Virginia Retirement System

2023 Board of Trustees Retreat

March 21-22, 2023

The Westin Richmond
6631 West Broad Street
Richmond, Virginia 23230

Wednesday, March 22, 2023

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Virginia Retirement System Board of Trustees Retreat

March 21-22, 2023
Westin Richmond Hotel ♦ Chesapeake Salon: A & B

Wednesday, March 22

8:00 a.m. **Buffet Breakfast (Chesapeake Salon Foyer)**

8:30 a.m. **Day 2 Opening Remarks**
Andrew Junkin – Virginia Retirement System
Chief Investment Officer

8:35 a.m. **Fiduciary & Governance Training**
Benita Falls Harper, JD – AON
Co-Consultant, Associate Partner

10:00 a.m. **Liability Primer**
Thomas Cassara – Agilis
Chief Executive Officer

10:45 a.m. **15-Minute Break**

11:00 a.m. **Pension Opportunities and Challenges**
Tim McCusker – NEPC, LLC
Chief Investment Officer

11:45 a.m. **Top of Mind Risks**
Adam Berger – Wellington Management
Asset Allocation Strategist

12:30 p.m. **Closing Remarks**
Andrew Junkin – Virginia Retirement System
Chief Investment Officer

Virginia
Retirement
System

Notes

Virginia Retirement System

Day 2 Opening Remarks

Andrew Junkin

Chief Investment Officer

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Guest Speaker:
Fiduciary & Governance Training

Benita Falls Harper, JD
Co-Consultant, Associate Partner
Aon

Virginia Retirement System

Benita Falls Harper, JD ● Co-Consultant, Associate Partner

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Benita is a Pension Governance Attorney within Aon's Fiduciary Services Practice. In this role, she is responsible for providing consulting advice on fiduciary and governance issues to institutional investor clients. Benita's expertise working on fiduciary, governance, investment and operational issues makes her a valuable asset to the Fiduciary Services Team.

Prior to joining Aon in in 2022, Benita was the executive director at Fort Worth Employees' Retirement Fund. In this role, she was responsible for day-to-day operations of a $2.8 billion fund, which administers benefits to police, fire, and general employees of Fort Worth, Texas. Duties included implementation of board policy, strategic planning, investment program development and oversight, benefits administration, and staff development. Benita formerly worked for City of Fort Worth as an assistant city attorney and then moved up to a labor relations manager position, concentrating her time on labor negotiations. Following that, Benita became a City of Fort Worth Judge. Benita started her career in private law practice with Akin Gump Strauss Hauer & Feld, LLP.

She currently serves on the Cyber Security and Fiduciary and Plan Governance Committees of the National Association of Public Pension Attorneys.

Benita earned a J.D. from University of Houston Law School; she was also a research editor of the Houston Law Review. She earned a Bachelor of Arts, magna cum laude, Phi Beta Kappa from Rice University.

Virginia Retirement System — Fiduciary Responsibility & Governance Training

Benita Falls Harper, Associate Partner
Fiduciary Services Practice Member

March 22, 2023

Agenda

1

Fiduciary Law

2

Key Fiduciary Standards

3

Fiduciary Liability

4

Common Fiduciary Pitfalls

5

Governance

6

Hot Topics

Questions to Think About Today

Why? — Why is this session important?

Who? — Who is a fiduciary?

What? — What is required of fiduciaries?

How? — How can I avoid fiduciary liability?

CAVEAT: The purpose of the training today is not to provide legal advice.

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Why Fiduciary Training Is Important

- Even though fiduciary standards are the "**highest known to law**," fiduciary duties are a frequently misunderstood concept *Donovan v. Bierwirth*, 680 F.2d 263 (2nd Cir. 1982)
- Appreciating the rationale behind the strict fiduciary standards helps with understanding the concept
- Engaging in ongoing orientation is consistent with "good governance" and a best practice

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Fiduciary Law

Genesis of Fiduciary Standards

- Because funds are held in trust, basic principles of trust law apply
- Trust law is hundreds of years old, was started in England and was developed by the courts over time. It was applied to family, business, and charitable trusts even before pension funds
- General trust law contains standards that apply to all trusts and fiduciary law stems from those
  - Three parties are involved with a trust:
    - — Settlor
    - — Trustees
    - — Beneficiaries

Sources of Fiduciary Standards

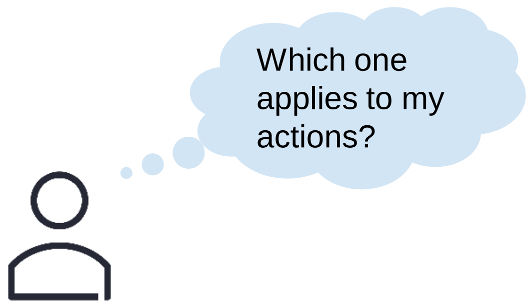
Primary Source for VRS – Code of Virginia § 51.1-124.30 and Art. X, § 11 of the Constitution of Virginia

- Employee Retirement Income Security Act (ERISA) of 1974
- Restatement of Trusts 3d: Prudent Investor Rule (1992)
- Uniform Prudent Investor Act (UPIA)
- Internal Revenue Code
- Case law
- Attorney General Opinions

Prudent Person Rule

- Different prudence standards have emerged and evolved over time.
  - Prudent "reasonable" person
  - Prudent investor
  - Prudent expert

- Prudent "reasonable" person — lower standard, "the trustee shall observe the standards in dealing with the trust assets that would be observed by a prudent man dealing with the property of another…" Model Prudent Man Statute



Restatement of Trusts 3d

- The trustee has a duty to administer the trust as a prudent person would, in light of the purposes, terms, and other circumstances of the trust
- The duty of prudence requires the exercise of reasonable care, skill, and caution
- If the trustee possesses, or procured appointment by purporting to possess, special facilities or greater skill than that of a person of ordinary prudence, the trustee has a duty to use such facilities or skill

Prudent Investor Rule

Differences from Prudent Reasonable Person Rule:

- A trust account's entire investment portfolio is considered when determining the prudence of an individual investment
- Diversification is explicitly required as a duty for prudent investing
- No category or type of investment is deemed inherently imprudent
- A fiduciary is permitted to delegate investment management and other functions to third parties

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Prudent Investor Rule

- Higher standard than prudent “reasonable” man
- The Uniform Prudent Investor Act (UPIA), adopted in 1992 by the American Law Institute's Third Restatement of the Law of Trusts (Restatement of Trusts 3d):
  - Reflects "modern portfolio theory" and "total return" approach to the exercise of fiduciary investment discretion
  - The much-criticized former rule of trust law forbidding delegation of investment and management functions was reversed Delegation is now permitted, and even encouraged, subject to safeguards (e.g., ongoing monitoring)
  - The requirement that fiduciaries diversify their investments was integrated into the definition of prudent investing

Prudent Investor
VRS

Prudent Investor Standard of Care

Virginia adopted the Uniform Prudent Investor Act in 1999. *See* Article 9 (§ 64.2-780 et seq.) of Chapter 7 of Title 64.2

“A trustee shall invest and manage trust assets as a prudent investor would, by considering the purposes, terms, distribution requirements, and other circumstances of the trust. In satisfying this standard, the trustee shall exercise reasonable care, skill, and caution.”

Virginia Uniform Prudent Investor Act, § 64.2-782(A)

ERISA Standards — Why is this important to public pension plans?

Highest standard under the law. A fiduciary shall discharge his duties with respect to a plan "with the care, skill, prudence and diligence under the circumstances then prevailing that a prudent man acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims." ERISA § 404(a)(1)

ERISA is the federal law that governs the operations and administration of private pension plans and welfare benefit plans

ERISA does not apply to governmental plans, such as VRS

- State and/or local laws and regulations govern public pension funds

Fiduciary standards in the law governing public funds are typically modeled after ERISA

- The language is often virtually the same
- ERISA reflects relevant trust law, and its "spirit" is typically followed by the courts in the absence of a stated standard
- ERISA is very influential in providing guidance about how fiduciaries should act

VRS Standard

- VRS prudent expert standard – “The Board…shall invest the assets of the Retirement System with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims…” Code of Virginia § 51.1-124.30(C)

Who is a Fiduciary?

The concept is that property is entrusted to a “trustee” on behalf of a beneficiary who receives money from the trust

There are two ways in which one is a fiduciary under the law:

1 The “designation” approach where the law or plan documents specifically designate a person as a fiduciary, or

2 The “functional” approach, where a person is deemed to be a fiduciary by virtue of their discretionary authority and control over plan assets

- Duties include whether a person has discretion and control over the administration of the plan or the management of plan assets
- Investment managers and investment consultants are fiduciaries
- Certain staff with discretion

Who is a Fiduciary?

- A person's fiduciary duty is limited to the scope of responsibility delegated to them
- A fiduciary may not avoid fiduciary status through documentation stating they are not a fiduciary
- Usually those performing ministerial tasks are not fiduciaries.
- Typically, accountants, attorneys, actuaries and record keepers are not considered to be fiduciaries

You don't have to be identified as a fiduciary or accept fiduciary status to be a fiduciary.

VRS — Uses Designation Approach

- The members of the board shall be the trustees of the fund
- Article X, § 11 of the Constitution of Virginia
- Code of Virginia § 51.1-124.30
  - Pursuant to the Board's enabling legislation, the members of the Board are fiduciaries to the System's members and beneficiaries. …As such they must act consistent with the duty of prudence as well as the duty of loyalty
- **As an employee of VRS**, each covered party has a fiduciary duty to the members of VRS to act solely in the interests of the members of the System and for the exclusive benefit of the System's members

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Key Fiduciary Standards

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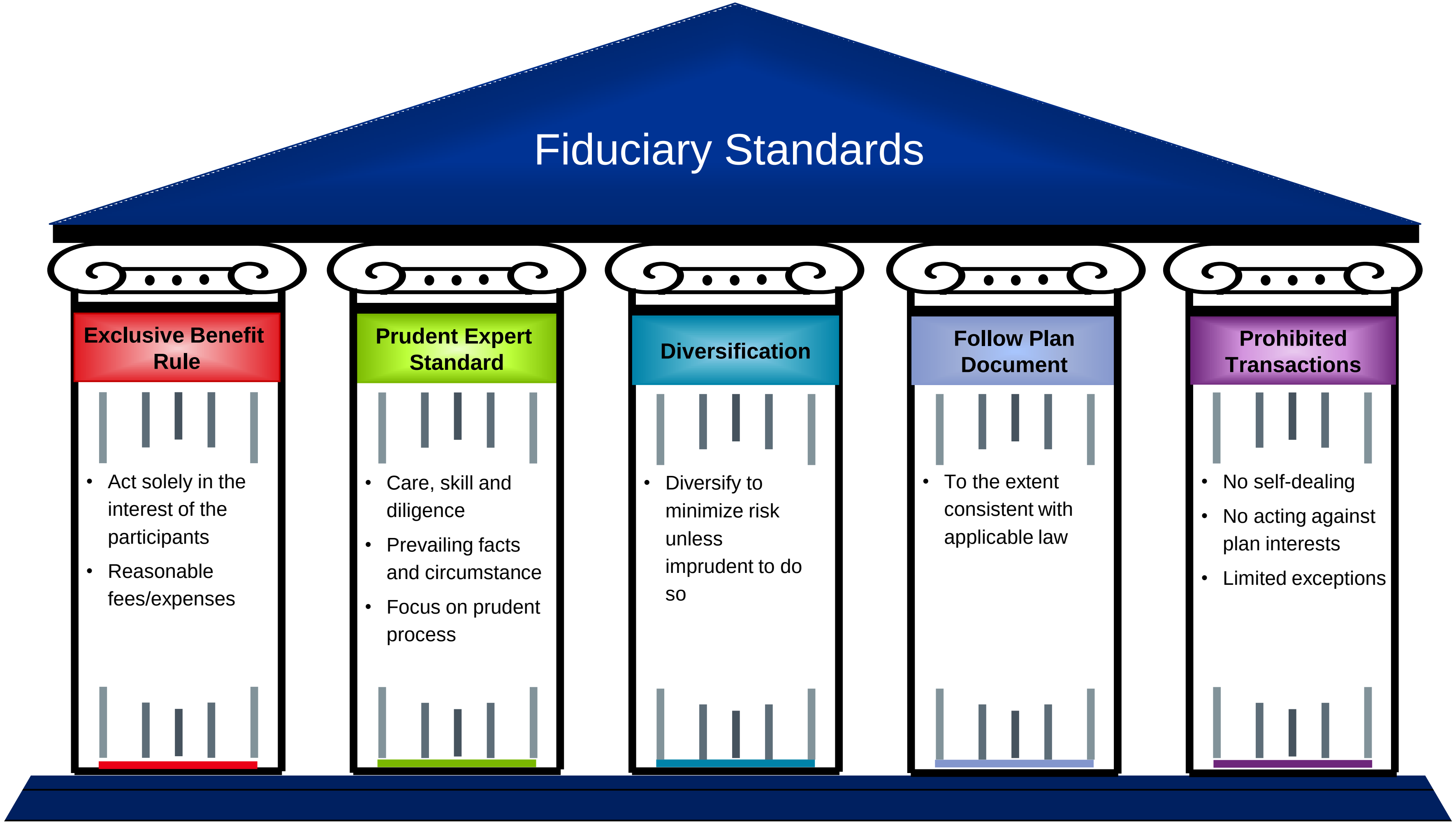
Overview of Fiduciary Standards



Key Fiduciary Standards

Key Fiduciary Standards				
Loyalty	Prudence	Diversification	Follow Plan Document	**Prohibited Transactions**
• Loyalty requires an unwavering commitment to act solely in the best interests of the beneficiaries for the exclusive purpose of providing them with benefits, also known as the "exclusive benefit rule"	• Prudence means having the required expertise, and if you do not have expertise, seeking it out. It is also how you make decisions and document the process	• Diversify in order to minimize risk unless it is not prudent	• Following plan documents is abiding by the applicable laws, regulations, policies and guidelines	• Refrain from prohibited transactions

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Duty of Loyalty

ERISA Exclusive Benefit Rule:

A fiduciary shall discharge his duties with respect to a plan solely in the interest of the participants and beneficiaries and –

For the exclusive purpose of:

- Providing benefits to participants and their beneficiaries
- Defraying reasonable expenses of administering the plan

ERISA § 404(a)(1)

Duty of Loyalty standard appears in the Virginia Constitution and the enabling statute: − "The funds of the retirement system ... shall be invested and administered solely in the interests of the members and beneficiaries thereof." Constitution of Virginia Art. X, § 11 − "The Board shall discharge its duties with respect to the Retirement System solely in the interest of the beneficiaries thereof…" Code of Virginia § 51.1-124.30(C)

Duty of Loyalty in Practice

Avoid conflicts; if you cannot, then disclose and recuse

When making decisions, fiduciaries may not balance interests

When acting as a fiduciary, you may not put others' interests ahead of the System's interests

The duty of loyalty has not evolved — courts strictly interpret

Conflict of Interests Act

Code of Virginia § 2.2-3100 et seq.

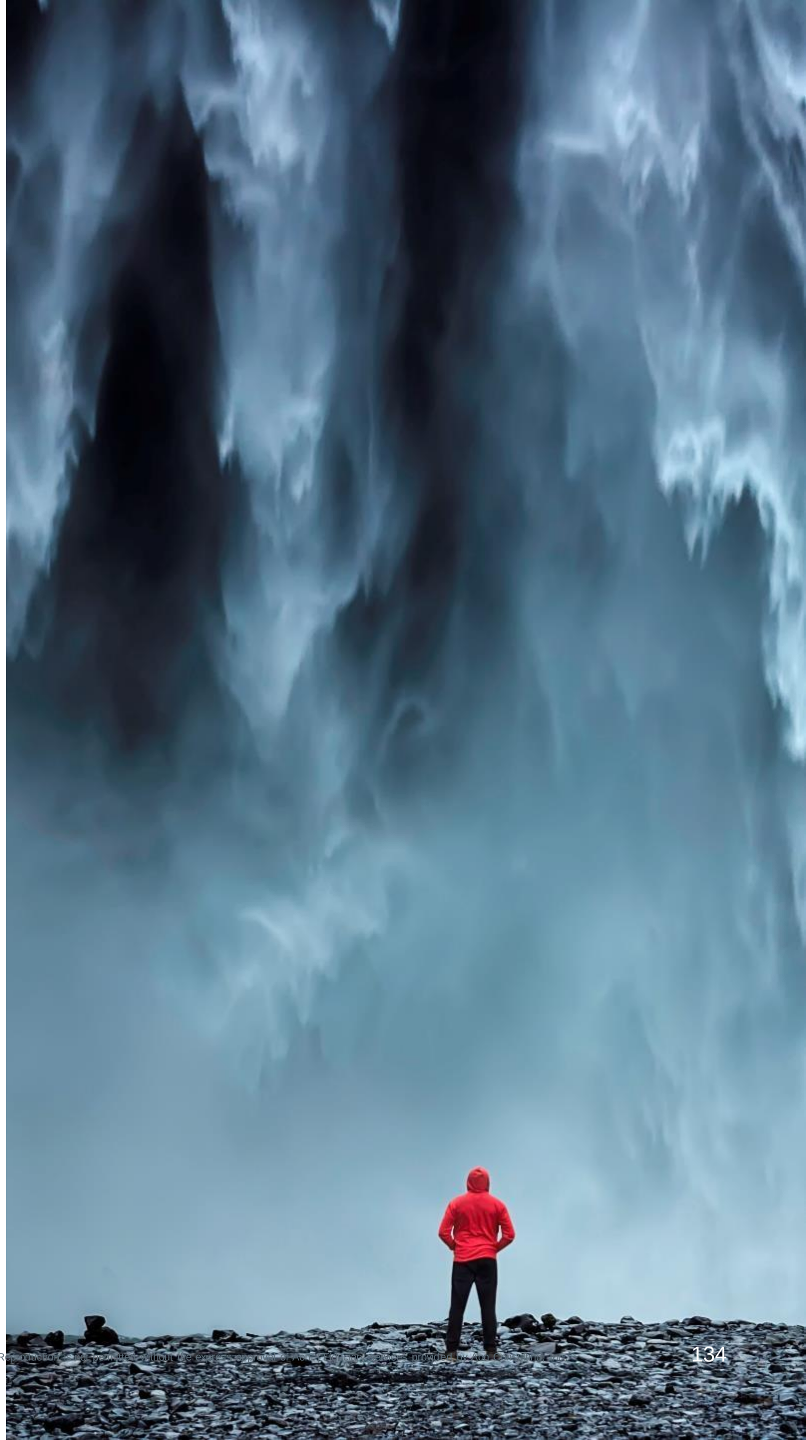
Each Board member shall avoid the appearance of impropriety regarding the acceptance of gifts.

Gifts = gratuity, favor, discount, entertainment, hospitability, loan, forbearance or anything of monetary value.

Includes gifts if the source of the gift is not identified. Donated if source cannot be ascertained.

Examples of Areas Where Duty of Loyalty Comes into Play

- Conflicts of Interest
- Acting in your self-interest
- Kickbacks from investment managers



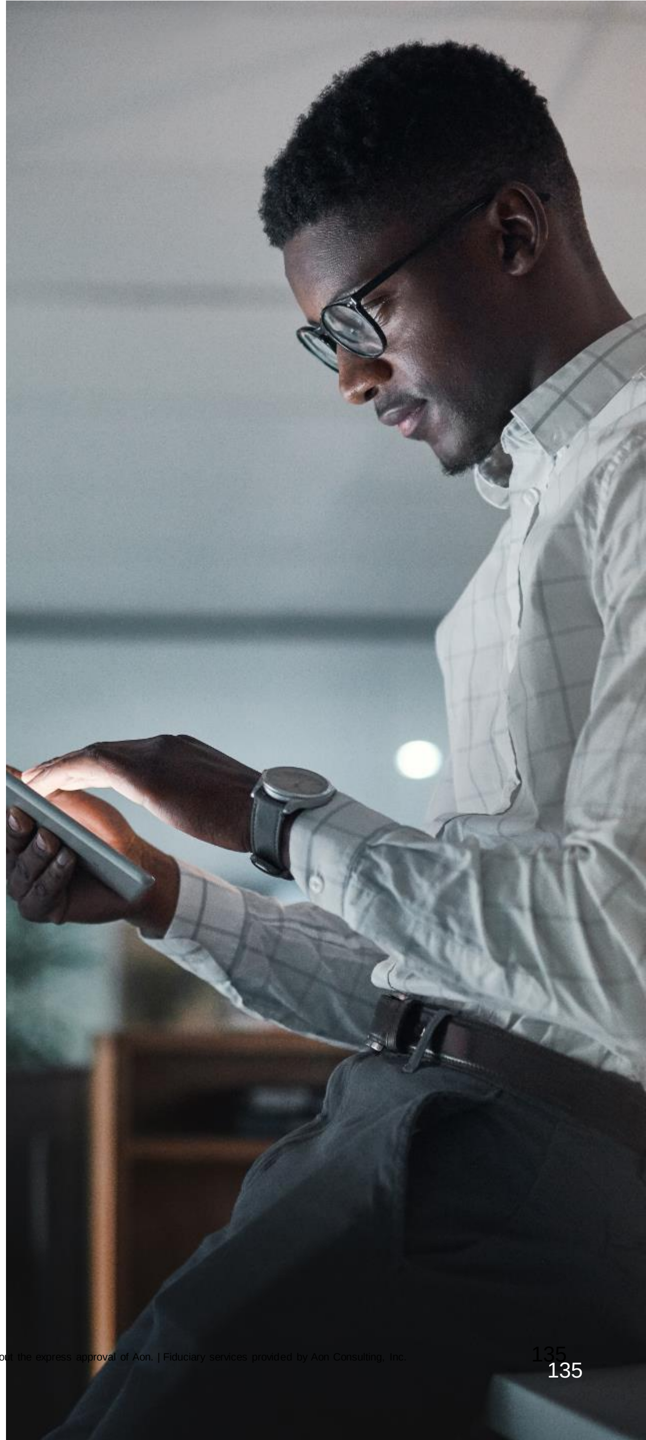
Duty of Prudence

Prudent Expert

A fiduciary shall discharge his duties with respect to a plan "with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent man acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims."

The Board shall discharge its duties with respect to the Retirement System solely in the interest of the beneficiaries thereof and shall invest the assets of the Retirement System with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims. The Board shall also diversify such investments so as to minimize the risk of large losses unless under the circumstances it is clearly prudent not to do so. Code of Virginia § 51.1-124.30

What would a prudent expert do in a like situation?



Duty of Prudence

Fiduciaries are judged by the prudence of their process.

“The test of prudence is one of conduct, and not a test of the result of performance of the investment. The focus of the inquiry is how the fiduciary acted in his selection of the investment, and not whether his investment succeeded or failed.”

Donovan v. Cunningham, 716 F.2d 1455, 1467 (5th Cir.1983)

Duty of Prudence

- A good process is more important than a good outcome and is the best defense to potential liability
  - **Written documentation is critical** in order to demonstrate that you acted prudently. Hard to prove your conduct or process if it is not documented
- The law requires prudence, not perfection
- Contemplates comparison to peers
- It is judged on an objective standard — prudent fiduciary behaves as other similarly situated fiduciaries would behave

Examples of Areas Where Duty of Prudence Usually Comes into Play

1

Setting the Asset Allocation

2

Documentation of Processes

3

Retaining Expert Assistance

4

Reviewing Performance

5

Managing Risk

6

Delegation of Authority

Standards of Prudence Evolve

Prudence standards evolve over time.

- As prudence standards evolve over time, fiduciaries need to keep up
- Due diligence practices of the past may not be enough
- Investments with the potential for high returns are often higher risk and require more due diligence

Decisions should be made using contemporary standards of prudent experts

- More specialized advice from independent consultants/service providers
- More written opinions rather than verbal “off the cuff” comments

Duty of Prudence in Practice

Collect and understand information before making a decision

- Consult with knowledgeable, independent outside external and/or internal experts (other staff)
- Review information on what others are doing, i.e., your peers
- Decisions should be consistent with information and policy
- Decisions should be made using contemporary standards of prudent experts — remember the duty of prudence evolves over time

Document, document, document steps taken in the deliberative decision-making process (evidence of prudent process)

Duty of Prudence — Delegation

A trustee has a duty personally to perform the responsibilities of trustee except as a prudent person might delegate those responsibilities to others. In deciding whether, to whom and in what manner to delegate fiduciary authority in the administration of a trust, and thereafter in supervising agents, the trustee is under a duty to the beneficiaries to exercise fiduciary discretion and to act as a prudent person would act in similar circumstances. Restatement of Trusts 3rd

- Delegation is allowed and even encouraged by the Prudent Investor Act and ERISA
- Failure to delegate may be a fiduciary breach
- To be prudent, when delegating the following generally applies:
    - Duty of prudence in selecting qualified professionals
    - Duty to specify the scope of the delegation
    - Duty to monitor the professionals to ensure the delegation is carried out in a manner consistent with the delegation, and the delegation continues to be prudent
- Board members may delegate but they cannot abdicate their fiduciary responsibility

Duty to Follow Plan Documents

- A fiduciary shall discharge his or her duties with respect to the plan in accordance with the documents and instruments governing the plan insofar as such documents and instruments are consistent with the provisions of the law. ERISA § 404(a)(1)(D)
  - **Plan document can include** multiple documents (By-laws, Investment Policy Statement, policies adopted by the Board)
- Fiduciaries cannot be arbitrary and capricious in their application of applicable law(s) or plan
- Familiarity with plan documents is essential

Duty to Follow Plan Documents

For VRS, the enabling statute is the primary plan document — Title 51.1 of the Code of Virginia and Art. X, § 11 of the Constitution of Virginia.

Other federal and state laws and regulations may also be applicable

Examples:

- Conflicts of interest and financial disclosure requirements
- Internal Revenue Code (e.g., tax qualification requirement)
- Securities laws applicable to investment transactions

The term “plan document” includes other documents that the Board has formally adopted

Plan documents must be consistent with applicable law and should reflect fund practices

Duty to Monitor

U.S. Supreme court opinion held fiduciaries have a continuing duty—separate and apart from the duty to exercise prudence in selecting investments at the outset—to monitor and remove imprudent investment options. *Tibble v. Edison International*, 135 S.Ct. 1823 (2015), *Hughes v. Northwestern Univ.*, 595 U.S. __(2022).

The board's role is to establish policies and procedures that staff can implement to protect the fund and ensure the highest level of services from external advisors.

Adequate reporting is necessary for prudent monitoring.

Trust but verify.

Duty to Diversify

The Board shall also diversify such investments so as to minimize the risk of a large losses unless under the circumstances it is clearly prudent not to do so. Code of Virginia § 51.1-124.30(C)

The duty to diversify emanates from the duty of prudence.

For a DB plan:
Modern Portfolio Theory typically applies –

- **Consider each investment within the context of the entire portfolio**
- **Create an “optimal” portfolio given the board’s risk/return preferences**

Duty to Diversify

- ERISA requires diversification so as to minimize the risk of a large loss, unless under the circumstances it is clearly prudent not to do so.
- The duty to diversify emanates from the duty of prudence.
- For DB plans, Modern Portfolio Theory:
  - Diversify plan assets unless it has been reasonably determined that the trust is better served by not diversifying.
  - Consider each investment within the context of the entire portfolio.
  - Create an “optimal” portfolio given the Board’s risk/return preferences.
- For DC plans, participants must be able to choose among alternatives which are diversified and have materially different risk and return characteristics.
  - Offer an adequate number of investment options and communicate risk/return characteristics with plan participants.
  - ERISA requires at least three. More investment options are not necessarily better.

3

Fiduciary Liability

Fiduciary Liability

- The laws governing public fund fiduciaries typically impose liability for a breach of duty
- Under ERISA, a fiduciary who fails to discharge any of their fiduciary responsibilities:
  - “[S]hall be personally liable to make good to such plan any losses to the plan resulting from each such breach”
  - Shall also be personally liable to restore any profits which have been made through use of plan assets
  - Shall be subject “to such other equitable or remedial relief as the court may deem appropriate”
- Fiduciary liability = personal liability for losses;
  - Restoration of profits, and
  - Loss of reputation
- Attorney-client privilege may run to the plan rather than the fiduciary

VRS Limitations on Liability for Losses

Code of Virginia § 51.1-124.30(D) and (E)

(D) No officer, director, or member of the Board or of any advisory committee of the Retirement System or any of its tax-exempt subsidiary corporations whose actions are within the standard of care in subsection C above shall be held personally liable for losses suffered by the Retirement System on investments made under the authority of this chapter.

(E) In the case of a plan administered by the Board which provides individual accounts permitting an employee or beneficiary to exercise discretion over assets in his account, the Board shall not be liable for any loss resulting from such employee's or beneficiary's (i) exercise of discretion over the assets in his account or (ii) inaction with respect to the assets in his account that results in such assets being placed in a default investment option selected by the Board.

Co-Fiduciary Liability Concept

- Co-fiduciary liability means “you are your brother’s keeper”
- ERISA imposes co-fiduciary liability on any fiduciary who participates “knowingly in, or knowingly undertakes to conceal. . . [a breach] knowing [it] is a breach”
  - A fiduciary has a duty to prevent or halt a co-fiduciary’s breach
  - A fiduciary is liable for a co-fiduciary’s breach of their duties if the fiduciary knowingly participates in, conceals, or enables the co-fiduciary’s breach
  - If you know of another’s fiduciary breach and you do nothing about it, you are breaching your fiduciary duty
  - A fiduciary’s inaction or failure to act promptly to halt another fiduciary’s breach can give rise to co-fiduciary liability
  - For liability to attach, you must have actual knowledge of an action you know to be a breach
- The courts have said that fiduciaries have a duty to speak up and take reasonable steps to prevent or remedy the breach
  - Resignation from your position is typically not sufficient
  - Steps might include obtaining an injunction

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Co-Fiduciary – VRS Code of Ethics and Conduct

Code of Ethics and Conduct IV. H.

Adhere to the responsibilities of a co-fiduciary by not enabling, knowingly participating in or concealing a breach by another Board member. If a Board member is aware of a breach, he or she shall take all reasonable steps to prevent or halt such breach and report it to the Board chair and secretary.

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Prohibited Transactions

Prohibited Transactions = Conflicts of Interest

Conflicts of interest can arise if personal financial gain impairs objective decision-making

ERISA bars fiduciaries from engaging in certain transactions to avoid conflicts

Prohibited Transactions

- Conflicts of interest can arise if personal financial gain impairs objective decision-making
- ERISA bars fiduciaries from engaging in certain transactions
  - “Parties-in-interest”
    - from doing business with the plan
    - The employer, employees and stakeholders, plan fiduciaries, service providers, and statutorily defined owners, officers, and relatives of parties-in-interest
  - “Prohibited transactions”
    - A sale, exchange, or lease of any property between the plan and party-in-interest
    - Lending money or other extension of credit between the plan and party-in-interest
    - Furnishing goods, services, or facilities between the plan and party-in-interest.
  - “Self-dealing”
    - Using the plan’s assets in their own interest
    - Acting on both sides of a transaction involving the plan
    - Receiving anything of value for their personal account from any party doing business with the plan related to that business

Ways to Mitigate Fiduciary Liability

A thorough orientation and continuing education on fiduciary responsibility

A good understanding of common scenarios where fiduciary duties come into play

A thorough decision-making process with clear documentation of actions and rationale

Obtain expert advice from the staff, legal counsel, and others when needed

Prudent delegation and diligent oversight — understand what authority has been delegated and what authority has been retained

Good governance policies including clear accountability and a commitment to ongoing oversight activities

4

Common Fiduciary Pitfalls to Watch Out For

Examples of Fiduciary Pitfalls

Failing to operate the System prudently and for the exclusive benefit of participants	Failure to document decisions	Failure to periodically review policies	Failure to engage in ongoing education
Failure to engage in succession planning	Inconsistent actions	Failure to identify problems and take action when needed	Failure to follow the plan documents (unless inconsistent with law)
Overreaction to recent information	Failure to have a strategic plan and/or follow it	Failure to properly select and monitor service providers	Operating in a vacuum, not knowing what the industry and your peers are doing

5

Governance

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Why is Good Governance Important?

Fulfill Fiduciary Responsibilities

Good governance policies and practices can help fiduciaries meet their fiduciary responsibilities

Prevent Fiduciary Breaches

Good governance helps to prevent fiduciary breaches and minimize risk

Add Value

Good governance adds value:

- Studies have shown that “good governance” is associated with increased returns
- It can reduce the likelihood of litigation
- Good governance fosters stakeholder confidence

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Elements of Good Governance

Elements of Good Governance

Monitoring	Independence	Transparency and Accountability	Efficient Board Meetings	Effective Leadership	Committees
Prudent Documentation	Strategic Plan	Orientation, Ongoing Training, and Education	Culture of Conflicts of Interest Avoidance	Speaking in One Voice	Laws
Court Cases	Policies	Minutes	Agendas	Annual Work Plan	

Independence

- It is important for a pension fund to be independent
- Independence is often measured by evidence of a pension fund’s:
  - Procurement authority
  - Budgetary authority
  - Personnel authority — hire, evaluate, compensate, and terminate staff
- If non-fiduciaries are able to exert control over pension fund fiduciaries, the duties of loyalty and prudence could be compromised.
- The duty of loyalty demands independence from:
  - The appointing body
  - The plan sponsor
  - Taxpayers
  - The general public
  - Sub-groups of the participants

Why Board Minutes Are Important

- The fundamental role of minutes is to preserve an accurate and official record of the proceedings of a meeting
- Well-kept minutes:
  - Serve as a record of decisions
  - Reflect individual member dissent where appropriate
  - Offer guidance for future VRS action
  - Serve as a valuable source of contemporaneous evidence in regulatory or judicial proceedings
  - Reduce misunderstanding as to the intent of VRS
  - Serve as evidence of the process the fiduciaries followed
- Fiduciaries are judged by the prudence of their process
  - Minutes serve as documentation of the deliberative process and are essential to establishing that VRS has acted consistently with its fiduciary duties

VRS Governance Style

The Board governs with an emphasis on:

- Outward vision rather than internal preoccupation
- Encouraging diversity of viewpoint
- Strategic leadership rather than administrative detail
- Maintaining a clear distinction between the roles of the Board and those of the Director, CIO, and the Audit Director
- Collective determination rather than individual decision-making
- Being proactive rather than reactive

6

Hot Topics

Cybersecurity

Cybersecurity

- Retirement plans hold assets and participant data that are attractive to cybercriminals.
- Retirement plan fiduciaries have a duty to protect the data and assets from a cyber breach.
- Commit to a **continuous process of evaluation** and **improvement** – DOL guidance confirms fiduciaries should have a process to mitigate cybersecurity risks.
- Regular assessments, testing, refinement, and responsiveness are essential to **keeping critical assets protected** and **ensuring strong governance** and compliance.
- Organizations need to be constantly focused on **limiting** the **economic** and **reputational damage** from incidents.

Hot Topics: Excessive Fee Litigation

Is litigation a real threat?

More than **315** excessive fee lawsuits filed since 2005[1]

Over **$1.2b** in plan settlements over the last decade[1]

10% Probability of plan sponsor targeted in fiduciary litigation annually[2]

- Discussion of excessive fee and other litigation cases
- Predominantly focused on ERISA plans

Excessive Fees

[1] Aon's Financial Services Group tracking of DC plan (401(k); 403(b)) excess fee lawsuits
[2] Understanding and Mitigating Risks: Fee Litigation and the Changing Landscape of Fiduciary Liability Insurance Coverage, "Defined Contribution Institutional Investment Association, November 4, 2021

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Guest Speaker:
Liability Primer

Thomas Cassara

Chief Executive Officer

Agilis

Guest Speaker: Liability Primer

Thomas Cassara ● Chief Executive Officer

Agilis

Tom Cassara is the CEO of Agilis and a senior consultant. Tom consults with institutional clients across the investment and actuarial spectrum. This includes defined benefit, defined contribution, and retiree medical plans. Tom works with clients to bring his 30 + years of experience across a wide range of institutional organizations to provide custom solutions with a focus on risk management.

Prior to joining Agilis, Tom was a Senior Partner with Mercer leading their US East Wealth business in addition to providing strategic investment and actuarial advice to clients.

He is a Fellow of the Society of Actuaries, an Enrolled Actuary, a CFA charter holder and has a Series 3 license. Tom has a Bachelor of Science degree from Wake Forest University.

Liability Primer
Virginia Retirement System Board of Trustees Retreat

March 22, 2023

Tom Cassara

Actuarial and investment consulting – Macro investment strategies – Pension annuity purchases
Pension plan termination – Derivative strategies – Pooled employer plan consulting – OCIO

Introduction to Agilis

AGILIS

Innovative & Customized Solutions

We have the independence and resources to implement strategies tailored to our clients' unique needs and constraints

Engaged Consultants

Proven consultants that are considered thought leaders and innovators within the industry

Integrated Service Offerings

As an integrated actuarial and investment firm, we offer a holistic view to each client's situation.

Actuarial & Advisory

OCIO

Derivatives

Executive Summary

AGILIS

Summary

- Liabilities are relatively predictable but do have risk factors that impact the annual contribution rate, liquidity ratio and ultimately the asset allocation decision
- VRS has already mitigated many of these risk factors
- Due to the mitigation efforts, contribution risk, as expressed as dollars should be relatively stable in short term
- However, expressed as a percentage of pay, contribution risk can become more volatile
- The more material short to mid term risk will be in the future annual liquidity needs of the fund
  - This may cause the fund to regularly raise cash (sell investments), which can be detrimental in falling markets
- Legislation changes can impact the above

Background

Basic Data

Employer contributions ranging from 14-31% of payroll ($4.5B)

$101B of assets and ~$115B of liability

Benefit payments of $5.8B

Expected investment return of 6.75% (~$6.8B)

Larger plan(s) are funded between 82% and 84% as of June 30, 2022

Plan Design Key Features

Feature	Plan 1	Plan 2	Hybrid
General Group Covered	Hired < 7/1/2010	Hired between 7/1/2010 & 1/1/2014	Hired > 1/1/2014
Employee Contribution	5% of compensation	5% of compensation	4% DB / 1% DC
Retiree CPI increase	100% of 1st 3% and 50% of next 4%	100% of 1st 2% and 50% of next 2%	100% of 1st 2% and 50% of next 2%

- All plans are based on final average earnings and service at retirement
- Generally paid as an annuity
- Early retirement subsidies exist in all plans but smaller subsidy in Plan 2 and Hybrid due to restrictions on retirement age

Annual Contribution Calculation

Cost of annual increase in benefit and expenses

(5% to 21% of payroll)

+

20 year amortization of changes in unfunded liability

(8% to 16% of payroll)

- Above is expressed as a percentage of payroll
- For amortization purposes, asset gains and losses are first "smoothed" over 5 years
- Original amortization began 7/1/2013 over 30 years

Liquidity Ratio

Net Fund Outflows / Market Value

Today liquidity ratios are less than 4%

- Higher ratios will require assets to be periodically sold to meet benefit obligations
- Based on current valuation assumptions, projected liquidity needs are expected to double in 2-3 years and triple in 5-6 years with biggest impact for Teachers and State employees
- General assembly provided an additional $750M in 2022 and will provide another $250M in 2023

Risk Factors

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Liability Risk Factors

Item	Current Assumption	Impact	Contribution Impact	Liquidity Impact
Inflation	2.5%	Benefit payments	20 years	Immediate
Merit increases		Payroll and normal cost	Immediate	Immediate
Longevity	Improvements each year	Liability	20 years	Small impact immediately
Unanticipated retirement	Based on experience	Benefit payments and payroll	20 years	Immediate
Workforce reduction	Not assumed	Lower normal cost, but lower payroll	Immediate	Smaller contributions
Legislative change	Not assumed	Depends on design	Depends on design	Most likely immediate impact

- Impact on contributions is based on how experience differs from the actuarial assumptions
  - However, changes in payroll and normal cost are impacted immediately
  - Most other changes will have a smaller immediate impact
- The liquidity ratio however is immediately impacted
- Key reminder: Assets are first smoothed over 5 years and then all experience is amortized over 20 years

Inflation

Liabilities assume a 2.5% annual inflation rate. Impact of deviations:

Immediate impact	Longer term impact
Benefit Payments	Material increase in benefit payments
Payroll	Change in discount rate / investment return
	Potential retirement delays

- Material impact would be for periods of prolonged inflation
  - Increased benefit payments at same time plan is maturing (new retirements from baby boomers)
  - Increasing liquidity ratio
  - Potentially lower asset returns at same time
- Potential hedging through investments correlated with inflation
  - Plan has already partially hedged inflation through plan design

Longevity and Retirement

- Longevity risk is difficult to measure in short term
- Actuary today assumes mortality improvements each year
- However, with baby boomer generation in retirement eligibility period of career, especially for state employees, risk of materially increased benefit payments has strong possibility
  - To extent retirees are not replaced, payroll will decrease which may cause an increase in contribution percentage (dollar cost of prior amortizations would not change)
- Unfortunately, these risks are difficult to hedge, typical hedging (without increasing the contribution) would be to:
  - Run plan "hot" trying to generate extra investment return and thus surplus
  - Plan design changes to further remove early retirement subsidies

Future Changes in Employment

- Workforce numbers or payroll can materially change for various reasons
  - Technology improvements
  - New Pandemic
  - Budget changes
  - Etc.
  - Example of USPS, where in past 10 years workforce has dropped by nearly 20%
- Resulting impact could lead to material decrease in payroll and active headcount
  - This will result in lower dollar contributions to fund, however, may increase contributions as a percentage of pay
  - May increase liquidity ratio quickly

Key impact to VRS

- The Plan today is expected to see cash outflows triple over next 5 – 6 years which will increase the liquidity ratio
- Acceleration or deceleration of that timing will depend on many factors, not all of which are investment related
- Different factors will impact the contribution and liquidity ratio differently

Fiscal Year Ending	Projected Net Cash Flow	Fiscal Year Ending	Projected Net Cash Flow
2022	$1.4B	2026	$3.5B
2023	$2.7B	2027	$4.1B
2024	$2.4B	2028	$4.3B
2025	$3.3B		

2022 impacted by additional General Assembly contributions, additional 2023 contribution not included

Summary

Non-Investment Risks

Item	Impact	Contribution Impact	Liquidity Impact	Hedging
Inflation	Benefit payments	20 years	Immediate	Inflation assets
Inflation and merit increases	Payroll and normal cost	Immediate	Immediate	Inflation assets
Longevity	Liability	20 years	Small impact immediately	“Hot” portfolio
Unanticipated retirement	Benefit payments and payroll	20 years	Immediate	“Hot” portfolio
Workforce reduction	Lower normal cost, but lower payroll	Immediate	Smaller contributions	“Hot” portfolio
Legislative Change	Unknown	Unknown	Likely immediate impact	Not possible

Other considerations are that there may be pressure to limit an increase in the contribution percentage

Final thoughts

VRS has mitigated some of the impact of many non-investment related risks to the plan:

- Plan design changes
- CPI limit on retiree benefits
- 20-year amortization of gains and losses

Largest non-investment risk for VRS will be for scenarios such as:

- Prolonged high inflationary period
- Material decrease in payroll / active participants
- Material number of retirements, especially those with subsidized early retirement
- Legislative changes

Increased needs for liquidity will arise in the short term:

- May create desire to anticipate portfolio changes in planning period
- Look for opportunities to increase annual investment cash flow

Increase in contribution rates will most likely occur, if net amortization amounts remain constant

Important performance and legal information

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Virginia Retirement System

Break: 10:45 – 11:00 a.m.

Guest Speaker:
Pension Opportunities and Challenges

Tim McCusker
Chief Investment Officer
NEPC, LLC

Tim McCusker ● Chief Investment Officer

NEPC, LLC

Tim joined NEPC in 2006 and began his career in the investment industry in 2002. Tim is responsible for overseeing Investment Research at NEPC, a group of 72 professionals including dedicated teams focusing on Alternative Investments, Public Markets, and Asset Allocation. As CIO, Tim leads investment strategy development for NEPC including market assessment and outlook, communication of key themes and best ideas, as well as evaluation of investment strategies. Tim also works closely with a wide variety of clients to construct investment portfolios to meet their long-term objectives. Tim chairs the Partners' Research Committee and is a member of the Public Markets and Alternative Research Due Diligence Committees and the Asset Allocation Committee. Additionally, Tim is a member of the firm's Management Group. Tim was named in *CIO* magazine's "The Knowledge Brokers 2016" edition as one of the world's most influential investment consultants. In 2015, Tim topped *CIO* magazine's 2015 annual ranking of the world's most influential investment consultants in the Generalist consultant category. In 2014, Tim was recognized by *CIO* magazine in their edition titled "The Knowledge Broker" as one of the top 25 of the world's most influential investment consultants. Tim ranked 6th out of the 25 consultants recognized.

Prior to becoming Chief Investment Officer, Tim served as NEPC's Director of Traditional Research, overseeing long-only manager research and Asset Allocation. Previously, Tim worked in Asset Allocation and Manager Research functions, where his responsibilities included maintaining and developing asset allocation models and frameworks used broadly by NEPC clients as well as Global Asset Allocation and Risk Parity manager research. Before joining NEPC, Tim was an associate at Towers Perrin, where he provided actuarial consulting advice and addressed plan asset-liability issues for clients.

Tim earned his B.A. in Mathematics from Colgate University. He is a Fellow of the Society of Actuaries (FSA) and holds the Chartered Financial Analyst (CFA) and Chartered Alternative Investments Analyst (CAIA) designations.

VIRGINIA RETIREMENT SYSTEM

US PENSION TRENDS

MARCH 2023

AGENDA

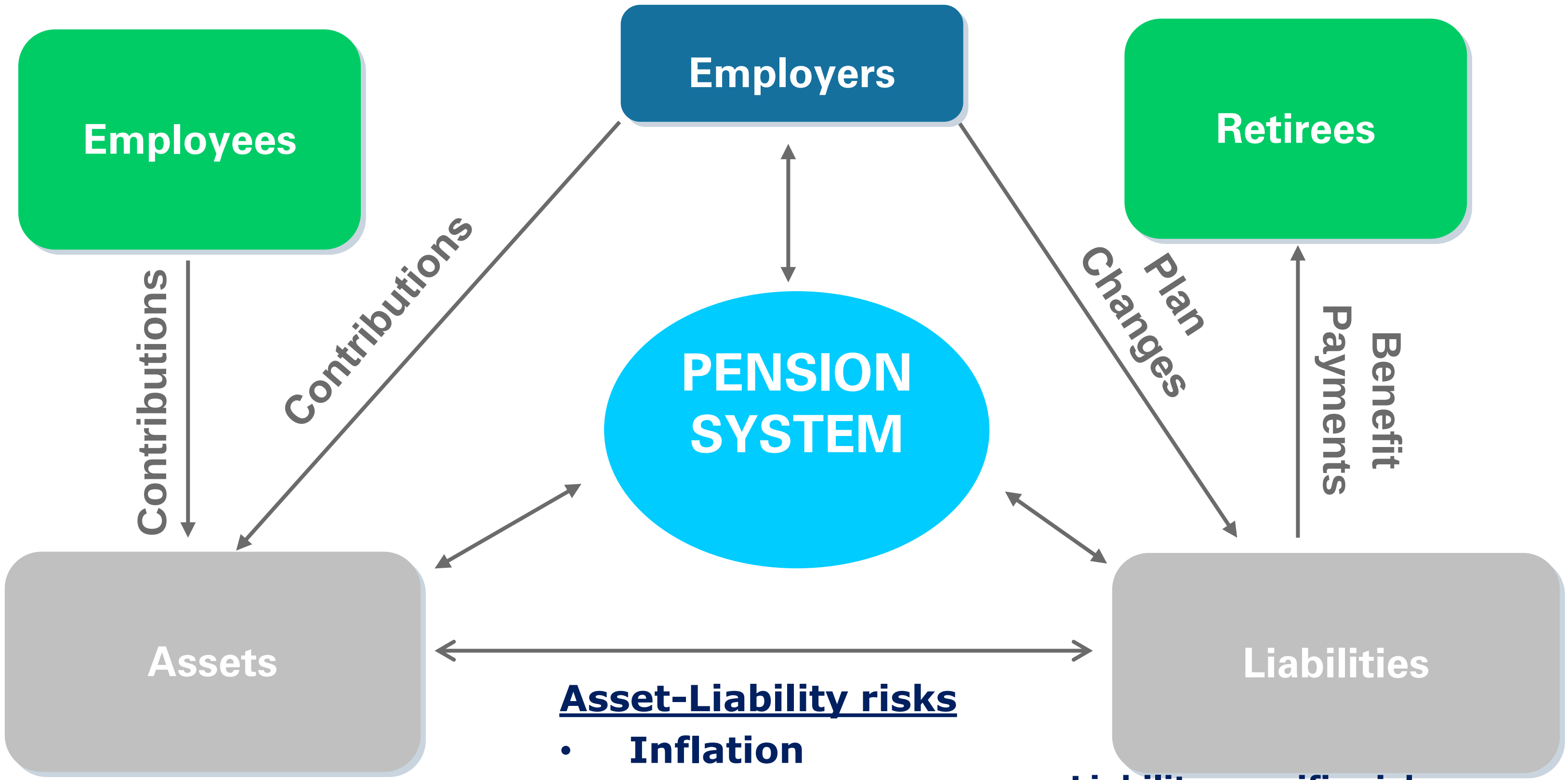
- PENSION FIRST PRINCIPLES
- US PENSIONS – CURRENT CONDITIONS
- RECENT TRENDS
- CONCLUSION

PENSION FIRST PRINCIPLES

FIRST PRINCIPLES

- The funding of pension benefits is made possible through member and employer contributions and returns on investment
- The long-term expected return on assets drives the selection of an appropriate interest rate for discounting public pension liabilities
- Expected Return on Assets is based on assumptions – actual experience will likely depart from those assumptions
- Long-term nature of pension obligations positions well funded pension plans to take advantage of long-term investment opportunities
- It is critical and healthy for pension trustees to regularly review fundamental characteristics of the pension plan:
- Risk is multi-dimensional and should be considered from different perspectives – Risk is not just volatility!

TYPICAL PENSION PLAN LINKAGES



Asset-Liability risks

- Inflation
- Economic Growth
- Interest Rates

Asset specific risks

- Manager structure
- Rebalancing

Liability specific risks

- Demographics
- Benefit Changes
- Adequacy of existing reserves for existing retirees

BALANCE FUNDAMENTAL PENSION EQUATION

- **All the complexities of pension plans boil down to the classic equation:**

$$C + I = B + E$$

- **Contributions (C) plus Investment Earnings (I) must equal all Benefits (B) and Expenses (E)**

Plan Factor	Flexibility/Constraint
(C) **Contributions**	For US Public Pensions, contributions are typically a mix of employer and employee contributions • Level of annual contributions can be static or variable • Variability can depend unfunded amortization, benefit costs re-routing of contributions to other sources (Retiree Health Care)

(I)
 	
Investment Return
	Investment pool can be restructured to maintain target return
	• Increase/decrease risk and/or portfolio efficiency
	• Return target (and risk level) could be scaled up/down over time as funded status changes
	• Lower than expected annual returns require adjusting other levers
	    • Higher Contributions or longer amortization to full funding
	    • Higher Investment Returns in later years

(B + E) **Benefits** **&** **Expenses**	Accrued benefits are fixed Plan Design Changes can adjust future benefit accruals

CURRENT CONDITIONS

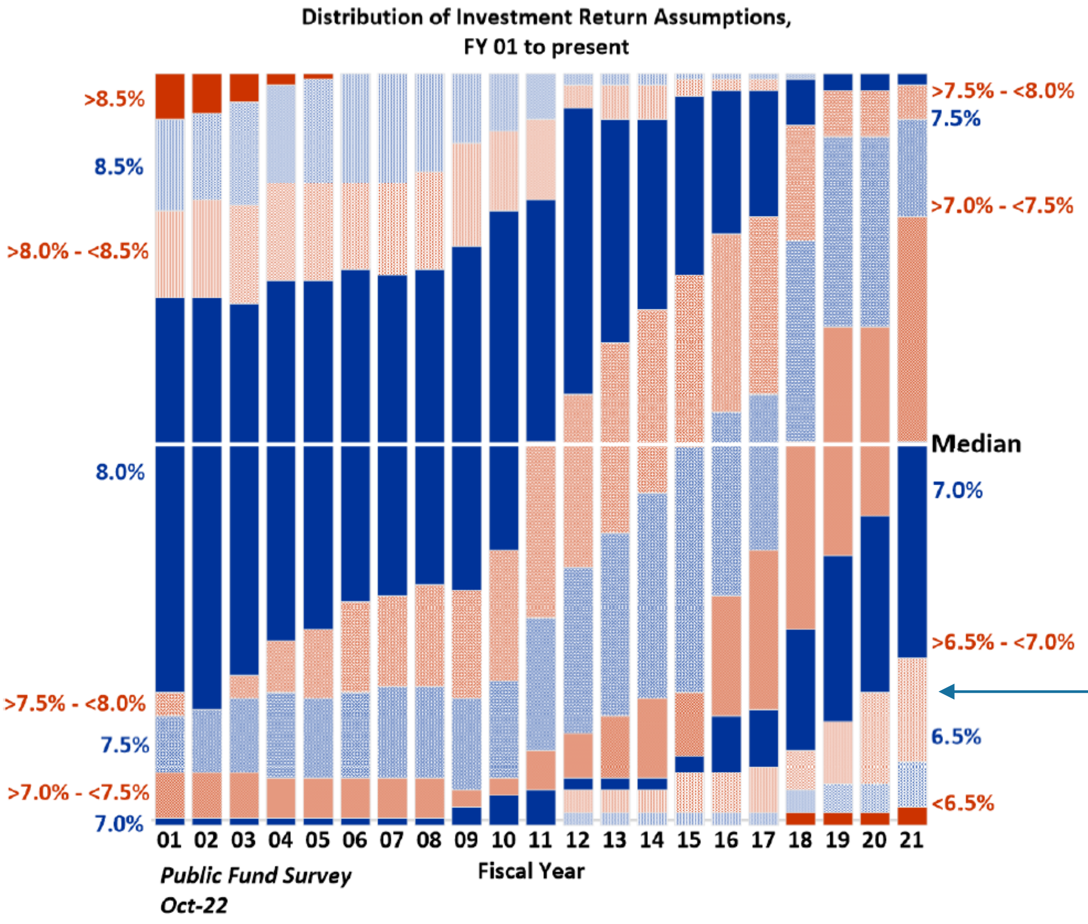
CHALLENGES OF LAST 20 YEARS

PENSIONS ACTIVELY RESPONDED TO CHALLENGES

Low Return Expectations	• Lower EROAs
Even Lower Return Expectations	• Increasing Risk Tolerance/Illiquidity
Challenged Funded Status	• Stable/Improved Funding through Investment Returns and Contributions
Maturing Pension Systems	• Design/Financing Changes

INVESTMENT RETURN ASSUMPTIONS

TWENTY YEAR TREND DOWNWARD ONE FULL PERCENT

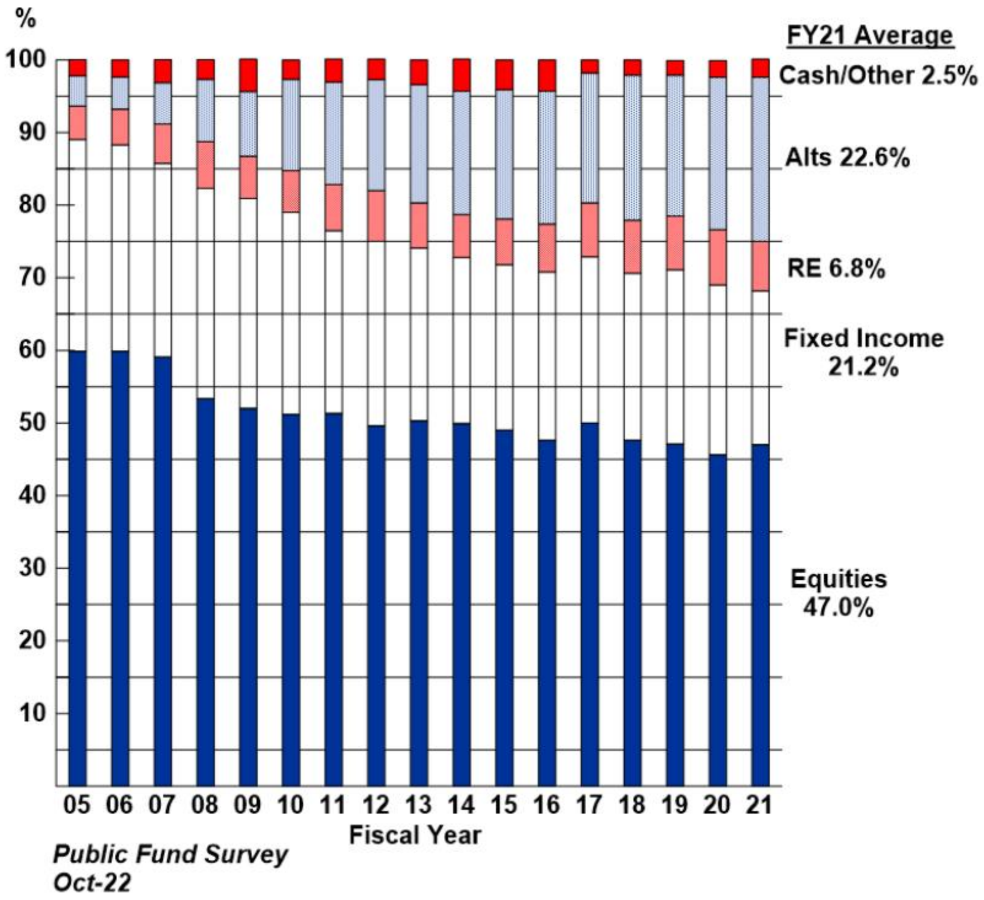


VRS: 6.75%

Source: NASRA

AVERAGE ASSET ALLOCATION

INCREASING USE OF ALTERNATIVES/ILLIQUIDITY…

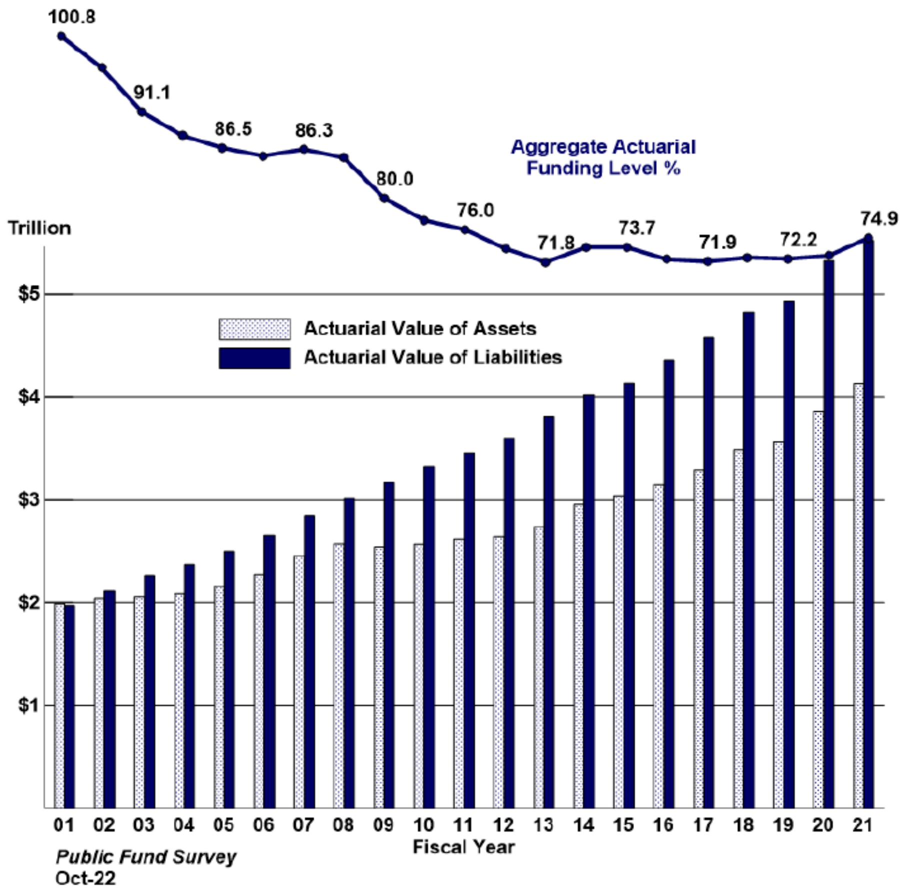


VRS	Policy
Public Equity	34%
Fixed Income	15%
Private Equity+	18%
Credit Strategies	14%
Real Assets	14%
Other	5%

Source: NASRA (Alts: Private Equity/Debt and Hedge Funds), VARetire.org (Private Equity+: PE + PIP, Other: MA Public Strategies, EMP, Cash)

AGGREGATE ACTUARIAL FUNDED STATUS

STABLE FUNDED STATUS AFTER ABSORBING GFC LOSSES…

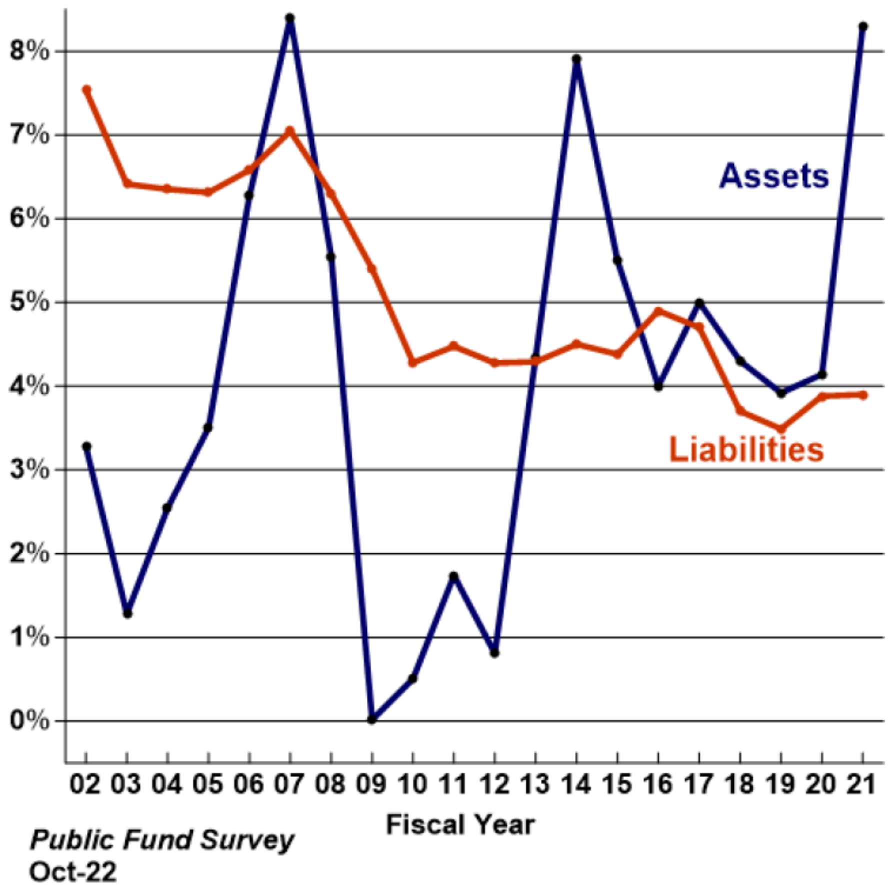


VRS: 82%

Source: NASRA

ACTUARIAL ASSET VALUE VS. LIABILITY GROWTH

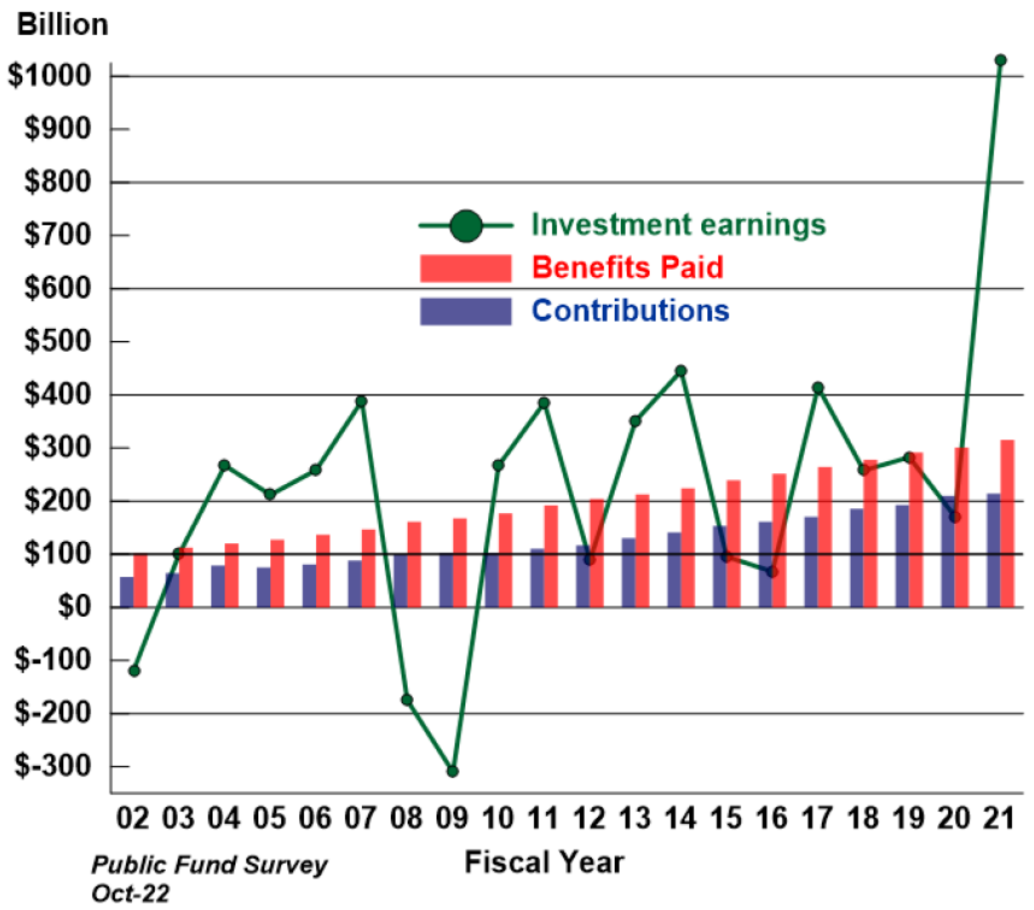
ASSETS OUTPERFORMING LIABILITIES OVER LAST DECADE



Source: NASRA

FUNDING AND INVESTMENTS HAVE BEEN STRONG

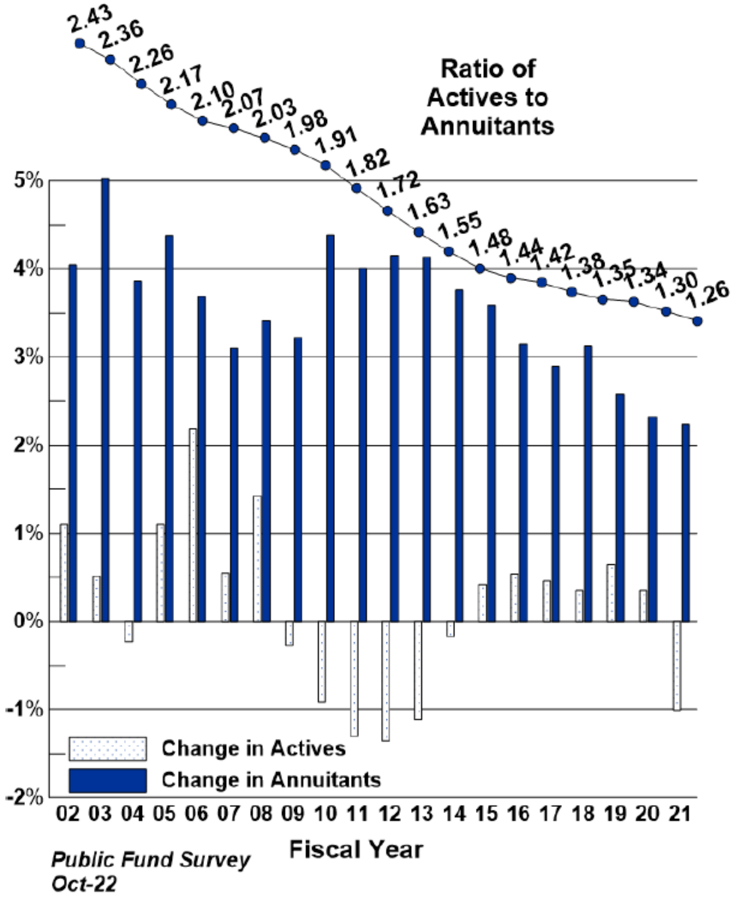
BUT PAYOUTS HAVE RISEN AS WELL…



Source: NASRA

AGGREGATE PENSION ACTIVE:RETIREE RATIO

PENSION MATURITY CONTINUES



VRS: 1.51

Source: NASRA

KEY PENSION HEALTH TRENDS

- **US Public Pensions in aggregate remain underfunded**
- **Strong asset returns of last ten years offset by:**
  - Negative cash flows on underfunded plans
  - Lowering of discount rates (increasing PV of liabilities)
- **Lowering of Expected Return on Assets (EROA) reflects expectation of lower future returns**
- **Pensions have sought ways to close EROA gap by increasing risk, sophistication and illiquidity**

RECENT TRENDS

PORTFOLIO LEVERAGE

LOW RATES AND POSITIVE RISK PREMIUMS DROVE UPTICK

Positives

Offers Opportunity to Improve Diversification

Enhances Return Expectations

Positive Risk-Premium Environment Expected to Continue

Natural Efficient Portfolio Enhancement

Public Pension Credit Profile Minimizes Borrowing Costs

Negatives

Complexity

Widens Range of Potential Outcomes

Drawdowns More Painful with Negative Cash Flow Dynamic

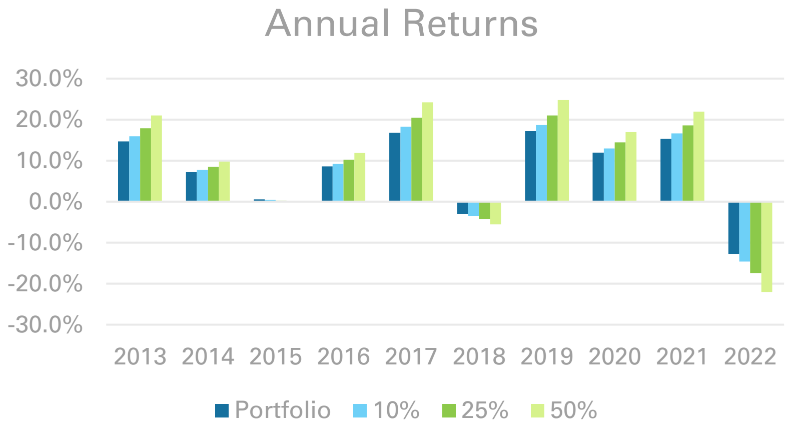
Amplifies Liquidity Needs

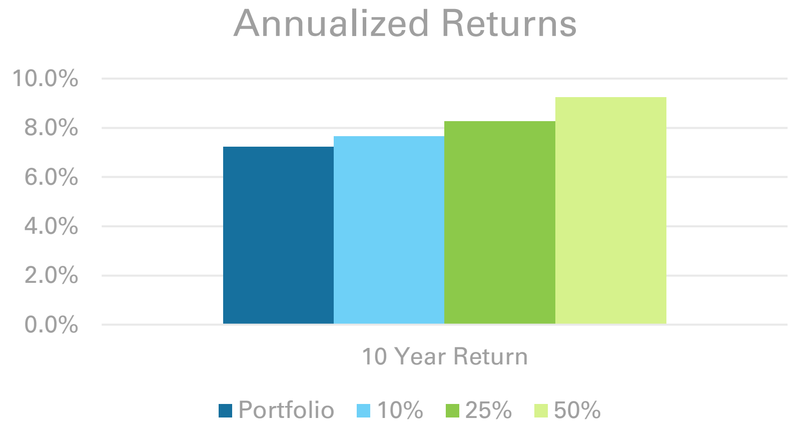
Today's Portfolios on Average are Now Less Liquid

Borrowing Costs Have Increased

PORTFOLIO LEVERAGE EXAMPLE

WELL REWARDED OVER LAST TEN YEARS





- **Diversified Large Public Pension with various leverage levels employed**

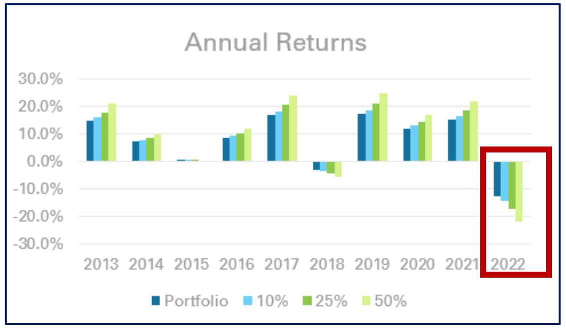
- **Great decade for applying leverage**
  - Low borrowing costs
  - Positive returns over borrowing costs and (8 out of 10 years)

- **No surprise in this environment – more leverage rewarded with more returns**

Details: Actual annual returns for large public pension for 2013-2022, assumed 2% borrowing costs for 2013-2021 and 6% borrowing costs for 2022

ZOOM IN ON ADVERSE YEAR (2022)

WELL REWARDED OVER LAST TEN YEARS



- **2022 Returns**
  - Unlevered Portfolio: -12.7%
  - Example: 25% Levered Portfolio: -17.4%
    - Difference: -4.7%
- **Portfolio Liquidity Needs**
  - Net Outflow to Pay Benefits: 5%
  - 6% Borrowing Costs on 25% of Portfolio: 1.5%
  - Margin on Levered Exposure: 4.7%
    - Total Liquidity Needs: 11.2%
- **Illiquid Assets in Portfolio as of December 31, 2022: ~40%**

→Need to liquidate almost 20% of remaining liquid assets (11.2% of 60%)

LIQUIDITY CRISIS? NO.
BUT A CHALLENGING LIQUIDITY DYNAMIC!

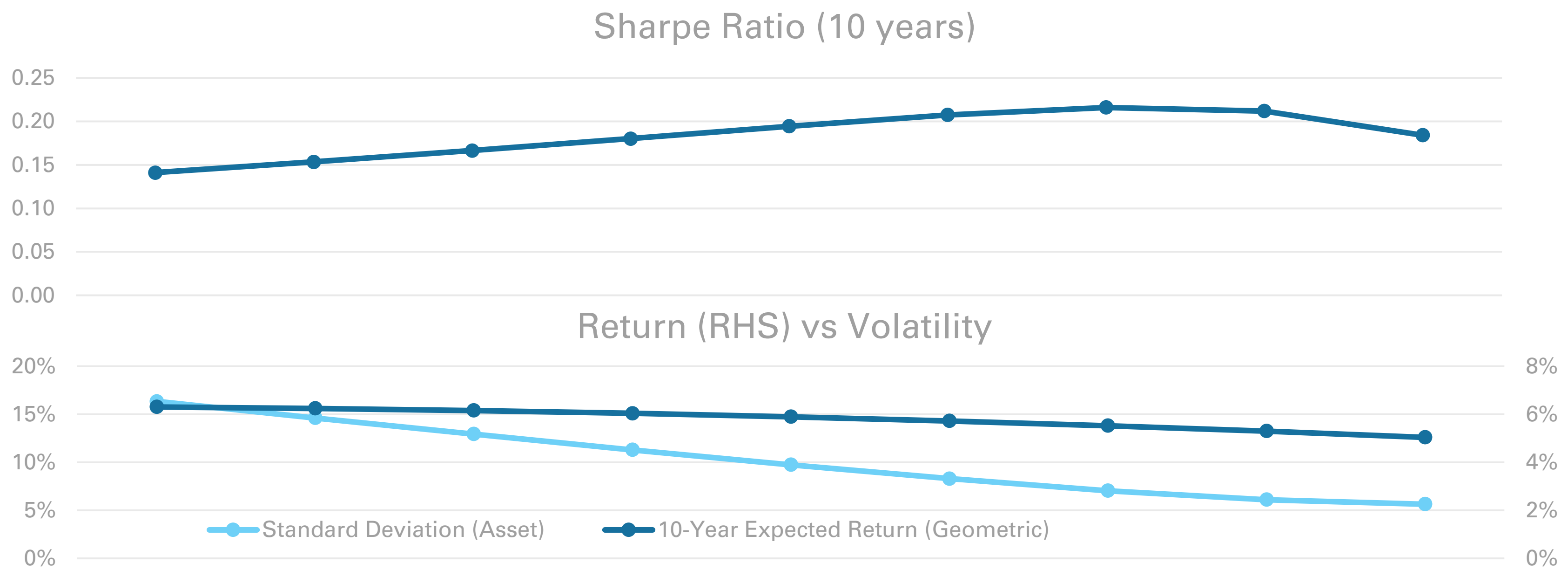
Details: Actual annual returns for large public pension for 2013-2022, assumed 2% borrowing costs for 2013-2021 and 6% borrowing costs for 2022

USING LEVERAGE TO IMPROVE RISK BALANCE

- **Previous example assumed an existing portfolio is levered up proportionally**
- **An alternative, and perhaps more appropriate approach would be to adjust the asset allocation**
- **Use the expanded investment opportunity to add under-represented exposures**
  - Perhaps reduce most concentrated exposures

BETTER RISK BALANCE = BETTER EFFICIENCY

Portfolio (Stocks/Bonds)	90/10	80/20	70/30	60/40	50/50	40/60	30/70	20/80	10/90



	60/40	10% Levered 60/40	40/60	10% Levered 40/60	25% Levered 40/60
Global Equity	60%	66%	40%	44%	50%
US Bonds	40%	44%	60%	66%	75%
Leverage/Financing	0%	-10%	0%	-10%	-25%

Expected Return 10 yrs	**6.0%**	**6.2%**	**5.7%**	**5.8%**	**6.0%**
Standard Dev	**11.3%**	**12.4%**	**8.3%**	**9.1%**	**10.3%**
Sharpe Ratio (10 years)	**0.18**	**0.18**	**0.21**	**0.20**	**0.19**

WAYS TO CREATE PORTFOLIO LEVERAGE

WITHIN INVESTMENT PRODUCTS

- Ex: Private Debt with one turn of leverage for 2x exposure
- Pros: Investment Manager handles all logistics/liquidity of leverage
- Cons: Less control/flexibility to adjust as needed

DERIVATIVES

- Ex: Index Futures or Swaps – either through investment manager or development of internal specialization
- Pros: Flexibility to control, adjust and specify exposures
- Cons: Requires development of internal risk management function

LINE OF CREDIT

- Ex: Negotiate borrowing capacity directly with bank
- Pros: Can investment capital directly instead of through proxies
- Cons: Must consider counterparty risk and renewal risk

PEER LARGE PENSIONS: USE OF LEVERAGE

- **Modest amounts of leverage used by several large US Public Pensions**
  - Examples:
    - San Francisco (3%)
    - Texas Teachers (4%)
    - CalPERS (5%)
    - State of Wisconsin Investment Board (15%)
    - Canada Pension Plan Investments (22%)
    - MOSERS (40%)

EMERGING TRENDS

Recalibrating Illiquidity

New Investing Regime

O Canada

Technology/AI

CONCLUSION

SUMMARY

- **US Public Pensions are healthier today than a decade ago**

- **Very challenging environment ahead**

- **Pensions built for sustainability have best chance at success**
  - Reasonable benefit structures
  - Healthy starting funding positions
  - Balanced need for contributions and investment return
  - Achievable investment objectives
  - Highly efficient investment programs
  - Access to expertise and skill to meet objectives and evolve

Virginia Retirement System

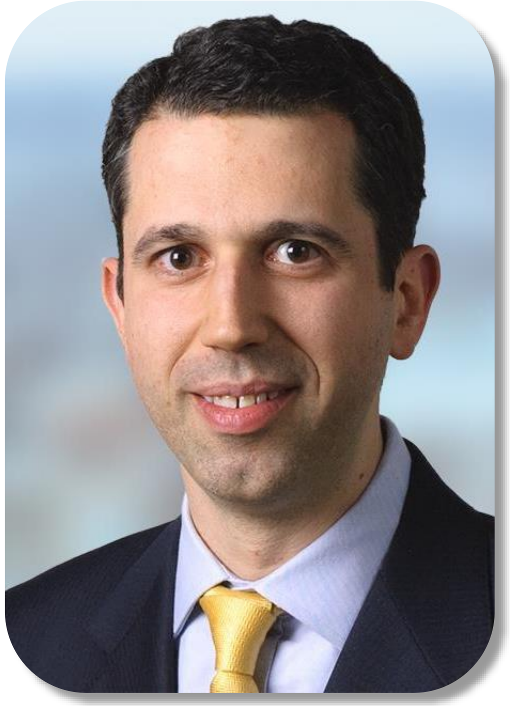
Notes

Guest Speaker:
Top of Mind Risks

Adam Berger
Asset Allocation Strategist
Wellington Management

Adam Berger ● Asset Allocation Strategist

Wellington Management



Adam leads Wellington's team of multi-asset strategists globally. The team's objective is to help our clients achieve better investment outcomes by providing them with relevant research, analysis, and advice. As a strategist, he focuses on US public pensions and other total-return-oriented investors. He develops research from an allocator's perspective, advises clients and prospects on a range of investment policy and governance issues, and serves as the portfolio manager for bespoke multi-manager investment solutions, helping to bring iStrat's team-based process to bear on a client's specific objectives and constraints.

Before joining the firm in 2012, Adam was the head of Portfolio Solutions at AQR Capital Management, where he delivered innovative research and ideas to existing and prospective investors and served on the Investment Committee of an early fund focused on alternative risk premia (2007 – 2012). Previously, at Goldman Sachs Asset Management (GSAM), he served as a research strategist in Global Investment Strategies and as chief of staff to the heads of GSAM. During his 11 years at Goldman Sachs (1995 – 2007), he also worked in the firm's Pension Services Group and Equities Division.

Adam earned his MBA, with honors, with a concentration in finance from the University of Pennsylvania (Wharton, 2002). He earned his AB in philosophy, magna cum laude, from Harvard College (1995). Additionally, he holds the Chartered Financial Analyst designation and is a member of the CFA Institute.

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Virginia Retirement System Board Presentation

22 March 2023

Agenda

Five risks for pension trustees to consider

Market structure crisis

Unanticipated liquidity risk

Geopolitical crisis

Structurally low asset class returns

Market regime shift – new rules for the next decade

Five risks for pension trustees to consider

My take-aways

Market structure crisis – keep an eye on “hot spots”; I see few today

Unanticipated liquidity risk – incorporate liquidity assessment into risk management

Geopolitical crisis – balance opportunities and risk; think more about evolutionary shifts

Structurally low asset class returns – consider incremental “stepping stones”

Market regime shift – position portfolio to “tilt” into a new regime; consider a glidepath

Market structure crisis

The risk

Another event like the 2008 Global Financial Crisis

Fundamental beliefs about the structure of global markets called into question

Investor confidence erodes

What to look for

Overconfidence/complacency (real estate in 2008, stocks in 1999)

Irrational (or irrelevant) valuations

Possible “hot spots” (I don’t see very many today)

Cryptocurrency

Private credit

Inflation [US dollar?]

A related risk

A series of disappointments that changes investors' perception of stocks

Market structure crisis

My view

Less of a risk today than at other points in the cycle

Fewer signs of excess

Inflation is the “wild card”

Unanticipated liquidity risk

The risk

Short-term liquidity demands exceed available liquidity

Private asset allocations force public asset exposures to an uncomfortably low level

UK LDI crisis in summer 2022 led many to ask “What’s next?

What to look for

Further weakness in public markets

Limited ability to rebalance into public assets at compelling valuations

Inability of private assets to rebound in line with public markets

Possible “hot spots”

Private equity – especially large buyout funds

Private credit

Private real estate

Unanticipated liquidity risk

My view

Not a front-burner risk for most institutions

Nonetheless, a reminder to assess liquidity risk apart from other risks

Total size of private market allocations remains a front-burner issue

Liquidity framework for 2023: Uses and sources

Traditional portfolio: Basic liquidity analysis

Sources	Allocation	% Liquid	Liquidity
Core fixed income	250	75	188
US equity	200	90	180
Non-USD Dev equity	150	75	113
EM equity	50	50	25
HY	25	25	6
EMD	25	25	6
Hedge funds	50	20	10
Private real estate	100	0	–
Private equity	150	0	–
Total	1,000		528

Uses	% needed	USD needed
Expected spending	5	50
Capital calls	2	15
Total	7	65

This is a Hypothetical portfolio to highlight an example liquidity framework with made up numbers for or illustrative purposes only. Liquidity assumptions are subjective and based on the author's estimate of potential liquidity in different asset classes. Uses of liquidity are also hypothetical and subjective. Liquidity uses assume outflows to support the asset owner's spending needs and capital calls consistent with their private equity commitment.

Geopolitical crisis

The risk(s)

Most complex, dangerous & unpredictable geopolitical environment in decades

US-China “strategic competition” the dominant theme in geopolitics for years to come

Climate change has major geopolitical implications (adaptation + mitigation)

Ongoing societal/economic disruption from AI and automation

What to look for

Market panic

Supply shocks

Global inflation

Possible “hot spots”

Russia/Ukraine

China/Taiwan

Middle East

Populism (anywhere)

Geopolitical crisis

My view

History suggests geopolitical crisis is often a buying opportunity

Institutions and boards should focus more on evolutionary change than crises

An active area of research for our team in 2023

Structurally low asset class returns

The risk(s)

An extended period of disappointing asset class returns

A challenging environment for institutional investors to achieve their return objectives

Investors forced to increase risk (at a time when it's not well-compensated) or seek other return sources

What to look for

Protracted bear market in stocks

Volatile interest rate backdrop

Changing valuation paradigm for equities

Possible "hot spots"

US equities

Global interest rates

Structurally low asset class returns

My view

Risk has substantially decreased since the end of 2021

"Hot spots" are worth watching: US equities and global bond markets

Little downside in preparing for a bad outcome – result may just be an increase in likelihood of achieving objectives

Structurally low asset class returns

A big change after 2022 results

	Intermediate (10 year) capital market assumption (%)	10 year realized returns through 2021 (%)	10 year realized returns through 31 Dec 2022 (%)
US Equity	6.5	16.6	12.6
Non-US Developed Equity	8.6	8.5	5.2
EM Equity	10.2	5.9	1.8
US Core Bonds	4.5	2.9	1.1
60/40 Portfolio	6.5	8.8	4.5
70/30 Portfolio	6.8	9.7	4.9

This reflects Wellington Management's Investment Strategy group's intermediate capital market assumptions as of December 2022 for various asset classes. Intermediate assumptions reflect a time period of approximately 10 years. They are expressed in annualized, geometric terms and use the US dollar as the base currency. This is for illustrative purposes only and the returns and other assumptions provided are hypothetical and not representative of an actual account or Wellington Management strategy. As the analysis relies upon assumptions and other expectations of future outcomes, it is subject to numerous limitations and biases including subjectivity. Data does not consider transaction costs, management fees, or other expenses associated with actual investing. Actual results may vary significantly and an investment can lose value. | Please review in conjunction with the "Important disclosures – Capital market assumptions" as source for indices used, specifically MSCI ACWI and Bloomberg US Aggregate | 60/40 is 60% Global Equity/40% US Core Bonds. 70/30 is 70% Global Equity/30% US Core Bonds.

Structurally low asset class returns

Ten stepping stones

1. Shop for value
2. Tilt broad equity exposure away from the US
3. Include defensive equities as a specific allocation
4. Lean less on passive equity strategies
5. Look beyond traditional" buyout" models in private equity
6. Take a more flexible approach to fixed income
7. Allocate to fixed income "complements"
8. Increase exposure to inflation-sensitive assets/strategies
9. Take advantage of opportunistic and thematic investments
10. Don't let asset class silos limit your opportunity set

Market regime shift: Different rules/expectations for the next decade

The risk(s)

Markets inflecting one regime to another

"Rules of thumb" from prior cycle will no longer hold

New portfolio tilts may be needed to maximize returns

What to look for

Breakdown of old relationships

Shifting focus of market attention

New exposures "breaking out" on the upside

Possible "hot spots"

Inflation

Volatility

Interest

"Growth" style

Market regime shift: Different rules/expectations for the next decade

My view

A key risk for investors and portfolios today

"Post-GFC" era was not going to last forever

Regimes moves slowly, but it's the right time to begin the discussion

Welcome to the inflection

Pivot points and portfolio positioning

Making sense of today's markets

A framework for understanding investment cycles

Investing for the next cycle

A framework for understanding investment cycles

What makes a cycle?

Distinct market leadership over a period of time (sector, region, theme)

Group of companies become the largest stocks in the world (Cisco, Exxon, Alphabet)

These stocks matter to portfolio managers

As the business cycle shifts, leadership changes

Five trades in a four-decade career

- Buy Japan in the early 1980s
- Switch from Japan to technology in late 1989
- Switch from technology to real assets in early 2000
- Switch from real assets to FANG and cryptocurrency in mid-2011
- Switch from FANG/crypto to energy in late 2021

Views expressed are those of the speaker. This is not intended to be a recommendation to buy or sell a specific security or investment advise.

A framework for understanding investment cycles

Key observations

1. Cycle leaders are unexpected/paradoxical
2. Initiated by structural changes that transform earnings growth in an area
3. Leadership tends to defy previous sector or “category” definitions
4. Structural changes are not hidden from view – people are talking
5. Initial investor reaction is that changes are transitory; psychology remains attached to prior cycle
6. Hard to get in – and, once invested, hard to stay in
7. Cycles last a really long time; shortest was 6 years; generation shift in PMs
8. Cycles always end – and they end when fundamentals look strong
9. Opportunities exist in every cycle, but they never last more than one cycle (companies vs stocks)
10. Successive cycles have a dialectical nature

Key take-away: Don’t assume you can find the next cycle winners, but be careful of exposure to previous winners

A framework for understanding investment cycles

What could be next?

Looking back (2010 – 2020)	Looking forward… (?)
Low inflation	Higher inflation
Slow, steady economic growth	Volatile business cycles
Low/falling interest rates	Higher/rising interest rates
Innovation wins/favor growth	Stability wins/favor value and income
Triumph of passive investing	Active management’s moment

Active portfolio management, including market timing, can subject longer term investors to potentially higher fees and can have a negative effect on the long-term performance due to the transaction costs of the short-term trading. In addition, there may be potential tax consequences from these strategies. Active portfolio management and market timing may be unsuitable for some investors depending on their specific investment objectives and financial position. Active portfolio management does not guarantee a profit or protect against a loss in a declining market.

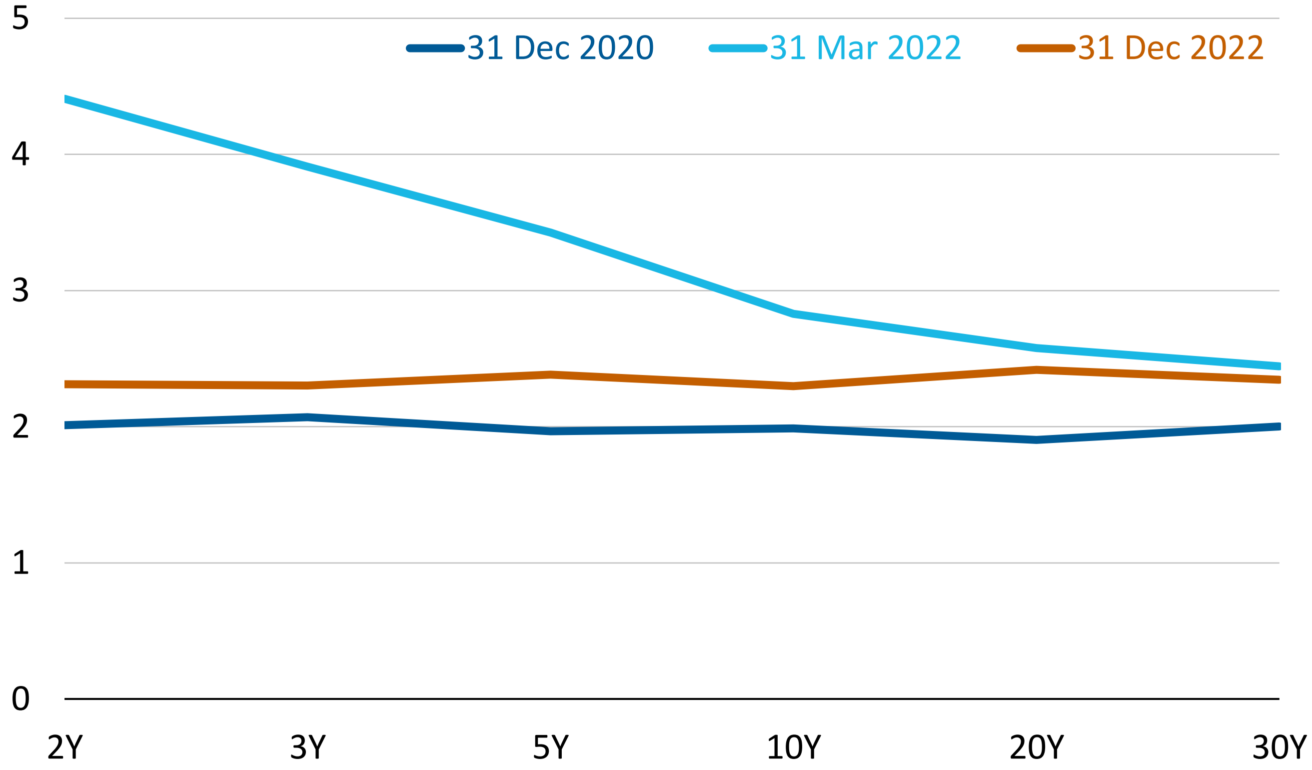
Inflation ahead?

Risks remain skewed to upside

Drivers of inflation risk

- End of global low-cost labor boom
- Rise of onshoring/reversal of globalization
- Expanding role of fiscal spending in economic policy
- Under-investment in commodity supply/ low-carbon transition

US breakeven curve (%)



Sources: Bloomberg, Wellington Management

Inflation ahead?

Investment framework needed

Responding to higher inflation

Direct investment in real assets

- Commodities
- Gold
- Diversified real asset portfolios

Tilts to more inflation-sensitive sectors

- Natural resource equities
- Other inflation-sensitive equities (e.g., listed infrastructure)
- Value vs growth
- Inflation-linked bonds

Portfolio construction considerations

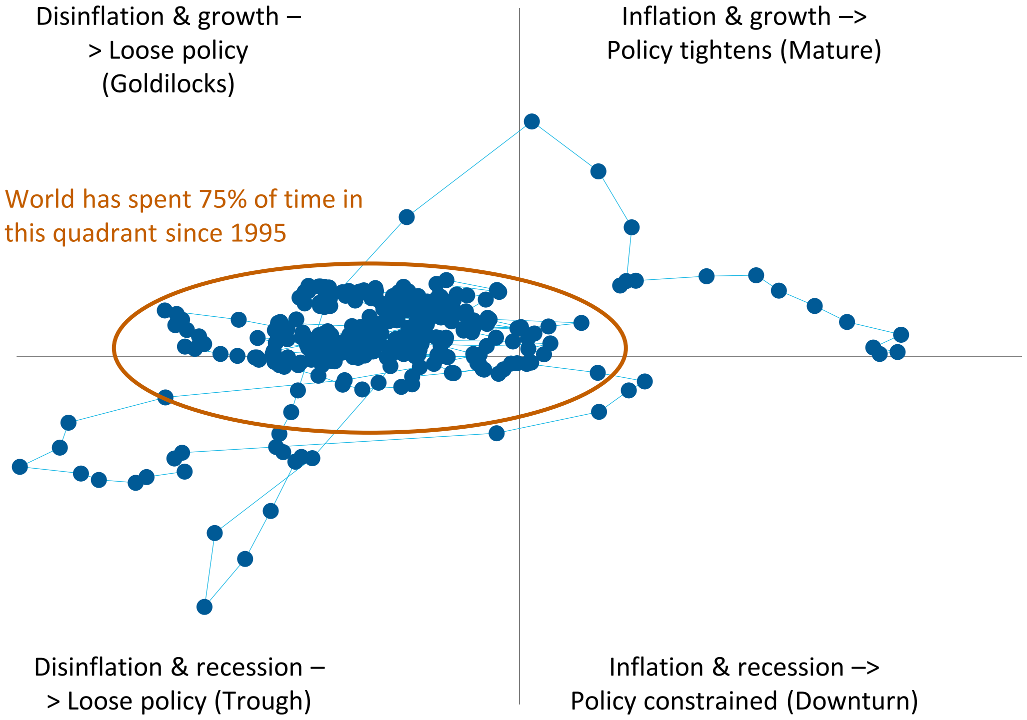
- Equity-bond correlation
- Portfolio beta to inflation

Investments in commodities may have greater volatility than investments in traditional securities, particularly if the instruments involve leverage. The value of commodity-linked derivative instruments may be affected by changes in overall market movements, commodity index volatility, changes in interest rates or factors affecting a particular industry or commodity, such as drought, floods, weather, livestock disease, embargoes, tariffs and international economic, political and regulatory developments. Use of leveraged commodity-linked derivatives creates an opportunity for increased return but, at the same time, creates the possibility for greater loss. | Neither Asset Allocation nor Diversification guarantee a profit or protect against a loss in a declining market. They are methods used to help manage investment risk.

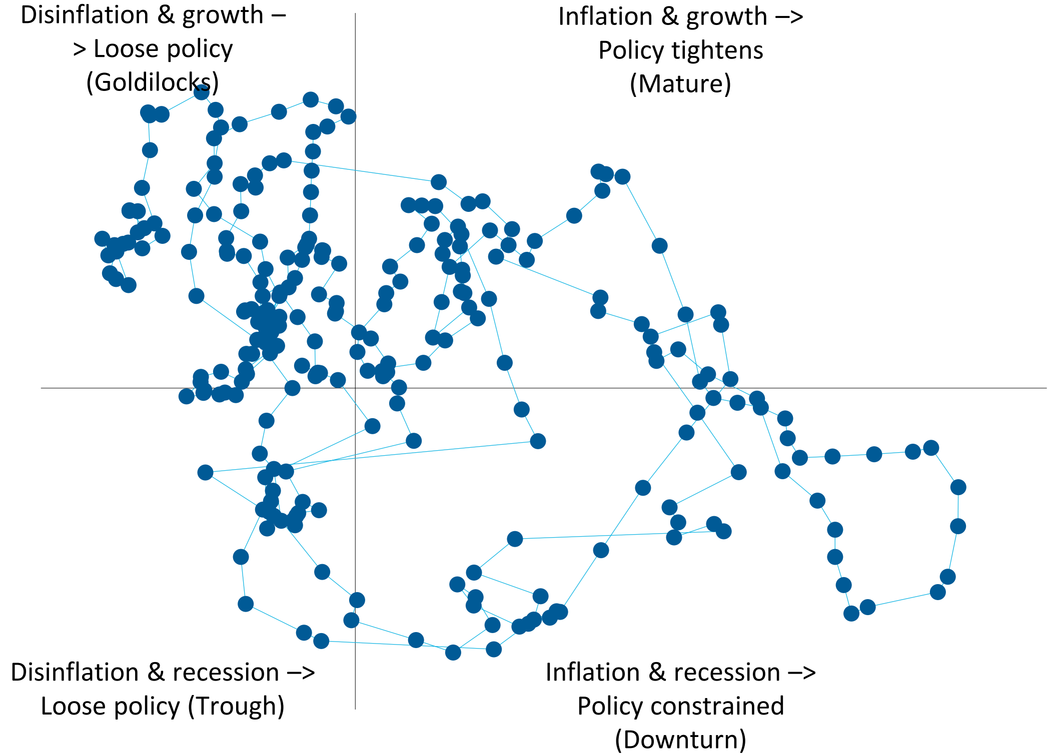
Volatility ahead?

A potential new regime for business cycles

Evolution of the global cycle: 1995 – current



Evolution of the global cycle: 1964 – 1985



Note: The chart reflects the evolution of the global cycle through the lens of growth and inflation. Each dot on the chart represents a quarter. Inflation is plotted on the x-axis and growth on the y-axis, which determines the position of each dot. Lines connect consecutive quarters.

Sources: Bloomberg, Refinitiv, Wellington Management | Chart data: January 1964 – August 2022

Volatility ahead?

Navigating bumpier roads

Prepare stakeholders – governance challenges ahead

Remain diversified – and stress test correlation assumptions

Seek "stability" in equities – as a complement to value and growth

Be opportunistic – markets may create more dislocations than in the recent past

Consider tactical asset allocation – let the "bumps" work to your advantage

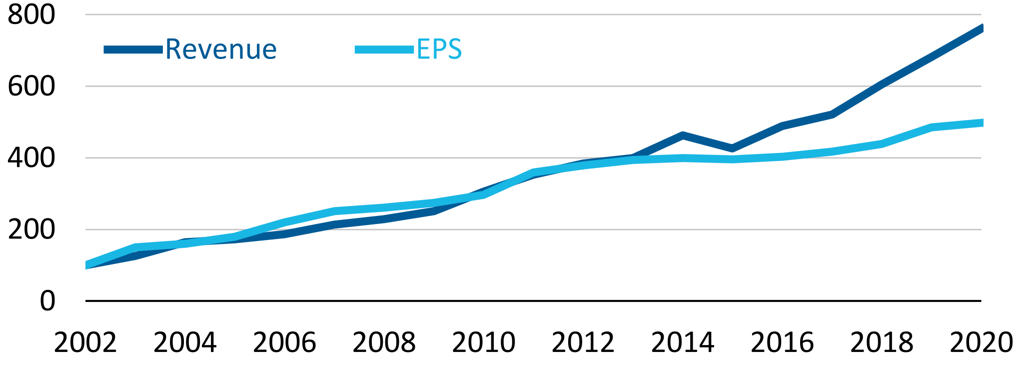
Consider hedging – bearing cost, benefit and your own risk tolerance in mind

Hedge Funds are unregistered private investment partnerships, funds or pools that may invest and trade in many different markets, strategies and instruments (including securities, non-securities and derivatives) and are NOT subject to the same regulatory requirements as mutual funds, including mutual fund requirements to provide certain periodic and standardized pricing and valuation information to investors. Hedge Funds represent speculative investments and involve a high degree of risk. An investor could lose all or a substantial portion of his/her investment. Investors must have the financial ability, sophistication/experience and willingness to bear the risks of an investment. For illustrative purposes only and not intended to be investment advice.

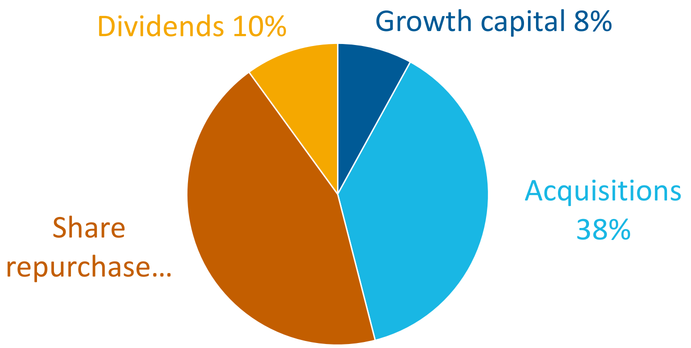
"Stability" equities: What makes a core compounder?

Illustrative example of historical value creation: Global beverage can producer

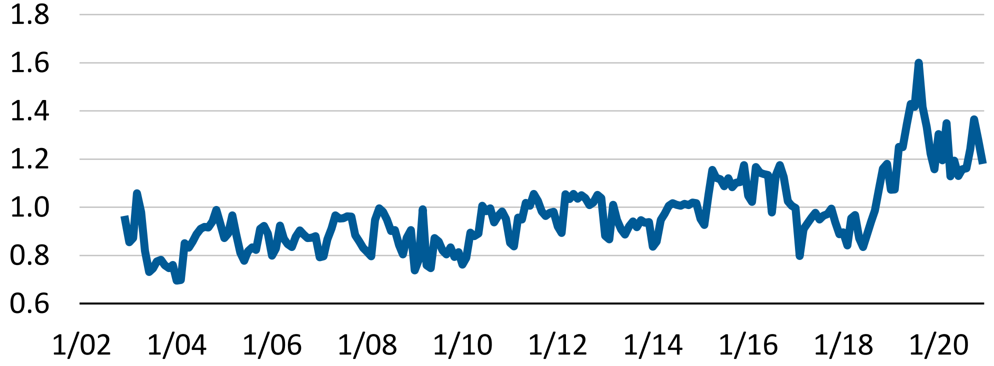
Revenue and EPS growth 2002 – 2020[1]



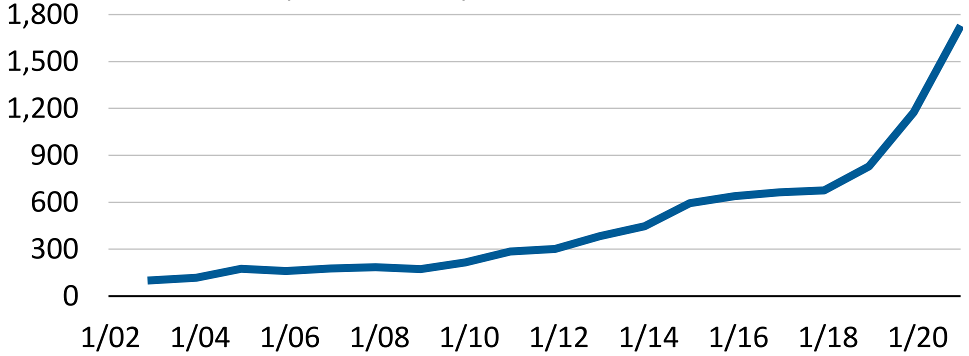
Capital allocation: 2007 – 2020



Relative FY2 P/E vs Russell 3000[1]



Total return (2002 index)[1]



[1]Chart data: January 2002 – December 2020 | The example shown is presented for illustrative purposes only and is not to be viewed as representative of actual holdings. It should not be assumed that any client is invested in the (or similar) example, nor should it be assumed that an investment in the example has been or will be profitable. Actual holdings will vary for each client and there is no guarantee that a particular client's account will hold the example presented. | PAST PERFORMANCE DOES NOT PREDICT FUTURE RETURNS. AN INVESTMENT CAN LOSE VALUE.

Higher rates ahead?

Investment backdrop could look very different

Inflation is a key risk

Greater fiscal spending could also contribute

Change in foreign demand is a third risk

Is a 40-year trend coming to an end?
US 10-year government bond yield (%)

Sources: OECD, St. Louis Fed | Chart data: January 1960 – December 2022

Higher rates ahead?

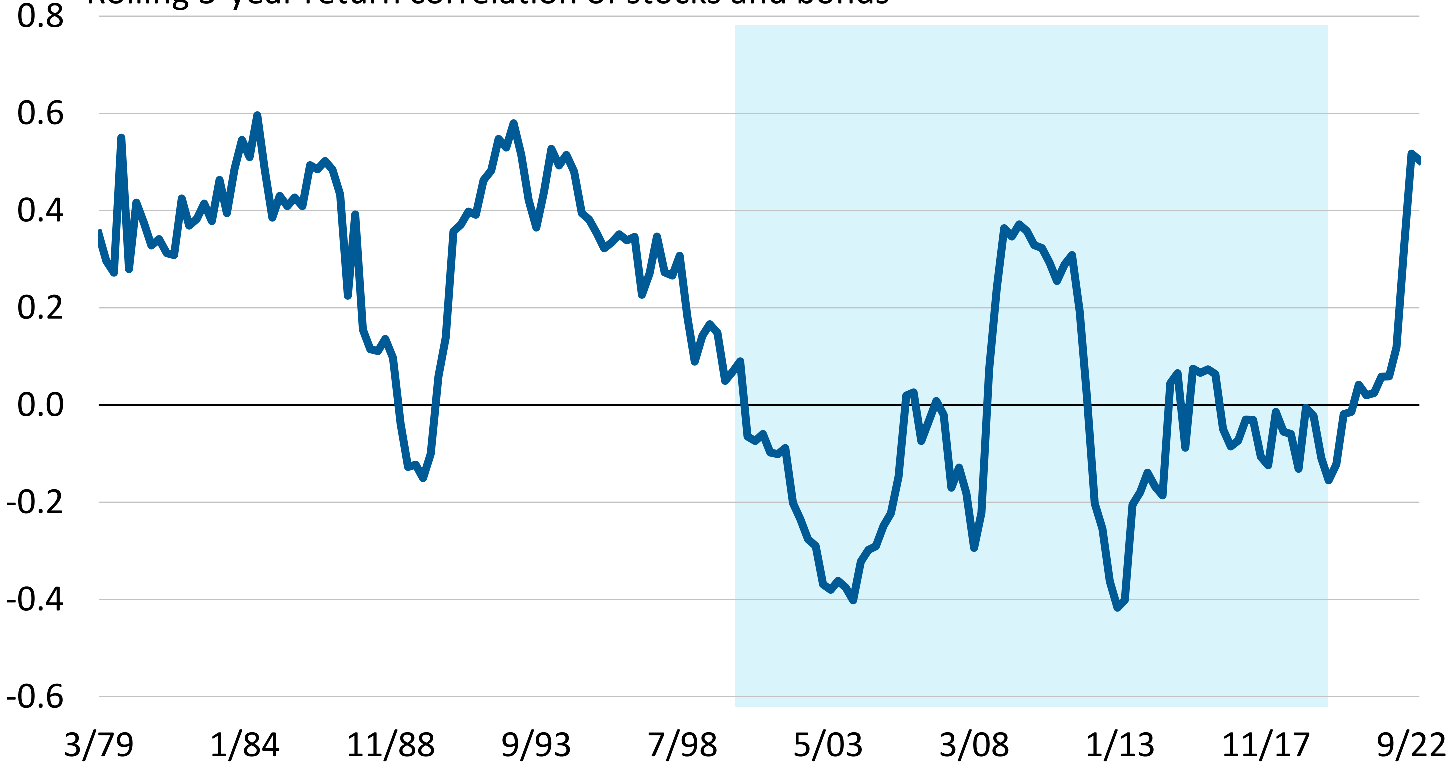
Implications and opportunities

Move to higher rates implies a headwind for duration in portfolios

But higher interest rates may offer more compelling forward-looking returns

Harder to count on bonds as diversifiers – performance in crises may not help

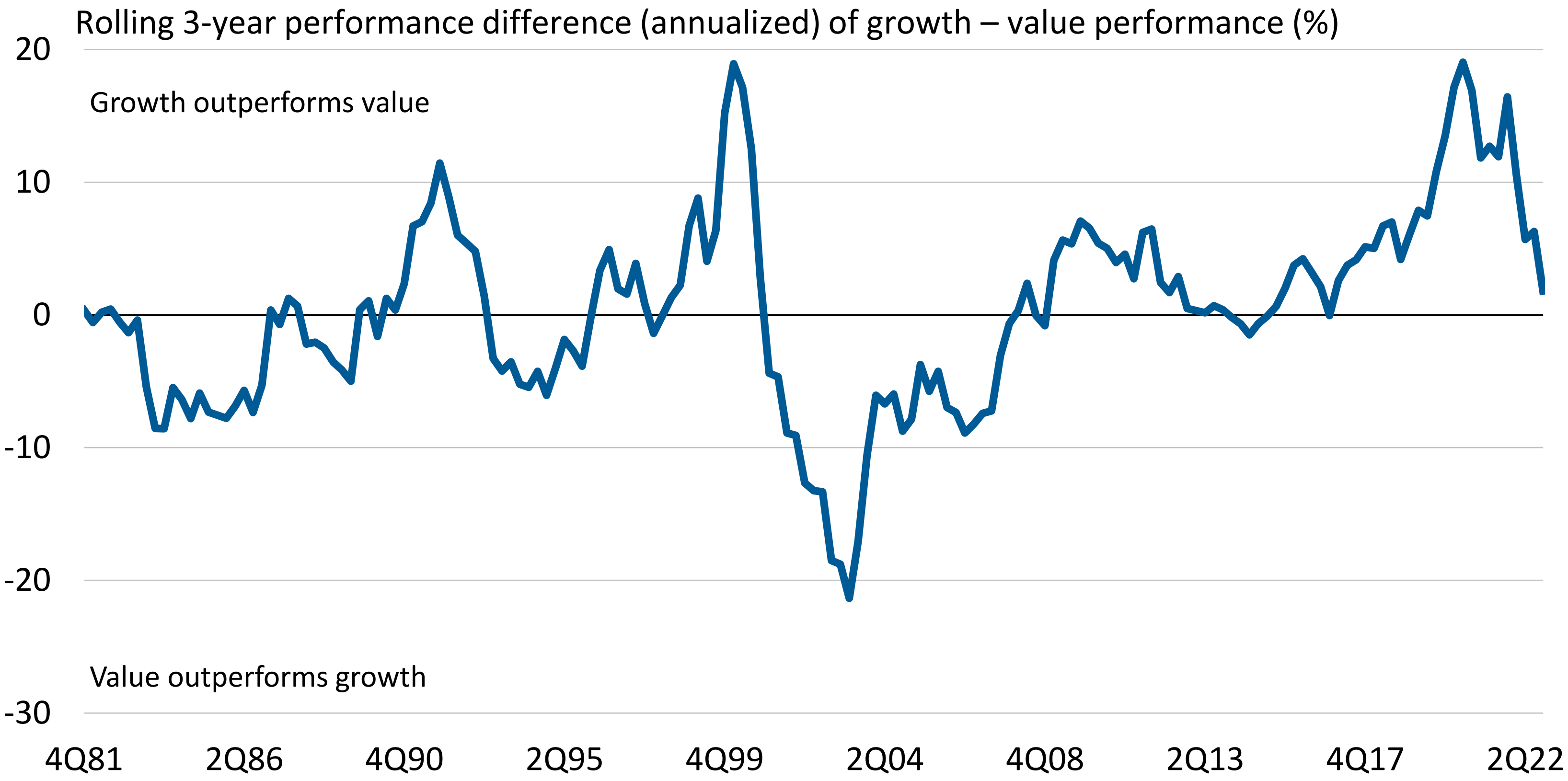
Stock-bond correlation have varied widely through time
Rolling 3-year return correlation of stocks and bonds



Sources: Refinitiv, Wellington Management | Note: Indexes used are MSCI World and Bloomberg Aggregate | The MSCI World Index is a free float adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets | The Bloomberg Barclays US Aggregate Bond Index, or the Agg, is a broad base, market capitalization-weighted bond market index representing intermediate term investment grade bonds traded in the United States. Investors frequently use the index as a stand-in for measuring the performance of the US bond market. | Chart data: March 1979 – December 2022

Pivot from growth ahead?

Historically, the cycle always turns



Sources: Refinitiv, Wellington Management | Note: Return difference calculated using Russell 1000 Growth and Russell 1000 Value indexes | The Russell 1000 Growth Index measures the performance of the large-cap growth segment of the U.S. equity universe. It includes those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values. | The Russell 1000 Value Index measures the performance of those Russell 1000® companies with lower price-to-book ratios and lower forecasted growth values | PAST RESULTS ARE NOT INDICATIVE OF FUTURE PERFORMANCE. | Chart data: 4Q81 – 4Q22

Pivot from growth ahead?

Investing under a new regime

Value

- Valuations matter again
- "Margin of safety" in volatile markets
- Value's sector mix more in favor

Income

- Cash flows offer a measure of certainty and stability
- Immediate cash flows more valuable in an inflationary world
- Consider both level and growth of dividends

Stability

- Additional line of defense in a volatile world
- Company fundamentals may hold up even if stocks falter
- Potential for compelling total return relative to broad markets

Growth

- A different growth paradigm for the next decade?
- Steady (and self-financing) versus speculative
- Thematic investing – broad (innovations, brands) and narrow (biotech, fintech)

Active management ahead?

Things to look for

Greater uncertainty

Macro

Geopolitical

Greater dispersion

Asset classes

Regions

Quality

More market volatility

More crises (market or political)

Less liquidity (especially from central banks)

More defaults/failures

Less stock-bond diversification

Active management ahead?

Five ideas for the playbook

Macro hedge funds

Growth fixed income

Emerging markets

Thematic investments

Opportunistic exposures

Investments in emerging markets may be more volatile and less liquid than investing in developed markets and may involve exposure to economic structures that are generally less diverse and mature and to political systems which have less stability than those of more developed countries.

Welcome to the inflection

Implementation ideas

Inflation ahead?

- Commodities
- Commodity-sensitive equities
- Diversified real assets

Pivot from growth ahead?

- Stability
- Growth
- Income

Volatility ahead?

- Stakeholder preparation
- “Stability” alongside value and growth
- Tactical asset allocation/hedging

Active management ahead?

- Macro hedge funds
- Emerging markets
- Thematic investments

Higher rates ahead?

- Less benchmark exposure
- Growth fixed income
- Diversifying hedge funds

Investments in commodities may have greater volatility than investments in traditional securities, particularly if the instruments involve leverage. The value of commodity-linked derivative instruments may be affected by changes in overall market movements, commodity index volatility, changes in interest rates or factors affecting a particular industry or commodity, such as drought, floods, weather, livestock disease, embargoes, tariffs and international economic, political and regulatory developments. Use of leveraged commodity-linked derivatives creates an opportunity for increased return but, at the same time, creates the possibility for greater loss.

Five risks for pension trustees to consider

My take-aways

Market structure crisis – keep an eye on “hot spots”; I see few today

Unanticipated liquidity risk – incorporate liquidity assessment into risk management

Geopolitical crisis – balance opportunities and risk; think more about evolutionary shifts

Structurally low asset class returns – consider incremental “stepping stones”

Market regime shift – position portfolio to “tilt” into a new regime; consider a glidepath

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Virginia Retirement System

Closing Remarks

Andrew Junkin

Chief Investment Officer

Virginia Retirement System

Notes