Pennsylvania Association of Public Employee Retirement Systems
PO Box 61543, Harrisburg, PA 17106-1543
Website: *www.pa-pers.org*

Summer 2019

In This Issue

Don't Miss Upcoming Conferences

13th Annual Fall Workshop

Nov. 20-21, 2019
(Wednesday-Thursday)
Wyndham Pittsburgh University Center

16th Annual PAPERS Forum

May 19-20, 2020
(Tuesday-Wednesday)
Hilton Hotel Downtown Harrisburg

Save the Dates for PAPERS' Fall Workshop

Pittsburgh Hosts PAPERS 13th Annual Fall Workshop

November 20-21, 2019
(Wednesday-Thursday)

The Wyndham Pittsburgh University Center Hotel
100 Lytton Avenue (Oakland Section), Pittsburgh, PA 15213

Pittsburgh's "Golden Triangle" at the confluence of the Allegheny, Monongahela and Ohio Rivers as viewed from the heights of nearby Mt. Washington.

PAPERS Pennsylvania Association of Public Employee Retirement Systems

Registration will begin in September, 2019. Watch for details closer that time.

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From the Desk of PAPERS' Executive Director

Welcome to the Summer 2019 edition of the PAPERS newsletter.

Thank you to everyone who took the time to attend the Forum in May at the Hilton in Harrisburg PA. Our attendance keeps growing and we noted an almost 13% increase in the number or participants over last year. Even more exciting the Forum was the venue for the kick off of our first New Trustee Workshop session. We received tremendous suggestions for this new session and were thrilled with the amount of interest generated for the new employee workshop. We will be tailoring the sessions to cover more basic information and introductory material. Thanks to everyone's feedback we're able to continue to adjust our program to meet the interest of everyone who attends.

Call for speakers: Several people have already expressed an interested in speaking or making a presentation during our workshop in November. If you are interested in doing a presentation, please let me know as soon as possible. Please indicate if your interest is in presenting during the regular conference schedule or if you are specifically interested in presenting a topic as part of the new trustee workshop. The new trustee workshop session must be an introductory level. Additionally, if you are presenting, all PowerPoint presentations need to be in larger font. If graphs are included, they need to be easy to reads. We continue to receive comments regarding the presentation that are difficult to read from the back of the room. Feedback we received was all good and excellent with the exception of the font size. Thanks to everyone's input, we are able to constantly improve our educational programs. As we get more details on the November Workshop, we will send them out but in the meantime Save the Date NOVEMBER 19-20 in Pittsburgh and enjoy your summer. Thank you for all you do in the public pension arena.

Warmly,

Karen Deklinski

PAPERS Executive Director
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Become a Certified PA Public Retirement Plan Professional

Is your PA retirement system meeting its obligations to employees and their families? If you're in a decision-making role on behalf of your PA retirement system plan, it's your legal responsibility to ensure that decisions are being made in the best interests of plan participants and beneficiaries. What's more, as a fiduciary you may be personally liable for the decisions made by the plan. With increasing news headlines and legal and regulatory pressure on public retirement plans, now is the time for comprehensive fiduciary education. With that in mind, the **Certified PA Public Retirement Plan Professional** program offered by PAPERS is an ideal way to better understand your fiduciary role and how to carry out fiduciary responsibilities

Benefits to you

- **U**nderstand your important role and responsibility as a plan fiduciary
- **D**iscover strategies for implementing an effective and prudent fiduciary decision-making process
- **L**earn how to select and work with qualified advisors, consultants and service providers
- **A**pply best practices for managing and overseeing your retirement system
- **R**eceive updates on PA retirement system legal and regulatory changes

What is the Certified PA Public Retirement Plan Professional program?

The certification program provides participants with exposure to a diverse and comprehensive curriculum of fiduciary and plan management topics in a three-part process:

1. Complete an on-line introductory fiduciary process course developed by Fi360, Inc. and customized for PA Retirement Systems.
   a. *The Role of the Retirement Plan Fiduciary*
   b. *Creating a Comprehensive Fiduciary Process – Parts 1 & 2*
2. Attend program sessions at PAPERS conferences focused on regulatory updates, plan management best practices and service provider due diligence.
3. Meet continuing education (CE) requirements with additional on-line education modules and content library resources.

Make a difference!

Become a Certified PA Public Retirement Plan Professional.
See Page 4 for the application form.

More details available at: ***http://www.pa-pers.org/newweb/cert.html***

Application Form

Certified Pennsylvania Public Retirement Plan Professional

Participant Information:

Name: ____ Date: ______________

(Please **print** your name the way you would like it on your final certification)

Organization: ____

Address: ____

City: ______________________________________ State: _________ Zip: ____________

Telephone: _______________________ E-Mail: __________________________________

Payment Information:

The one-time registration fee is $499. Please fill out the following only if different than above:

Billing Name: ____

Billing Address: ____

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Payment methods:

1. ***To pay by check.*** Please make check payable to: **PAPERS** and return with this application to: **PAPERS, P.O. Box 61543, Harrisburg, PA 17106-1543**
2. ***To pay by credit card or PayPal.*** *(this function available after 6/1/2018)* Please access the PAPERS website www.pa-pers.org and click on "Certification Program". Near the bottom of this page click on the drop down box and follow the directions to pay the registration fee. If a completed application has not already been submitted, please do so either by mail to: ***PAPERS, PO Box 61543, Harrisburg, PA 17106-1543*** or scanned, saved and e-mailed to: ***douglas.b@verizon.net***.
3. ***To pay by ACH transfer.*** Please contact PAPERS by e-mail douglas.b@verizon.net to request the bank account and routing information you'll need to pay by this method. If you require a signed form to initiate the ACH transaction, please send the form to this e-mail address and it will be completed/returned promptly. Then, submit your completed membership application as note in #2 above so it can be matched with the ACH payment.

Please submit this completed application and payment to:

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Cryptocurrencies, Custody and Third-Party Access

BY: Tom Casteleyn, BNY Mellon

Tom Casteleyn is Global Head of Custody Product Management and has oversight of BNY Mellon's response to Target2 Securities. He is a member of the BNY Mellon EMEA Operating Committee and is based in Brussels. Prior to being appointed to his current role, Tom was the Regional Executive for Benelux and France in Global Client Management. He was responsible for a team of country and client executives who managed and developed enterprise-wide client relationships. Tom joined BNY Mellon in 2004 and has over 25 years' experience in the banking and securities services industry. Prior to joining BNY Mellon, Tom was with Capco, a financial markets consultancy, where he was a Principal Consultant in their market infrastructure and operations practice. Tom holds a Master's degree in International History from the London School of Economics and a Master's degree in Applied Economics from UFSIA, the University of Antwerp.

Ensuring the safekeeping of private keys and crypto-addresses is essential to institutional investors, though uncertainty surrounding the regulatory framework and the lack of safe, qualified custody are significant barriers preventing them from joining the crypto market in greater numbers.

The lack of certainty regarding national regulators' treatment of digital assets is often cited as the main reason for the cautious approach of asset managers towards digital assets. However, the reality is that, apart from the uncertainty surrounding the regulatory framework, it seems that the lack of safe, qualified custody is also a significant barrier preventing institutional investors from joining the crypto market in greater numbers.

What's really at stake is ensuring the safekeeping of private keys and crypto-addresses while allowing third-party access to pertinent information stored on the wallet to provide relevant services, such as, asset servicing, delivery versus payment, audit, fund administration, etc.

Securing digital assets on the Internet is a much more far-reaching issue than just capital markets operation. The skyrocketing growth of cybercrimes is pushing this matter to the forefront of concerns. In 2017 in the US alone, 1,579 data breaches were recorded—a 50% growth compared to the previous year. Given this, a major strategic challenge for every firm across the world is ensuring the security of their data, which has become one of their key assets.

In the digital asset world, custody is often used in the sense of safekeeping, without including the additional services that custodians provide to clients. Given the sensitivity and importance of the crypto wallet private key and the numerous reported hacks and thefts of coins, this aspect of the value chain is of great strategic importance to the development of the industry.

Not surprisingly the market has been dominated by crypto-asset specialists and Fintechs, that obviously had a first mover advantage. However, this is likely to change, and traditional players, such as Fidelity which announced the launch of a crypto-custody service for March 2019, are likely to enter the space sooner than later.

The challenges in the custody of digital assets are not only the concerns around the security of the private key and transaction addresses, but also how to allow third parties, such as regulators and fund administrators, to receive the pertinent information without compromising the safety of assets.

In the traditional capital markets infrastructure, transactions are conducted through an exchange of messages that updates relevant ledgers at banks, CSDs, and so on. In the digital world, it's either the asset itself or the contract right to demand delivery of an off-blockchain asset represented by the token that is transferred over the network. But it's important to acknowledge that the token itself is nothing more than just a data storage space and a line of code. Hence, if compact enough to be included within the token storage capability, any data could be represented. The digital asset infrastructure allows the transfer of any type of asset over Internet Protocol. In our hyper-connected society, in which future business models of firms are reliant on their ability to collect, analyze and enrich data, digital assets could be the instruments that are most suited to respond to future market needs.

Best Practices for Data Security

BY: Peter Chenoweth, LRS Retirement Solutions

Peter Chenoweth is a Microsoft Certified Solutions Expert for Data Platform, Database Administrator, and Information Security Officer for LRS Retirement Solutions. He helps provide data solutions and support for all project teams throughout the LRS Retirement Solution business unite to help ensure reliable, efficient, and secure data experiences for all PensionGold® customers.

For many governmental entities, it's an unfortunate fact that most of the money spent on IT security occurs after a data breach, network hack, or other preventable event. For software with a database that contains your employee or retiree Personally Identifiable Information (PII) data security is paramount. Implementing a comprehensive data security plan can be a significant undertaking, but there are few relatively inexpensive and effective strategies local government offices can take to shore up their first line of defense.

Develop clear staff policies regarding security procedures, both in terms of system access and in behavioral expectations. For system access, follow "least-access" principles; only give users rights to the data they need. For behavioral expectations, make sure your users understand the role they play in your organization's security. Several high-profile cases involving "cryptolocker" or "ramsonware" attacks have recently been in the news. These attacks involve malicious programs which encrypt documents and data within your network rendering the items unreadable. The most common way these malicious programs are introduced into an organization is via email, where an unsuspecting user clicks a link that appeared to be from a legitimate colleague. A common exercise to help identify this risk involves your IT staff sending "test" emails to everyone within the agency to find out if any users will click an unknown link. If a person does open a link, notifications are logged to the IT team who can then follow up and offer corrective guidance.

Always ensure your hardware and software is updated regularly. Whether your data is hosted in the cloud or on premises, make sure there are processes in place for maintaining and applying updates on a regular basis. Do not use deprecated commodity operating or database systems. For example, SQL Server 2008R2 has recently become deprecated. Is your organization still using it? If so, strongly consider upgrading! Unpatched or unsupported systems combined with unencrypted communications are at high risk for data breaches, especially when exposed to the internet. Ensure that any vendor you work with is taking advantage of industry-standard security features such as TLS for encryption of network traffic or TDE for database encryption.

Once you have established security procedures for your organization, it is often beneficial to have a third party review these procedures. As a software vendor, we hire a different firm every 1-2 years to conduct extensive testing on our software and database. While that offers a level of security and ease of mind for our customers, we always encourage them to perform their own testing within their environment. A vendor that objects to having a security audit or intrusion testing performed is an immediate red flag that there may be issues with the software. Unless there is specific contract language on the topic, there is no obligation to contact a vendor about security testing your agency intends to perform.

And finally, great policies and an effective implementation will minimize risk; however, you need to be sure to incorporate security training into your onboarding process. In addition to the onboarding, retraining should occur regularly to ensure your staff's awareness of the security policies are maintained.
Even with all the policies and training, there is always a possibility that some unknown vulnerability will expose your data. Data breaches are unexpected and stressful, so it is important to develop a response plan before such an event occurs. This provides enough time for planning and coordination among the stakeholders of your organization who would play a role in such an event: management, IT, public relations, legal, and so forth.

Survive and Thrive:

Robustness, Flexibility and Opportunism in Late-Cycle Investing

Submitted by: Neuberger Berman

Authors
Joseph V. Amato, *President and Chief Investment Officer—Equities*
Erik L. Knutzen, *CFA, CAIA, Chief Investment Officer—Multi-Asset Class*
Brad Tank, *Chief Investment Officer—Fixed Income*

The following is a summary of a longer research document that may be found under the "Library" tab on the PAPERS website at:

http://www.pa-pers.org/newweb/documents/Survive%20and%20Thrive%20-%20Robustness,%20Flexibility%20and%20Opportunities%20in%20Late-Cycle%20Investing%20-%20Neuberger%20Berman%20.pdf

Overview

Market participants are beginning to think about when and how the current, exceptionally long business cycle will end. We think that the late stages of any business cycle present investors with a challenge. However, the way we believe this particular cycle is likely to mature could make it uniquely difficult. In this white paper (summary below), we try to map the economic and market landscape of the coming years, and describe four principles that may help investors survive and thrive as they work their way through it.

The Four Principles

1. Distinguish Signals from Noise

How can investors tell when late-cycle is turning over into end-cycle? There are two places to look: at data coming from the real economy; and at indicators from financial markets.

- In QE-distorted, illiquid markets, price-based economic indicators are compromised
- Fundamental economic indicators are mostly green lights
- Corporate leverage may be a yellow light
- China bears close scrutiny

2. Re-Assess Strategic Asset Allocation

The fundamental late-cycle investing challenge is to maintain exposure to growth potential without losing control of overall portfolio risk. Using equity rallies to rotate into government bonds, which have tended to enter the late stage of a cycle with high yields, is unlikely to work this time around.

- Low bond yields require investors to re-think diversification
- Diversifying genuinely, not cosmetically
- Diversifying across regions and investment styles
- Diversifying onto less crowded paths

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Survive and Thrive *(continued from Page 7)*

3. Identify Through-Cycle Themes

One way of dealing with cyclical investment challenges is to look for investments whose performance is not primarily determined by the business cycle, or whose dynamics supersede or "look through" that cycle.

- Emerging markets are navigating their own mega-cycles
- Thematic investments can deliver idiosyncratic risk and resilient earnings growth

4. Be Prepared to Provide Market Liquidity

The next downturn will be the first since the financial crisis of 2008 – 09. That is significant, because a post-crisis wave of regulation has left the structure of the financial market very different than it was going into previous recessions. Illiquidity poses risks, but may also generate opportunity.

- Market liquidity has diminished
- Maintaining a liquid portfolio component and a bias toward high cash-flow strategies
- With nimble opportunism, liquidity providers may be able to benefit from volatile and gapping markets

In our view, these four principles can serve as a helpful guide through the late stage of any cycle—but they may be especially important during the turn in this highly unusual one. We think they encapsulate some of the best ways to survive in the event of a worse-than-expected outcome, while also providing the ability to thrive on the combination of fractured liquidity, volatility and shallow underlying growth that are likely to characterize the next downturn.

To read more about the four principles, visit: https://www.nb.com/pages/public/global/late-cycle-investing-survive-thrive.aspx

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Bad Investment Habits Can Be Detrimental To Your Plan's Financial Health

By: Christopher McDonough, Investment Performance Services, LLC

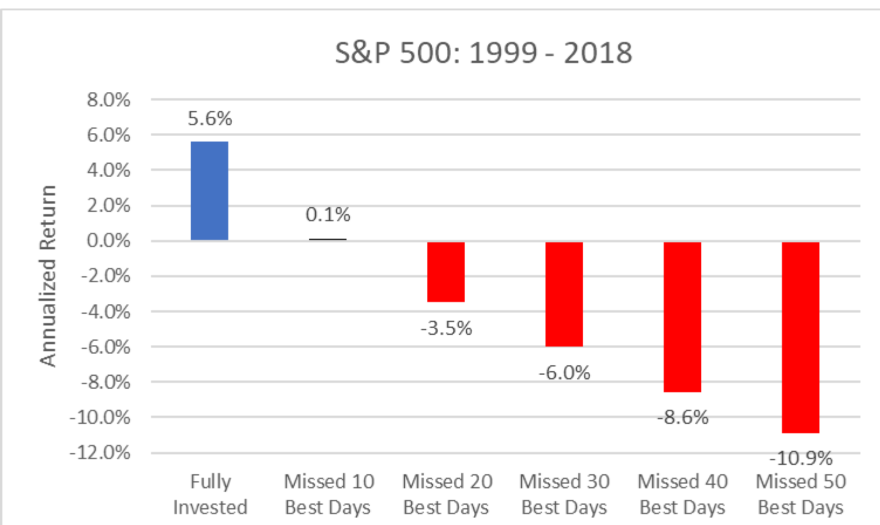
Avoiding bad habits is an important part of life. An unhealthy diet, lack of exercise, and not getting enough sleep can negatively impact your well-being. Similarly, bad investment habits can negatively impact your plan's investment returns.

Allowing human emotion to interfere in the investment process

One of the most common pieces of investment advice is "buy low, sell high." However, when we allow emotion to impact investment decisions, we are more likely to "sell low and buy high". Markets can experience periods of decline, which can be painful for investors. For example, while the S&P 500 produced a positive return in approximately 75% of calendar years since 1980, the average intra-year decline for the index during this period was -13.9%. Investors that maintain a long-term outlook supported by a robust investment policy are more likely to avoid making emotional decisions and have been rewarded with strong cumulative (+6,512%) and annualized (+11.4%) returns since 1980 despite periods of steep negative returns.

Attempting to time the market

Given the frequency and magnitude of declines in equity markets, investors might be tempted to seek to avoid those declines by shifting portfolio allocations in advance of anticipated negative events. In reality, market timing strategies rarely work, and these strategies can have a significant adverse impact on an investor's portfolio. Over the last 20 years, the S&P 500 has produced an annualized return of 5.6%. If an investor missed just the ten best days over the last 20 years (just 0.2% of all trading days), most of the positive performance would have been eliminated. Missing the 20 best days would have resulted in a *negative* return. Investors are better served by remaining invested with a diversified asset allocation designed to meet their objectives over the long term.



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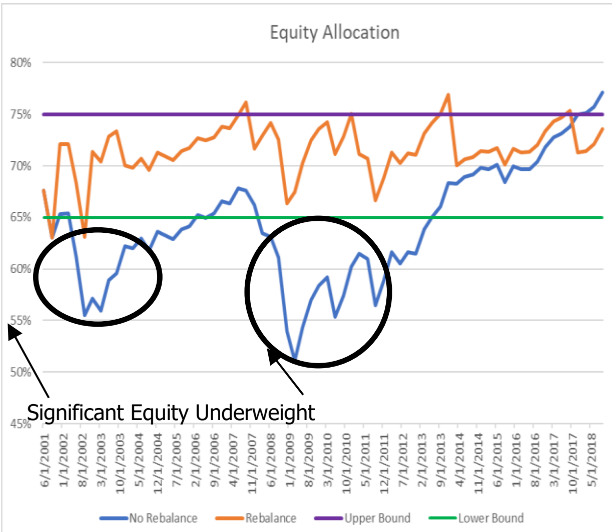
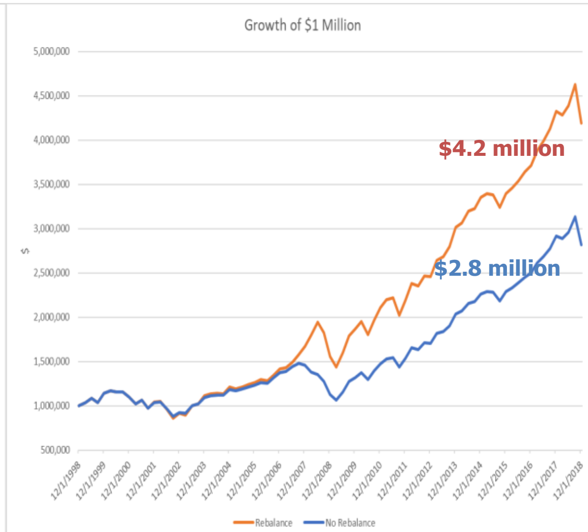
Bad Investment Habits *(continued from Page 9)*

Failing to rebalance

As market returns fluctuate, portfolio allocations are likely to deviate from approved target allocations. These deviations can become significant over time and, if not proactively addressed, can be a drag on portfolio returns. A simple portfolio with a beginning allocation of 70% public equities and 30% fixed income would have produced an annualized return of 5.3% over the last 20 years if it were not rebalanced. However, if the portfolio had been rebalanced back to target when the allocations deviated by more than 5% from the target allocation, the return would have increased to 7.4% over the same period. A robust rebalancing strategy allows investors to take advantage of market volatility and removes emotion from the decision-making process. It also forces investors to “buy low and sell high.”





Churning investment managers

Most plan sponsors would gladly hire an investment manager if they knew that manager would be a top quartile performer over the next ten years. However, it is common for all investment managers to experience periods of underperformance, even if their long-term track record is strong. For example, 74% of the large cap equity managers in the top quartile for 10-year returns have had at least 1 year in the bottom quartile. For U.S. small cap managers, it increases to 89%. A plan sponsor who terminates a manager after a relatively short period of poor performance is unlikely to reap the benefits of their long-term strong performance. In addition, transitioning from one manager to another can cost as much as 1% of assets due to trading costs. When evaluating investment managers, it is important to analyze their performance over multiple timeframes with a particular focus on long-term performance.

It is important for investors to develop and maintain good habits. Investors who have and follow a clear investment policy, remain invested, and focus on long term performance will be well positioned to achieve their objectives.

ABOUT THE AUTHOR: **Christopher McDonough** *is the Chief Investment Officer and a Senior Consultant at Investment Performance Services, LLC and is responsible for developing and implementing investment policy for the firm. In addition, he works on all aspects of client funds including investment policy formulation, asset allocation strategies, performance monitoring, and manager searches. He serves as Chairman of the IPS Investment Committee and a frequent speaker at educational conferences.*

Prior to joining IPS in 2018, Mr. McDonough was the Director of the Division of Investment for the State of New Jersey and Chief Investment Officer for the approximately $79 billion New Jersey Public Employees Retirement System. Prior to New Jersey, Mr. McDonough spent ten years with the City of Philadelphia Public Employees Retirement System where he was Chief Investment Officer of the defined benefit plan and the deferred compensation plan with combined assets in excess of $4.5 billion.

Small Cap Equities and the Case for Core

Submitted by:

Palisade Capital Management

Authors

Dennison T. Veru – Chief Investment Officer & Co-Chairman

Frank Galdi – Managing Director, Chief Risk Officer and Head of Corporate Development

Amrita Thapa, CFA – Vice President, Risk Management and Product Development

The following is a summary of a longer research document that may be found under the "Library" tab on the PAPERS website at:

http://www.pa-pers.org/newweb/documents/Small%20Cap%20Equities%20and%20the%20Case%20for%20Core%20-%20Palisade%20Capital%20Management.pdf

In our latest white paper, Palisade makes the case for active small cap core. According to our analysis, institutional investors may be subjecting their portfolios to both industry concentration and volatile changes in exposures by committing to a growth- or value-style small cap equity strategy. Growth or value investors may be unaware of the potential hazards posed by their choice of style and, as a result, could be at risk from unintended and fluctuating industry concentrations. By combining the benefits of growth and value investing, along with the diversification and alpha potential of actively investing in smaller companies, Palisade believes active small cap core equity strategies represent the potential best of the small cap universe. Please see attached link for why we believe small cap core strategies offer a compelling solution for investors.

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- **Affiliate** ($500/year) - *Corporate providers of other services, exclusive of legal and investment services, to pension funds.*
- **Sustaining** ($75/year) - *Individual membership open only to those persons with an interest in public pensions but not affiliated with an organization which qualifies for group membership in any other category above*

A current (2019) PAPERS membership (Participating, Associate, Affiliate or Sustaining) is required to attend PAPERS Spring Forum and/or Fall Workshop conferences, to receive CPE (Continuing Professional Education) credits or to enroll in the new certification program.

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Douglas A. Bonsall
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