policy, and market analyses. The public policy team at Anderson Economic Group has a deep understanding of actuarial policy, fiscal analysis, and economic modeling.

Our consultants are often published on topics within their respective fields of expertise. Publications from our team include:

- *Illinois Downstate Pension Fund Consolidation: Cost and Savings from Consolidating Police and Fire Pension Funds*, 2018.
- *The Impacts of Funding Reforms and Investment Returns on Pension Fund Solvency for Illinois' Downstate Police and Fire Pension Funds*, published in 2015.
- *The Impact of Direct Infrastructure Transfer on Illinois Police and Fire Pension Funds*, published in 2017.
- *Proposed Reforms to Chicago Pensions: What's at Stake and How Much it Will Cost*, published in 2014.
- *Impact and Interpretation of a Payroll Floor for the Michigan Public School Employee Retirement System*, published in 2017.
- *Pension Buyouts for Illinois Teachers: Estimating Savings and Reduced Liabilities for the State of Illinois*, published in 2017.
- *Oregon Public Sector Workforce Issues: The Cost of Employee Replacement and Evidence of a Labor Shortage*, 2018.

Past clients of Anderson Economic Group include:

- *Governments*: The government of Canada; the states of Michigan, North Carolina, and Wisconsin; the cities of Detroit, Cincinnati, and Sandusky; counties such as Oakland County, and Collier County; and authorities such as the Detroit-Wayne County Port Authority.
- *Corporations*: Bank of America Merrill Lynch, InBev USA, ITC Holdings Corp., Ford Motor Company, First Merit Bank, Labatt USA, Lithia Motors, Meijer, Inc., National Wine & Spirits, Nestle, and Relevent Sports; automobile dealers and dealership groups representing Toyota, Honda, Chrysler, Mercedes-Benz, General Motors, Kia, and other brands.
- *Nonprofit organizations*: Convention and visitor bureaus of several major cities; higher education institutions including Michigan State University, Wayne State University, and University of Michigan; trade associations such as the Michigan Manufacturers Association, Service Employees International Union, Automation Alley, Business Leaders for Michigan, and the Illinois Public Pension Fund Association.

Please visit www.AndersonEconomicGroup.com for more information.

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Mr. Horwitz is a Senior Consultant at Anderson Economic Group, serving as the Director of the Public Policy and Economic Analysis practice area. Mr. Horwitz has extensive expertise on state and local economic conditions and on the economic and fiscal impacts of public policy. He has provided research, analysis, and expert testimony on policy in a range of fields, including state and local taxes, retirement benefits, business incentives, energy policy, and economic development.

Mr. Horwitz has advised governments, trade organizations, and corporations across the country on economic issues and the impacts of policy. His work also includes economic impact studies on universities, hospitals, museums, retailers, and large-scale events. His work has been featured in Bloomberg Businessweek, NPR Marketplace, Chicago Sun-Times, Detroit News, Crain's Chicago Business, and on WBEZ Radio.

Mr. Horwitz holds a Master of Public Policy from the Harris School of Public Policy at the University of Chicago and a Bachelor of Arts in Physics and Philosophy from Swarthmore College. He is a board member at the Civic Federation, and the co-chair of their committee on regional economic competitiveness.

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Mr. Peterson is a Senior Analyst with Anderson Economic Group, working in the Public Policy and Economic Analysis practice area. His work focuses on modeling economic and fiscal impacts of changes in public policy and real estate development, and actuarial analysis. Prior to joining AEG, Mr. Peterson worked as a Policy Analyst in regional economic development and transportation planning in the Chicago region.

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Ms. Mixon holds a Master's degree in Public Policy from the Harris School of Public Policy at the University of Chicago and a Bachelor of Arts in Economics from Oklahoma State University.