

Investment Section

Report on Investment Activity
Chief Investment Officer's Year in Review
Outline of Investment Policies
 Asset Allocation
 Investment Summary
 Largest Holdings
 Investment Results
 Investment Expenses
 Investment Managers

Report on Investment Activity



Samuel Austin, III
Partner

May 12, 2023

Board of Trustees
Texas Municipal System
P.O. Box 149153
Austin, Texas 78714-9153

Dear Trustees:

The following is a report on TMRS' Trust Fund performance for the fiscal year ended December 31, 2022, and some background on the underlying capital market environment.

Market Review for the Year Ended December 31, 2022

With the exception of commodities, virtually all major asset classes declined in 2022. The U.S. economy contracted in real terms over the first two quarters of calendar year 2022. In the second half of the year, however, the U.S. economy expanded, and real GDP increased at an annual rate of 2.7% by the end of the fourth quarter.

Although headline CPI has gradually declined since the start of the third quarter, it remains at levels higher than that of 2020. The Federal Reserve, in its efforts to combat inflation, has implemented measures to slow the economy with a series of raises to the Fed Funds Rate. In 2022, the Federal Reserve increased the Fed Funds Rate to a targeted range of 4.25% - 4.50% from 0.25% - 0.50% in early-2022. Similar actions were taken by central banks globally.

Both stocks and bonds declined throughout the year. In the fiscal year ending December 31, 2022, U.S. stocks returned -18.1% as measured by the S&P 500 Index. International stocks fared little better with a return of -14.5% as measured by the MSCI EAFE Index. Emerging markets returned -20.1%, underperforming both U.S. and international-developed markets. Typically considered a safe-haven asset, U.S. high quality fixed income returns were also negative over the year, as interest rate-sensitive assets as represented by the Bloomberg U.S. Aggregate Bond Index posted a decline of 13%.

The TMRS Investment Portfolio

As of December 31, 2022, the market value of the TMRS total investment portfolio totaled \$35.5 billion and its 2022 return, net-of-fees, was -7.35%. In the same period, the median fund in the InvMetrics peer group of Public Defined Benefit plans greater than \$10 billion in assets returned -8.9%. TMRS's five-year annualized return net-of-fees for the period ended December 31, 2022, was 4.81%, outperforming the Actual Allocation Benchmark by 1.3%, but trailing the Board's Actuarial Return Assumption of 6.75%.

All asset class allocations remain in compliance with the targeted ranges as outlined by the Investment Policy Statement. With most global capital markets realizing strong negative returns in the fiscal year ended December 31, 2022, NEPC continues to be supportive of TMRS's chosen asset allocation.

NEPC, LLC serves as TMRS's independent investment consultant, providing TMRS with asset allocation guidance, quarterly economic and investment market updates, and performance reviews, together with investment manager monitoring and selection advice. In preparing our performance analysis for the plan, we rely on the accuracy of financial data and performance provided by TMRS's custodian bank, State Street. Performance is calculated using a time-weighted rate of return methodology based upon market values. The money-weighted rate of return presented in the Financial Section of this Report is calculated using a different methodology. TMRS's goals are measured against stated investment policy objectives, appropriate benchmarks, and comparative universes over multiple time periods. This review process allows TMRS to evaluate whether established goals are being achieved on an absolute, relative, and risk-adjusted basis.

Best Regards,

A handwritten signature in dark ink, appearing to read 'Samuel Austin, III', with a stylized flourish at the end.

Samuel Austin, III, Partner

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Chief Investment Officer's Year in Review



May 15, 2023

To: The Trustees, Members, Retirees, Beneficiaries, and Participating Cities of the Texas Municipal Retirement System

The U.S. and global equity and fixed income markets were brutal in 2022 due to escalating geopolitical concerns and rising inflation fears leading the Federal Reserve to raise interest rates from 0.25% to 4.50% in nine months. Stocks declined by 18% and bonds declined by 13%. Despite these challenging conditions, TMRS' Trust Fund outperformed most other U.S. public plans in 2022 by implementing the Board's new asset allocation policy, which includes increasing private market investments in equity, infrastructure, and other real assets.

TMRS' 2022 net investment return was -7.35%, exceeding our asset allocation benchmark of -12.36%. TMRS' three-year, five-year, and ten-year net returns were 4.10%, 4.81%, and 5.98%, respectively. These returns exceeded our asset allocation benchmarks but trailed our 6.75% actuarial return assumption. Trust Fund assets totaled \$35.5 billion as of December 31, 2022, and all asset classes are within Investment Policy Statement target ranges.

In 2022, the Trust Fund's Real Estate and Private Equity portfolios were the top performers, returning 12.00% and 1.45%, respectively, exceeding their benchmarks by 5.45% and 19.85%. Global Public Equity and Core Fixed Income posted double digit losses, returning -19.06% and -12.90%, respectively, due to the challenging public markets. Non-Core Fixed Income and Other Public & Private Markets reported net returns of -3.27% and -3.71%, outperforming their benchmarks by 8.42% and 14.69%, respectively. Hedge Funds returned -0.08%. In 2022, TMRS completed \$4.7 billion of new investments, while reducing \$2.7 billion of existing mandates to prudently enhance long-term returns.

TMRS claims compliance with the Global Investment Performance Standards (GIPS®), and that the Trust Fund was examined, and the organization verified for 2022. All valuations are reported in USD. GIPS® is a registered trademark of the CFA Institute. CFA Institute does not endorse or promote TMRS, nor does it warrant the accuracy or quality of the content contained herein. A copy of the 2022 GIPS Asset Owner report can be obtained by emailing invrisk@tmrs.com.

Detailed performance and asset allocation reports prepared by NEPC, the Board's independent investment consultant, are available at trms.com.

Sincerely,



David J. Hunter
Chief Investment Officer

Outline of Investment Policies

The TMRS Board of Trustees (Board) adopts an Investment Policy Statement (IPS) that governs the management of Trust Fund investments. The IPS describes investment objectives, beliefs, benchmarks, asset allocation and responsibilities of the Board, staff, and investment managers and consultants. The Board reviews the IPS annually.

Investment Program Objective

TMRS' investment program objective is to ensure that members, retirees and beneficiaries receive the benefits they have accrued through their employment with participating cities at a reasonable and predictable cost to those cities. To achieve this objective, the Board, in consultation with its Consulting Actuary, adopts an Actuarial Return Assumption (ARA). Trust Fund assets will be invested to achieve a total return that meets or exceeds the current ARA of 6.75%.

Standards of Care

A. Standard of Care. As fiduciaries, the Board and staff must:

1. Exercise the degree of judgment and care, under the circumstances that persons of prudence, discretion and intelligence exercise in the management of their own affairs, considering the probable income and safety of their capital.
2. Evaluate Investment decisions in the context of the entire Trust Fund portfolio and with appropriate risk and return objectives.

B. Conflict of Interest Prohibited. Trustees, staff, and investment managers and consultants must refrain from any activity that could conflict with the proper execution and management of the investment program, or that could impair their ability to make impartial recommendations and decisions. These individuals are required to disclose, in writing, any known relationships that could create, or appear to create, a conflict of interest.

C. Decisions in the Best Interest of TMRS. Trustees and staff are required to make all investment decisions in the best interest of TMRS and shall comply with applicable TMRS policies on personal investment activities.

Investment Management

The Board is responsible for the administration of TMRS and its investment program, and Trustees must discharge their duties solely in the interest of providing benefits to members, retirees and beneficiaries.

The Board adopts investment beliefs based on capital market theories and other investment management principles generally accepted by long-term focused institutional investors, with the intent to maximize long-term investment returns consistent with the Board's fiduciary duty and laws of the State of Texas.

Outline of Investment Policies

CONTINUED

Asset Allocation

One of the Board's investment beliefs is that the primary determinant of portfolio risk and return is TMRS' strategic, long-term asset allocation. The Board's Asset Allocation includes asset classes, strategic target allocations with minimum and maximum allocation ranges, and benchmarks to measure investment performance. The Asset Allocation is based on an Asset Allocation Study that includes expectations for long-term return and risk, and is intended to produce investment returns equal to or greater than the ARA at a level of risk acceptable to the Board. In adopting the Asset Allocation, the Board considers TMRS' assets and liabilities, risk and return trade-offs, the ability to deliver on promised benefit payments at a reasonable and predictable cost to participating cities, the risk of permanent loss of capital, Trust Fund liquidity, and the ability to maintain a long-term strategy during sustained periods of market volatility.

The Board has adopted the following Asset Allocation and respective benchmarks:

Table I-1

Asset Allocation				
Asset Class	Minimum %	Target %	Maximum %	Benchmark
Core fixed income	1%	6%	11%	Bloomberg U.S. Aggregate Bond Index
Non-core fixed income	15%	20%	25%	Bloomberg U.S. Aggregate Bond Index + 1.50%
Global public equity	25%	35%	45%	MSCI All Country World Investable Market Index, Net
Real estate	7%	12%	17%	NCREIF - ODCE Index, Net
Other public & private markets	7%	12%	17%	MSCI All Country World Investable Market Index, Net
Hedge funds	0%	5%	10%	HFRI Asset Weighted Composite Index
Private equity	5%	10%	15%	MSCI All Country World Investable Market Index, Net
Cash equivalents	0%	0%	3%	FTSE 1-Month U.S. T-Bill Index

The Asset Allocation is reviewed annually for reasonableness, taking into consideration current capital markets and economic conditions and the Board's views regarding long-term investment goals and objectives.

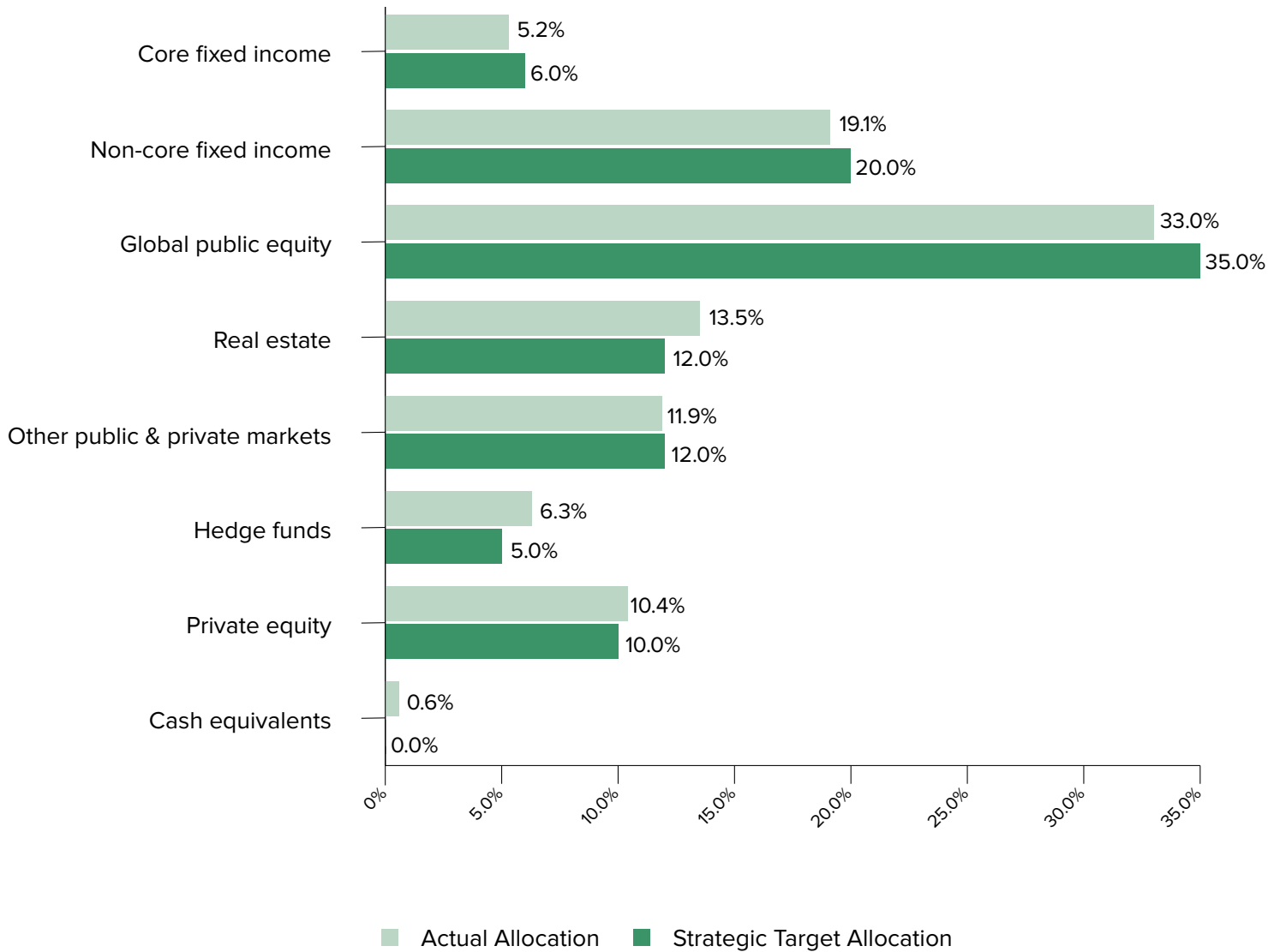
An Asset Allocation Study that comprehensively reviews the Asset Allocation is completed every four years. The Board verifies or amends its Asset Allocation upon review of an Asset Allocation Study.

An Asset-Liability Modeling Study is conducted every four years.

The Board assesses the Asset Allocation's performance over five-year rolling periods compared to the ARA, Trust Fund benchmark, and asset class benchmarks.

Asset Allocation

Asset Allocation – Actual compared to Strategic Target
As of December 31, 2022



Investment Summary

Table I-2 Investment Summary by Asset Class
As of December 31, 2022

	Fair Value	Percent of Total
Core fixed income		
Short term investments	\$ 118,952,530	0.3 %
Fixed income securities	1,753,512,331	4.9
Total core fixed income	1,872,464,861	5.2
Non-core fixed income		
Short term investments	87,367,650	0.2
Fixed income securities	1,463,073,178	4.1
Non-core fixed income funds	5,237,413,983	14.8
Total non-core fixed income	6,787,854,811	19.1
Global public equity		
Short term investments	27,631,560	0.1
Domestic public equity securities	1,238,562,404	3.5
International public equity securities	712,363,127	2.0
REITS	37,123,086	0.1
Commingled public equity funds	9,679,413,831	27.3
Total global public equity	11,695,094,008	33.0
Real estate		
Private real estate funds	4,786,880,450	13.5
Total real estate	4,786,880,450	13.5
Other public and private markets		
Commingled public equity funds	1,700,812,796	4.8
Other public and private markets funds	2,515,613,296	7.1
Total other public and private markets	4,216,426,092	11.9
Hedge funds		
Direct hedge funds	2,227,024,539	6.3
Hedge fund of funds	1,945,589	—
Total hedge funds	2,228,970,128	6.3
Private equity		
Private equity funds	3,701,420,555	10.4
Total private equity	3,701,420,555	10.4
Cash equivalents		
Short term investments	208,296,143	0.6
Total cash equivalents	208,296,143	0.6
Total investments	\$ 35,497,407,048	100.0 %
Other investment-related items		
Custodial cash	5,785,347	
Interest and dividends receivable	29,374,524	
Unsettled trades receivable	157,486,559	
Management fees payable	(4,430,396)	
Unsettled trades payable	(225,503,368)	
Trust fund net assets value	\$ 35,460,119,714	

Largest Holdings

Table I-3

Largest Holdings – Fixed Income Securities				
As of December 31, 2022				
Description	Coupon	Maturity	Par Value	Fair Value
U.S. Treasury Note/Bond	4.500%	11/30/2024	\$145,175,000	\$145,265,734
U.S. Treasury Note/Bond	3.875%	11/30/2029	\$52,363,000	\$52,142,094
U.S. Treasury Note/Bond	3.125%	8/31/2027	\$41,995,000	\$40,459,558
U.S. Treasury Note/Bond	3.250%	6/30/2027	\$29,425,000	\$28,500,871
U.S. Treasury Note/Bond	3.875%	11/30/2027	\$23,928,000	\$23,839,205
U.S. Treasury Note/Bond	4.000%	12/15/2025	\$22,858,000	\$22,734,781
FNMA Pool FS2040	1.000%	2/1/2052	\$27,058,195	\$22,124,500
U.S. Treasury Note/Bond	2.750%	7/31/2027	\$23,224,000	\$22,011,090
U.S. Treasury Note/Bond	3.000%	5/15/2047	\$25,675,000	\$21,200,931
U.S. Treasury Note/Bond	4.125%	9/30/2027	\$17,010,000	\$17,102,359

Table I-4

Largest Holdings – Public Equities		
As of December 31, 2022		
Description	Shares/Units	Fair Value
Northern Trust Collective U.S. IMI Fund, Non Lending	18,805,933.256	\$5,987,019,300
Northern Trust Collective All Country World Ex-U.S. Fund, Non Lending	21,408,660.720	\$3,692,394,532
Northern Trust Collective All Country World IMI Fund, Non Lending	7,419,224.913	\$1,700,812,796
Apple Inc.	301,999.000	\$39,238,730
Microsoft Corporation	133,080.000	\$31,915,246
Tencent Holdings Ltd.	675,500.000	\$28,906,912
Reliance Industries Ltd.	633,622.000	\$19,507,255
Taiwan Semiconductor Manufacturing Company	1,150,000.000	\$16,781,084
Alibaba Group Holdings Ltd	1,371,952.000	\$15,161,002
Samsung Electronics Co Ltd.	341,156.000	\$14,919,673

A complete portfolio listing will be provided upon request.

Investment Results

Total Trust Fund and Asset Class returns for the year ended December 31, 2022 are set out in Table I-5.

Table I-5

Total Trust Fund and Asset Class Returns				
	1 Year	3 Years	5 Years	10 Years
Total fund	(7.35)%	4.10%	4.81%	5.98%
Total fund active weighted benchmark	(12.36)%	2.17%	3.51%	5.19%
Core fixed income	(12.90)%	(2.34)%	0.32%	1.25%
Core fixed income benchmark	(13.01)%	(2.71)%	0.02%	1.06%
Non-core fixed income	(3.27)%	2.25%	3.59%	N/A
Non-core fixed income benchmark	(11.69)%	(1.37)%	1.30%	N/A
Global public equity	(19.06)%	2.98%	4.37%	8.08%
Global public equity benchmark	(18.40)%	3.89%	5.06%	8.41%
Real estate	12.00%	10.78%	9.80%	10.87%
Real estate benchmark	6.55%	9.35%	8.34%	9.92%
Other public and private markets	(3.71)%	3.66%	4.02%	2.93%
Other public and private markets benchmark	(18.40)%	(1.27)%	0.82%	1.41%
Hedge funds	(0.08)%	4.02%	4.00%	N/A
Hedge funds benchmark	0.74%	5.52%	4.20%	N/A
Private equity	1.45%	22.89%	20.73%	N/A
Private equity benchmark	(18.40)%	8.59%	12.09%	N/A
Cash equivalents	1.63%	0.70%	1.20%	0.84%
Cash equivalents benchmark	1.48%	0.66%	1.20%	0.71%

N/A means TMRS was not invested in the asset class for 10 years.

Rates of return are calculated from December 31, 2022 values, net of external investment management fees through December 31, 2020, and net of external and internal investment management fees from January 1, 2021 to December 31, 2022, using time-weighted rate of return.

Benchmarks for each asset class are as follows:

Total fund active weighted benchmark return is the weighted-average of the asset class composite benchmarks associated with each fund.

Core fixed income benchmark return is calculated monthly using the Bloomberg U.S. Aggregate Bond Index.

Non-core fixed income benchmark return is calculated monthly using the Bloomberg U.S. Aggregate Bond Index + 1.5%.

Global public equity benchmark return is calculated monthly using the MSCI All Country World Investable Market Index, Net.

Real estate benchmark return is calculated quarterly using the National Council of Real Estate Fiduciaries — Open-End Diversified Core Equity Index, Net.

Other public and private markets (OPPM) benchmark return is calculated monthly using the MSCI All Country World Investable Market Index, Net.

Hedge funds benchmark return is calculated monthly using the HFRI Asset Weighted Composite Index.

Private equity benchmark return is calculated quarterly using the MSCI All Country World Investable Market Index, Net.

Cash equivalent benchmark return is the FTSE 1-Month U.S. Treasury Bill Index.

Investment Expenses

Table I-6

Schedule of Investment Expenses	
For the Year Ended December 31, 2022	
Staff salaries and payroll taxes	\$ 3,865,686
Employee benefits	777,296
Custodial services	1,530,000
Investment consulting	1,673,280
Legal	637,615
Cloud services	1,417,560
Professional development	57,599
Other administrative	3,917
Travel	75,802
Management fees paid from Trust Fund	18,832,737
Total investment expenses	\$ 28,871,492

Table I-7

Schedule of External Investment Fees						
For the Year Ended December 31, 2022						
Asset Class	Management Fees Paid From Trust Fund	Management Fees Netted From NAV	Total Investment Management Fees	Brokerage Fees / Commissions	Performance Fees / Carried Interest Netted from NAV	Total Direct / Indirect Fees and Commissions
	(1)	(2)	(3) = (1)+(2)	(4)	(5)	(6) = (3)+(4)+(5)
Fixed income	\$ 5,212,641	\$ 41,620,253	\$ 46,832,894	\$ —	\$ 17,703,364	\$ 64,536,258
Public equity	13,620,096	—	13,620,096	2,456,404	—	16,076,500
Real assets	—	47,241,978	47,241,978	—	62,069,479	109,311,457
Alternative/other	—	143,111,991	143,111,991	—	131,497,296	274,609,287
Cash equivalents	—	212,570	212,570	—	—	212,570
Totals	\$ 18,832,737	\$ 232,186,792	\$ 251,019,529	\$ 2,456,404	\$ 211,270,139	\$ 464,746,072

Fees for private investments are not reflected as investment expenses in TMRS' financial statements but are included in the net appreciation/(depreciation) in fair value of investments as reported in the Statement of Changes in Fiduciary Net Position. The alternative/other asset class includes hedge funds, other public and private markets funds, and private equity funds.

Investment Managers

Pursuant to Texas Government Code 802.103, Table I-8 discloses all investment managers engaged by TMRS.

Table I-8

Investment Managers As of December 31, 2022
Acadian Asset Management
BlackRock Financial Management
Champlain Investment Partners
Columbia Management Investment Advisers
Ellington Management Group
Northern Trust Investments
Voya Investment Management
Wellington Management
William Blair Investment Management

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