



Teachers' Retirement System of the State of Kentucky

Interim Joint Committee on Appropriations & Revenue

July 7, 2021

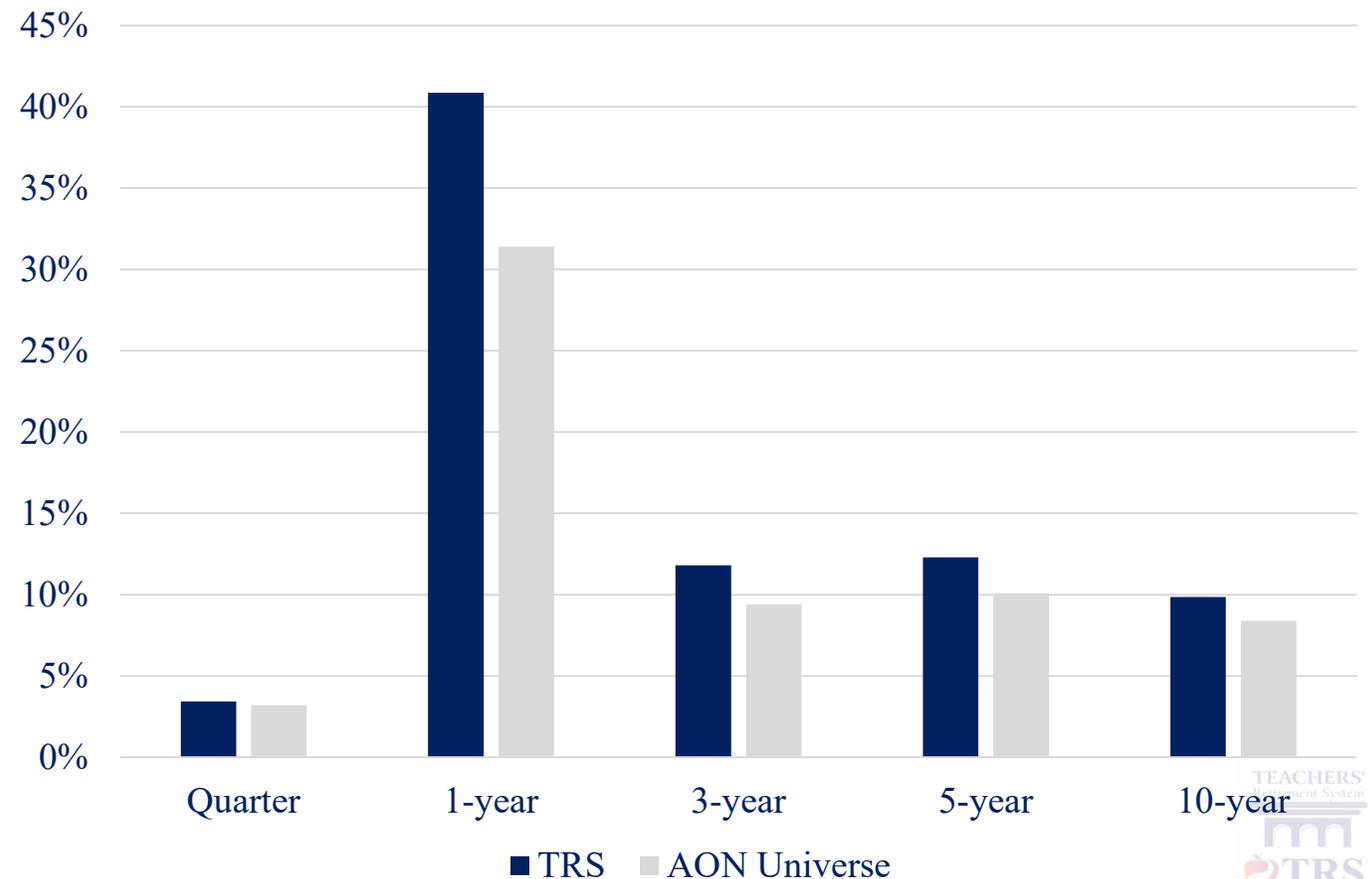
Gary L. Harbin, CPA
Executive Secretary

Investment Performance

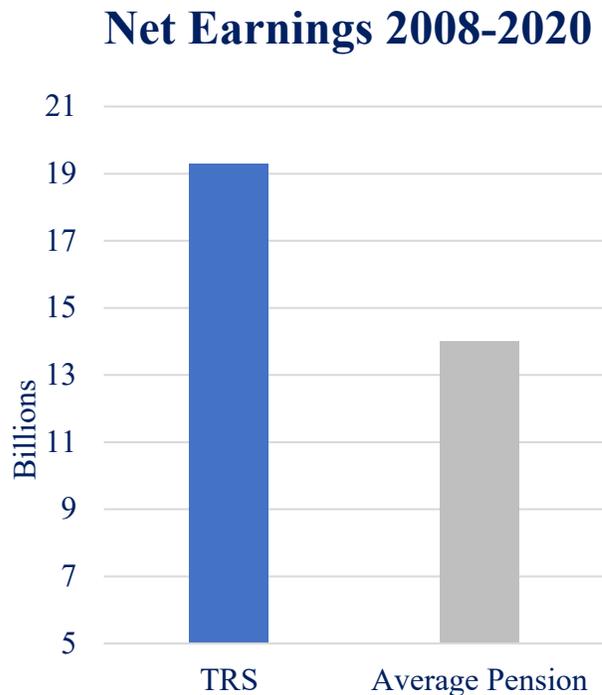
Retirement Annuity Trust Gross Returns as of March 31, 2021

	TRS	Aon Rank
Quarter	3.44%	Top 49%
FYTD	23.05%	N/A
1-year	40.86%	Top 3%
3-year	11.81%	Top 2%
5-year	12.3%	Top 3%
10-year	9.86%	Top 4%

30-year compounded
8.45%



Investment Performance



From 2008 to March 2021, TRS investment returns totaled a net \$19.3 billion, compared to the average plan's \$14 billion.

This outperformance generated \$5.3 billion to the benefit of Kentucky's teachers and all taxpayers.

Experience Study

Covers Five Years ended June 30, 2020



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TEACHERS' RETIREMENT SYSTEM
OF THE STATE OF KENTUCKY
STATEMENT OF RESULTS OF THE
EXPERIENCE INVESTIGATION
PREPARED AS OF JUNE 30, 2020

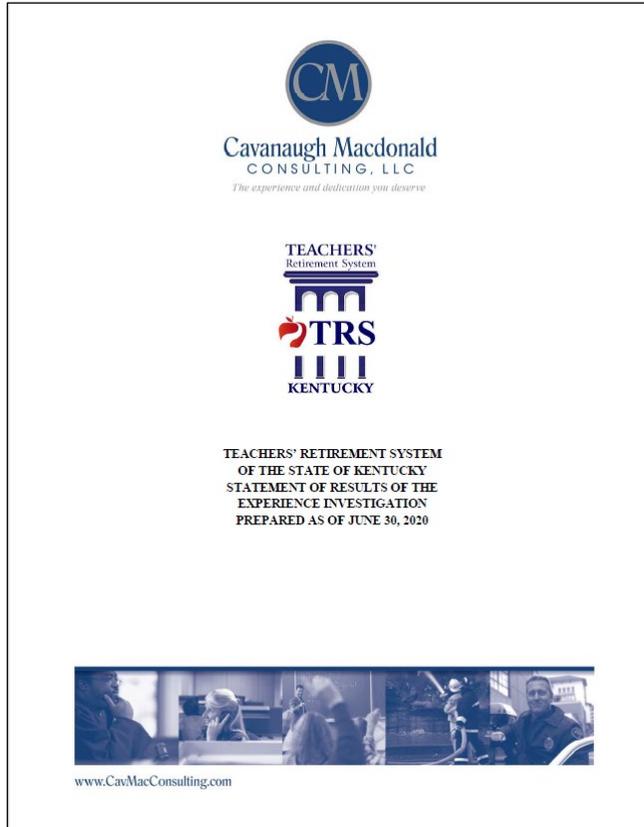


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2021 Experience Study

Summary of Changes



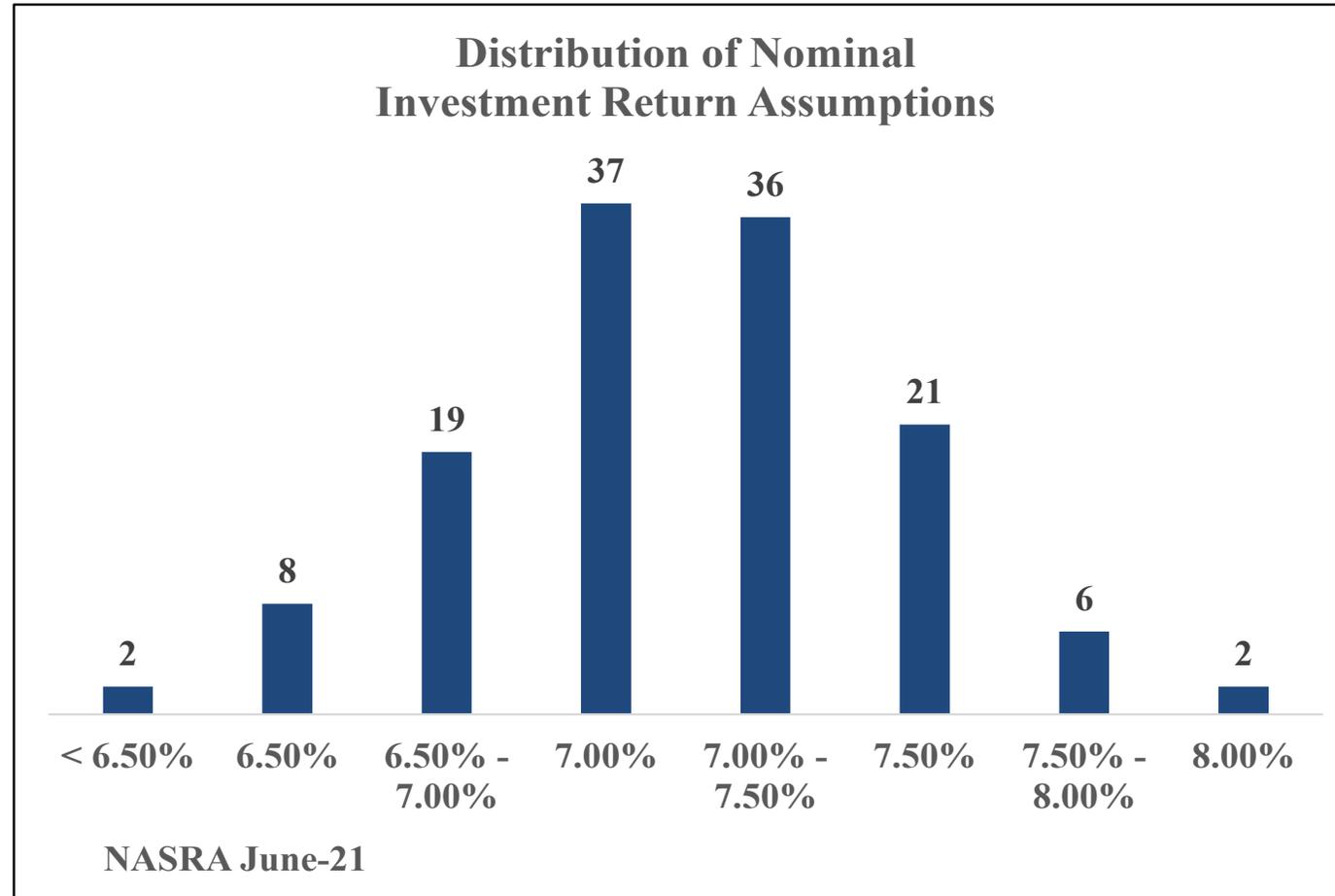
- Lower the investment return assumption for all plans to 7.1% (from 7.5%)
- Lower the payroll growth assumption to 2.75%
- Update to new teacher-specific mortality tables

Economic Assumptions

Investment Return



➤ Peer Comparison:



Experience Study

Summary of Impact on Total Liabilities

Retirement Annuity Trust liabilities as of June 30, 2020, increase \$2.95 billion from \$35.58 billion

Biggest drivers

- \$1.49 billion increase for new mortality tables
- \$1.65 billion increase to lower discount rate to 7.1%
- Lowered \$400 million by salary assumption changes

Health Insurance Trust liabilities as of June 30, 2020, increase \$350 million from \$2.76 billion

Biggest drivers same as annuity trust

No budget impact for state since contribution is fixed salary percentage



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Budget Impact

Based on Annual Valuations

Budget request of additional funding for 2023 already has been determined at \$629.4 million.

The 2024 request will be determined based on the 2021 annual valuation.

Experience Study

Timing Comes In Year That Could Help Offset Assumption Changes

Next valuation will include fiscal 2021 return that – preliminarily – will be more than 20% while dropping 2016.

Year Ending June 30	Actuarial Value	Market Value
2020	7.0%	5.5%
2019	7.1%	5.6%
2018	9.1%	10.5%
2017	9.3%	15.0%
2016	7.6%	-1.0%
Average	8.0%	7.1%

Experience Study

Timing Comes In Year That Could Help Offset Assumption Changes

Through the third quarter of the fiscal year, the trusts collectively gained more than \$4.5 billion in assets.

Retirement Annuity Trust

	FYTD 2021 (Q3)
Net plan assets gains	\$ 4,025,000,000

Health Insurance Trust

	FYTD 2021 (Q3)
Net plan assets gains	\$ 509,300,000

Cash Flow

Negative Cash Flow is Normal for Mature Plans

INVESTMENT REVIEW

1

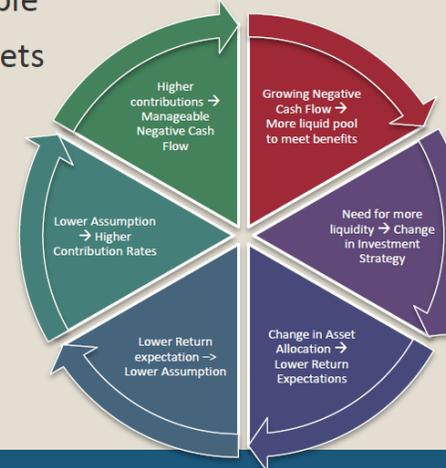
Public Pension Oversight Board

October 28, 2019

SPECIAL TOPIC → *Net Cash Flow*

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- Net Cash Flow = **Contributions** – **Benefits** - **Expenses**
- More plans having to manage Negative Net Cash Flow
 - Plans are maturing, retirees and benefit amounts increasing
- Negative CF not necessarily implying trouble
- Measuring negative CF as a percent of assets can serve as warning
 - As funding declines, assets decline
 - Negative CF becomes larger %
- At what level is negative CF okay?
 - No specific standard, depends on plan/actuary
 - Research has indicated range of negative 3-5%
 - Portfolio income can offset majority, allow asset growth/funding to remain stable



Cash Flow

Negative Cash Flow is Normal for Mature Plans

INVESTMENT REVIEW

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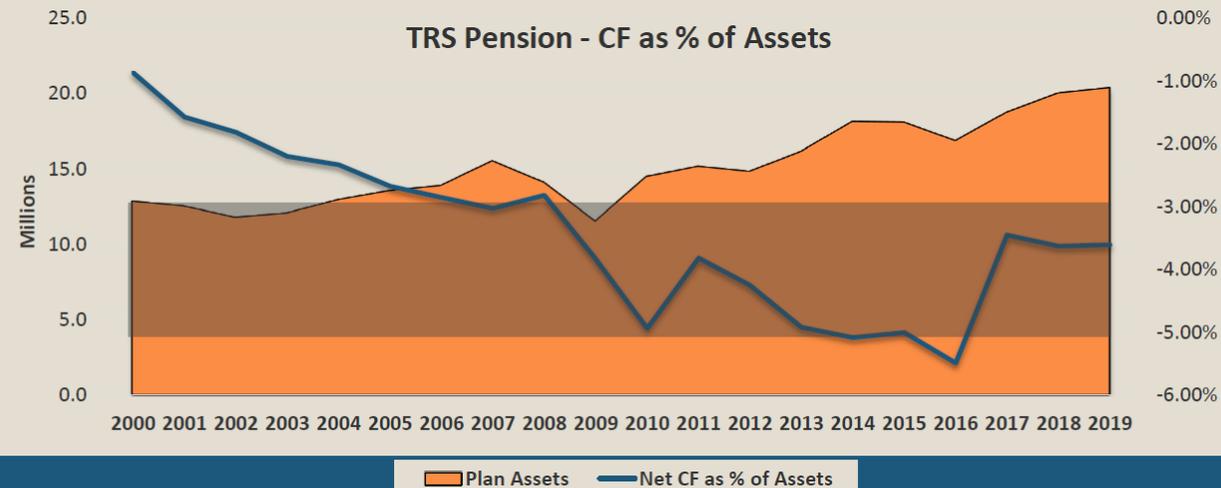
Public Pension Oversight Board

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SPECIAL TOPIC → *Cash Flow Example*

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- Plan has experienced negative CF for several years, but has remained consistently within recommended range
- CF exceeded threshold in 2016, but additional contributions received & strong asset gains moved back within manageable range
- Portfolio yield/income has offset, plan assets have been allowed to appreciate.



Cash Flow

Negative Cash Flow is Normal for Mature Plans

Negative cash flow for 2020 as a percentage of market value of assets is (3.68)%.

Importance of Investment Income

Schedule of Funds Available for Retirement Benefits

In billions

Beginning Balance as of July 1, 1985	\$ 1.8
Member & Other Contributions	7.9
Employer Contributions	15.7
Investment Income	28.7
Benefit Payments & Refunds	(33.2)
Administrative Expenses	(0.2)
Ending Balance as of June 30, 2020	\$20.7



What Another Actuary Says

Negative Cash Flow Is Typical For Mature Plans

GRS PERSPECTIVES

September 2015

www.gabrielroeder.com

Understanding the Impact of Negative Cash Flow on a Public Pension Plan Lance Weiss, EA, FCA, MAAA

Public-sector pension plans are designed to provide public employees with a pension upon their retirement. But where does the money come from to make the pension payments? Very simply stated, the goal is for employees and their employers to make periodic contributions to a pension fund, which together with investment returns on the invested contributions, will be sufficient to pay all promised benefits upon the members' retirement. This concept is illustrated by the following basic public pension plan financing equation:

$$B + E = I + C$$

where:

B = Benefits Paid
E = Administrative Expenses
I = Investment Return on Plan Assets
C = Contributions

In this equation, the benefits paid are determined by negotiated and/or legislated plan provisions. Administrative expenses are generally determined by system policies. Investment return is determined by investment policies (including liquidity issues). Contributions are generally shared by employees and their employer, with the amount of employee and employer contributions generally set by statute, plan document, or other contract.

Annual employee and employer contributions represent a systematic means of pre-funding the system's costs. The benefit of pre-funding is that investment return on the pre-funded plan assets reduces the employer's long-term contributions.

Retirement plans that have been in operation for a number of years generally have contributions coming in and benefits being paid out each year. The net (non-investment) cash flow is the difference between the contributions and benefits and expenses. These cash flows will vary for each plan since all plans have different demographics and maturities.

Using the same basic public pension plan financing equation, net (non-investment) cash flow is determined by:

$$\text{Net Cash Flow} = C - B - E$$

where:

C = Contributions
B = Benefits Paid
E = Administrative Expenses

Consequently, if $C - B - E$ is negative, the plan has a negative cash flow and if $C - B - E$ is positive, the plan has a positive cash flow. Younger plans tend to have positive cash flows, whereas more mature plans may have negative cash flows. There is nothing necessarily wrong with a plan having negative cash flows. In fact, it is expected that all plans will have negative cash flows over time, which is considered the normal cycle of a pension plan.

Further, when assessing the impact of cash flow on a pension plan, it is important to remember why a pension plan has assets - **to pay benefits**. Although a plan has negative cash flow, it does not necessarily imply it is in trouble. In fact, some would say that the primary purpose of pre-funding is so the investment return can pay a significant portion of the benefit payments.

“Although a plan has negative cash flow, it does not necessarily imply it is in trouble. In fact, some would say that the primary purpose of pre-funding is so the investment return can pay a significant portion of the benefit payments.”

“In fact, it is typical for mature plans to experience negative cash flow.”



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Protecting & Preserving Teachers' Retirement Benefits