

REBECCA M. GUNNLAUGSSON, PH. D
CHAIR

RONALD P. WILDER, PH. D
VICE-CHAIR

PEGGY G. BOYKIN, CPA
COMMISSIONER

ALLEN R. GILLESPIE, CFA
COMMISSIONER

WILLIAM (BILL) J. CONDON, JD, MA, CPA
COMMISSIONER

WILLIAM (BILL) H. HANCOCK, CPA
COMMISSIONER

EDWARD N. GIOBBE, MBA
COMMISSIONER

RETIREMENT SYSTEM INVESTMENT COMMISSION

REYNOLDS WILLIAMS, JD, CFP
COMMISSIONER



Commission Meeting Agenda

Thursday, June 14 – Friday, June 15, 2018

RSIC Presentation Center

Meeting to Convene Thursday, June 14, 2018 at 9:30 a.m.

- I. Call to Order and Consent Agenda
 - A. Adoption of Proposed Agenda
 - B. Approval of April and May Minutes
- II. Chair's Report
 - A. Retiree Representative Election
 - B. Chair and Vice-Chair Elections
- III. Audit & Enterprise Risk Management Committee Report
- IV. CEO Report
 - A. SIOP Recommendations/Updates
 - B. Communications Plan
- V. CIO Report
 - A. April Investment Performance Update and Review
- VI. Consultant Report
 - A. Asset Allocation/Benchmark Revisions
- VII. Investment Recommendations
 - A. Infrastructure – Macquarie Super Core Fund
- VIII. Delegated Investment Report
 - A. Industry Ventures Partners Holding V
 - B. Providence Strategic Growth Fund

NOTICE OF PUBLIC MEETING

This notice is given to meet the requirements of the S.C. Freedom of Information Act and the Americans with Disabilities Act. Furthermore, this facility is accessible to individuals with disabilities, and special accommodations will be provided if requested in advance.

- IX. Executive Session – To discuss investment matters pursuant to S.C. Code Sections 9-16-80 and 9-16-320; to discuss personnel matters pursuant to S. C. Code Section 30-4-70(a)(1); and receive advice from legal counsel pursuant to S.C. Code Section 30-4-70(a)(2).
- X. Potential Action Resulting from Executive Session
- XI. Recess

Meeting to Reconvene Friday, June 15, 2018 at 9:00 a.m.

- I. Call to Order
- II. Global Public Markets Discussion
 - A. Aberdeen Standard Investments - Guy Stern, Global Head of Multi-Asset and Macro Investing
 - B. PineBridge Investments - Mike Kelly, CIO, Global Head of Multi-Asset
 - C. Morgan Stanley Investment Management - Mark Bavoso, Senior Portfolio Manager, Global Multi-Asset
- III. Private Market Update - Barry Blattman, Vice-Chairman, Brookfield Asset Management
- IV. Adjournment

**South Carolina Retirement System Investment Commission
Meeting Minutes**

**April 12, 2018 9:30 a.m.
Capitol Center
1201 Main Street, 15th Floor
Columbia, South Carolina 29201
Meeting Location: Presentation Center**

Commissioners Present:

Dr. Rebecca Gunnlaugsson, Chair
Dr. Ronald Wilder, Vice Chair
Ms. Peggy Boykin, PEBA Executive Director
Mr. Allen Gillespie
Mr. Edward Giobbe
Mr. Reynolds Williams (via telephone)
Mr. William H. Hancock
Mr. William J. Condon

I. CALL TO ORDER AND CONSENT AGENDA

Chair Rebecca Gunnlaugsson called the meeting of the South Carolina Retirement System Investment Commission (“Commission”) to order at 9:30 a.m. Mr. Allen Gillespie made a motion to approve the proposed agenda as presented. Dr. Ronald Wilder seconded the motion, which was approved unanimously.

The Chair referred to the draft minutes from the Commission’s February 8, 2018 meeting and noted that the draft minutes had been revised after being posted for review by the Commissioners. The Chair then asked whether there was a motion to approve the revised minutes as presented. Mr. Bill Condon made a motion to approve the revised minutes as presented. Mr. Gillespie seconded the motion, which passed unanimously.

II. CHAIR’S REPORT

The Chair began by stating that Dr. Wilder’s term as the Commission’s Retiree Representative Member (“Retiree Representative”) would be coming to a close at the end of the current fiscal year. She explained that, under current law, Dr. Wilder is eligible to serve an additional four-year term. She then asked Mr. Michael Hitchcock, Chief Executive Officer, to review the Commission’s Governance Policies regarding the process for nominating the Retiree Representative. Mr. Hitchcock explained that the Governance Policies require that the Commission solicit input from South Carolina’s retiree stakeholder groups: the State Retirees Association of South Carolina and the South Carolina State Employees Association (“Retiree Groups”). He stated that Staff had prepared a letter to the Retiree Groups to solicit nomination suggestions for the position of Retiree Representative. Mr. Hitchcock stated that the

Commission could nominate Dr. Wilder during the meeting, and Staff would inform the Commission if the Retiree Groups made additional nominations. The Chair asked Dr. Wilder if he was willing to serve another term, and he responded in the affirmative. The Chair then asked for a motion to nominate Dr. Wilder to serve another term. Mr. Reynolds Williams made a motion to nominate Dr. Ronald Wilder to serve as the Retiree Representative to the Commission from July 1, 2018 to June 30, 2022 or until a successor is appointed and qualified, pursuant to state law. Mr. Gillespie seconded the motion.

Next, the Chair turned to the topic of nominations for the positions of Chair and Vice Chair of the Commission. She explained that the current Chair and Vice Chairs' two-year terms will come to a close at the end of the current fiscal year, and the Commission will need to hold elections for both positions. The Chair then made a motion to nominate Dr. Ronald Wilder to serve as Chair of the Commission for the term commencing on July 1, 2018 and ending on June 30, 2020. Mr. Gillespie seconded the motion. Mr. Williams asked if it would be permissible under the Governance Policies to close the nomination process. Mr. Hitchcock responded that the Governance Policies require that the nominations be kept open until the Commission's next meeting in June of 2018. The Chair then asked for nominations for the position of Vice Chair. Dr. Wilder made a motion to nominate Dr. Rebecca Gunnlaugsson, the current Chair, to serve as Vice Chair of the Commission for the term commencing on July 1, 2018 and ending on June 30, 2020. Mr. Condon seconded the nomination. Ms. Gunnlaugsson expressed her appreciation for the nomination and stated that it would be an honor to serve as Vice Chair.

III. AUDIT & ENTERPRISE RISK MANAGEMENT COMMITTEE REPORT

Mr. Gillespie began by stating the Committee last met in March. The Committee reviewed the Committee Charter and have a recommendation for proposed updates. He stated that the updates are primarily technical in nature and reflect more of an outsourced model as it relates to some of the audit functions. Mr. Gillespie made a motion that the Commission adopt the recommendation of the Committee to amend the Audit and Enterprise Risk Management Committee Charter as presented and authorize staff to make the technical revisions to the charter and other RSIC policy documents to reflect this decision. Mr. Hitchcock explained that this motion did not require a second because it is an active motion from the committee. The motion passed unanimously.

Mr. Gillespie explained that the next topic covered during the Committee meeting was the fiduciary performance audit, which is required by State law to be completed every four years. He explained that the Office of State Auditor selected Funston Advisory Services LLC ("Funston") through a request for proposal ("RFP") process to perform the audit which will begin in May 2018. Mr. Hitchcock noted that Funston will conducting onsite interviews after the Commission meeting in June and that Funston will be contacting Commissioners individually.

Lastly, Mr. Gillespie provided an update on the GIPS certification vendor selection. He stated that the Committee issued a RFP for GIPS compliance verification and explained that the procurement process is ongoing.

IV. HUMAN RESOURCES & COMPENSATION COMMITTEE REPORT

The Chair recognized Dr. Wilder, Chair of the Human Resources and Compensation Committee (“HRC Committee”), who presented the Commission with the HRC Committee’s Report. Dr. Wilder began by informing the Commission that the HRC Committee is recommending changes to the HRC Committee’s Charter (“Charter”) that would roll the HRC Committee’s self-evaluation into the broader Commission evaluation process and provide for the HRC Committee to make recommendations regarding the CEO’s salary. Dr. Wilder then turned to a discussion of the Commission’s Compensation Policy. He explained that the HRC Committee is recommending changes to the Compensation Policy to reflect governance changes made by the Pension Reform Act of 2017 as well as cost of living adjustments to salary ranges received from the Commission’s compensation consultant, Towers Watson & Co. (“Towers Watson”). Dr. Wilder added that the HRC Committee also received an overview of the new CEO and Staff Evaluation Processes. At that point, Dr. Wilder turned the discussion to the Commission’s compensation consultant. He explained that RSIC’s contract with Towers Watson would be expiring soon and that the Governance Policies require that a compensation study be conducted once every three years. He stated that, as a consequence, a compensation study would need to be completed in 2018, but the HRC Committee is recommending that the Commission delay the compensation study until 2019.

Upon concluding his remarks, Dr. Wilder asked that Mr. Hitchcock address the motions recommended by the HRC Committee. Mr. Hitchcock first reminded the Commissioners that, because the motion comes as a recommendation from the HRC Committee, no second to the motion is required. He then stated that the motion recommended by the HRC Committee is that the Commission: (1) Approves the recommendations of the Human Resources and Compensation Committee that the Commission amend the Charter of the Human Resources and Compensation Committee (“Charter”); (2) Adopts the proposed revisions to the Charter as presented; and (3) Authorizes Staff to make technical revisions to the Charter and other RSIC policy documents to reflect this Commission decision.

Mr. Gillespie then referred to the Compensation Policy and asked about the mechanics of determining employee merit increases. Ms. Peggy Boykin added that, under the Compensation Policy, if the South Carolina General Assembly approves state employee pay increases, Staff could receive a State-mandated increase in addition to an increase under the Compensation Policy. Mr. Hitchcock explained that employee merit increases are determined based on an order of merit list that is created by the Executive Leadership Team (“Leadership Team”). The Leadership Team reviews all employee performance scores to ensure standardization of Staff’s performance scores, and those scores are then compared to the

overall merit increase pool to determine individual performance increases. Mr. Hitchcock then overviewed the methodology for the pay bands in the Compensation Policy. At the end of the discussion, the Chair called the question, and the motion was unanimously approved.

Next, Mr. Hitchcock presented the second motion from the HRC Commission, which was that the Commission: (1) Approves the recommendation of the Human Resources and Compensation Committee that the Commission amend the Compensation Policy; (2) Adopts the proposed revisions to the Compensation Policy as presented; and (2) Authorizes Staff to make technical revisions to the Compensation Policy and other RSIC policy documents to reflect this Commission decision. A vote was taken, and the motion was unanimously approved.

V. CEO'S REPORT

The Chair recognized Mr. Hitchcock for the CEO's Report. Mr. Hitchcock introduced Mr. Kevin Reinhard, Reporting Analyst, who joined RSIC from the South Carolina Attorney General's Office. Mr. Reinhard previously worked with a financial advisory firm. He brings with him a unique combination of investment knowledge and forensic accounting skills. Mr. Reinhard is originally from Florence, South Carolina and currently resides in Lexington, South Carolina. Mr. Hitchcock then welcomed Mr. Reinhard.

VI. INVESTMENT PERFORMANCE REPORT

The Chair recognized Mr. Geoffrey Berg, Chief Investment Officer ("CIO"), who stated that through the end of February, the Plan's fiscal year to date ("FYTD") return was slightly over 8 percent, which put the Plan slightly ahead of the median pension fund for the FYTD period. Mr. Berg noted that February and March had been challenging months, and indicated that the estimated FYTD return at the end of March was approximately 7.5 percent. Mr. Berg then introduced Mr. David King, Reporting Officer, to present the Investment Performance report. Mr. King began his presentation by reviewing February FYTD performance. He stated that for the month of February, the Plan was down 2.17 percent versus a policy benchmark of 2.14 percent, which brought the Plan's FYTD performance to just above 8 percent versus a policy benchmark of 6.81 percent. Mr. King noted that the Plan was in compliance with all asset allocation ranges, with a slight overweight in GTAA and an underweight in non-portable alpha. Mr. King indicated that FYTD, the Plan had paid out \$825 million in net benefits, with investment performance adding \$2.4 billion to the Plan, bringing the Plan to a February month-end value of \$31.7 billion.

After Mr. King reviewed the asset class contributions to performance and concluded his report, a lengthy discussion took place regarding investment performance, including the performance information from Bank of New York Mellon that is provided to the Commissioners.

VII. CONSULTANT REPORT

Mr. Berg introduced Mr. Frank Benham, Managing Principal and Director of Research for Meketa Investment Group (“Meketa”) to provide a presentation on asset allocation and to provide follow up discussion on items from previous meetings. The first topic he discussed was target ranges for asset allocation. Mr. Benham explained that the first thing that should be done when adopting a new asset allocation policy, is the adoption of ranges around those targets. He explained that ranges allow you to stay in compliance with the investment policy as the market fluctuates. The more volatile asset classes will have more fluctuation, therefore those classes should have wider ranges. Mr. Benham stated that the second thing ranges do is provide the Staff the flexibility to be tactical.

Mr. Condon asked about the range for cash and short-term bonds and whether RSIC should have a cash target at zero. Mr. Benham explained that a good number of pension plans maintain a target of zero cash because they use their cash for frictional purposes. Mr. Benham explained that the plans must be able to pay benefits and make capital calls for private market asset classes, but because cash is the lowest returning asset class, plans try to minimize the cash allocation and the drag on returns.

Chair Gunnlaugsson asked whether there are any significant differences between Meketa’s new proposed ranges and the previous ranges. Mr. Berg stated that the recommendation has a slightly wider band around global equity which is favorable because the narrower band had become a little burdensome. He explained that this is why he would like the Commission to make the adopted target ranges become effective immediately. He stated that RSIC is going to begin the process of transitioning to a slightly higher equity allocation in order to take advantage of the current environment.

Mr. Gillespie asked whether the ranges are closely tied to the volatility assumptions. He also stated that he believes the lower ranges need to come up a little and be tied with the volatility. A brief discussion ensued about the ranges and volatility. Dr. Wilder inquired about rebalancing the Portfolio on a monthly basis. Mr. Berg stated that Staff starts looking at rebalancing about one week before the end of the month, this way if there is a need to rebalance in the foreign market there still is time before the end of the month to implement changes. Mr. Berg explained that the range is of heightened importance for private equity, private debt and private real estate.

Mr. Benham explained that for some asset classes, specifically illiquid asset classes such as private equity and hedge funds, the benchmarks that are being used are benchmarks relevant to long term performance. Next Mr. Benham walked through the each of the proposed changes to the primary policy benchmarks beginning with global equity. Mr. Benham stated that Meketa recommends adopting a policy benchmark that is weighted according to target weights in US, Europe/Japan and emerging markets. The three benchmarks are MSCI USA, the MSCI World, and MSCI emerging markets. He stated that those benchmarks, when added

together, are slightly different than the composition within the standard ACWI index. It is now weighted according to the Plan policy benchmark.

Mr. Benham reviewed the second proposed change, related to the equity option strategies. Currently RSIC is using a publicly available BuyWrite Index, which is an index that tracks the ability to write call options. The current implementation of the equity option strategies allows for two managers to do not just Buy-Writing but also Put-Writing. He recommended a mix of Put-Writing and Buy-Writing Index as more appropriate for RSIC.

The third and fourth recommendations Mr. Benham stated are changes to the global asset allocation and other opportunistic strategies. He explained that the rest of the assets that are not invested in the global assets mandates could theoretically be invested in the rest of the portfolio, and more specifically in the liquid portions of the Portfolio. Thus, Mr. Benham stated the recommendation is to use the total system's benchmark, minus the illiquid parts, to represent the true opportunity for where the global assets could otherwise be invested.

The next topic Mr. Benham discussed was real estate, and he recommended a technical change by changing the benchmark to one that is net of fees. Net fees are going to be a lower hurdle therefore Meketa recommend reviewing the expected "spread" over the benchmark. The non-core mix is 60 percent core and 40 percent non-core. Meketa expects the non-core to earn about 200-300 basis points over the core. A lengthy discussion ensued regarding the real estate market.

Dr. Wilder inquired about the global equity benchmark and targets for the Developed Market Equity (non-U.S.) and the Emerging Market Equity components of the global public equity benchmark. A discussion took place regarding the benchmarking process. During the discussion, Chair Gunnlaugsson suggested that it would be helpful to retain and use the current benchmark for global public equity as a secondary benchmark to the new benchmark. She stated that the secondary benchmark would provide a picture of value added from the benchmark changes to global public equity. Mr. Berg agreed that providing this secondary benchmark might offer valuable insight.

Dr. Wilder made a motion that the Commission adopts the recommendation of Meketa and the CIO, as amended, to approve the benchmarks and ranges set forth on red numbered pages 71-72 of the open session agenda materials as presented with the ranges to be effective as of April 12, 2018, to insert the current benchmark for global public equity as the secondary benchmark for global public equity, and the benchmarks to be effective July 1, 2018; directs that the approved benchmarks and ranges be incorporated and made part of the SIOP; and authorizes Staff to finalize the benchmark and asset allocation ranges by making any technical revisions or formatting edits consistent with the action taken by the Commission. Ms. Betsy Burn, Chief Legal Officer, clarified that the motion should reference red numbered pages 70-72. Mr. Edward Giobbe seconded the motion, which was unanimously approved.

A break was taken from 10:48 a.m. to 10:58 p.m.

Upon returning from break, Mr. Peter Woolley, Managing Principal and Co-Chief Executive Officer for Meketa, began his presentation by reviewing what was discussed at the February 8, 2018 meeting regarding sequence of return analysis and how RSIC can achieve a 7.25 percent average return over 20 years. Mr. Woolley pointed out that sequence of returns do not matter at all to the end result if cash flow is neutral, however because there is negative cash flows for the Plan, sequence of returns matters a great deal. He stated that additional analysis being presented demonstrates the impact of the fund becoming fully funded and the continuation of the funding status. A discussion ensued regarding projected levels of funded status based on different scenarios of expected returns, strong early versus strong late, and impact on funding percentage. Chair Gunnlaugsson noted that she would like the Commission to be provided with updates on the funded status and would like Staff to work with Meketa on developing insight regarding what other plans might be doing in terms of how are they reporting. Mr. Berg and Mr. Woolley both agreed to work on the reporting per Chair Gunnlaugsson's request.

Mr. Woolley's final topic of discussion was of the estimated impact of the Tax Cuts and Jobs Act ("TCJA") on the Retirement Systems. He stated that he believes that changes in the tax policy do not warrant a significant change to long-term strategic asset allocation. But there are three categories he wanted to go over, the first being positive impact. Global growth being the biggest positive impact. He stated economists are predicting a positive impact on the GDP over the next few years, possibly a half percent per year.

He explained the next category would be impacts of the TCJA that are neutral. The impact on domestic equities and international equities are neutral because it is already priced into the market today. The last category would be the negative impacts, specifically the effect on the U.S. dollar, fixed income, and debt level. After a discussion including the positive impacts on TIPS, Mr. Woolley concluded his presentation.

VIII. CIO'S REPORT

Mr. Berg began his report by discussing the increased volatility in the markets, particularly in the U.S. equity market. Mr. Berg reviewed the key challenges for markets: the Federal Reserve is motivated to raise interest rates, given continued strong U.S. economic growth; higher interest rates reduce the appeal of risk assets; most risky assets are perceived as expensive; the flattening of the yield curve, and a return to historically higher, more "normal" equity volatility may reduce the attractiveness of risk assets.

Mr. Berg went over the Portfolio's risk versus the 70 percent equity/30 percent fixed income risk benchmark which had recently been implemented by RSIC's Risk Team. He noted that while certain factors suggest elevated risk for investors, growth remains strong globally. Mr. Berg concluded by stating that the Investment Team does not expect a return to the low-

volatility environment of recent years, and noting that rising volatility may create attractive opportunities.

The next order of business was the discussion and adoption of the Annual Investment Plan (“AIP”) for Fiscal Year 2018. Mr. Berg noted that on March 17th, a draft of the AIP had been distributed and thanked all of the Commissioners for their helpful feedback. Mr. Berg stated that 34 different initiatives are being included in the AIP. He noted that many of the Investment Team’s initiatives are ongoing in nature, and indicated that six of the initiatives reflect goals of both the Operations team as well as the Legal team. Mr. Condon asked if the initiatives are required to be part of the AIP, and suggested that the Commission should discuss how it monitors the progress of implementing the initiatives included in the AIP. Mr. Hitchcock responded by recommending that the Commission discuss this topic during the Commission’s June meeting.

Mr. Gillespie asked about the rebalancing language in the AIP. After some discussion, Mr. Berg recommended that the Staff make a technical amendment to the draft AIP to address inter-asset class rebalancing. After additional discussion regarding the AIP, Dr. Ron Wilder moved that the Commission adopt the recommendation of the CIO and Staff to approve the proposed Annual Investment Plan for Fiscal Year 2018, as set forth in the red-numbered document beginning on page 93, with an effective date of July 1, 2018, and authorize Staff to finalize the AIP by making any technical revisions or formatting edits consistent with the action taken by the Commission. Mr. Gillespie seconded the motion, which passed unanimously.

IX. DELEGATED INVESTMENT REPORT

Mr. Berg noted that the next Agenda item was the report on an investment made pursuant to the delegation policy (the “Policy”). He reminded the Commission that the Policy authorizes the Chief Investment Officer to approve investments within certain limitations. The Policy also requires that Staff provide an update to the Commission about delegated investments once they are closed at the next Commission meeting. Mr. Berg introduced Mr. Derek Connor, Senior Investment Officer, to provide a summary regarding Digital Colony Partners, a private equity investment in digital infrastructure.

Mr. Connor stated that an investment of \$125 million with Digital Colony Partners closed on March 22, 2018. He explained that Digital Colony is a joint venture between two different firms, Digital Bridge, an experienced owner and manager of digital infrastructure, and Colony NorthStar, a large real estate manager with approximately \$46 billion in assets under management. Mr. Connor noted that Digital Bridge will be primarily responsible for the investment management function, while Colony NorthStar will provide back-office functions, including compliance, and assistance with fundraising.

Mr. Connor explained that Digital Colony Partners will invest in macro cell towers, small cells, data centers and fiber. He described how this investment fits into the private equity portfolio

although it is focused on infrastructure-type investments, and indicated that co-investment opportunities may arise. After answering questions from the Commissioners regarding the investment, Mr. Connor concluded his report.

X. EXECUTIVE SESSION

Mr. William Hancock made a motion that the Commission recede into Executive Session to discuss investment matters pursuant to S.C. Code Sections 9-16-80 and 9-16-320; to receive advice from legal counsel pursuant to S.C. Code Section 30-4-70(a)(2) related to litigation filed by American Timberlands Fund II, LP and to receive advice from legal counsel pursuant to S.C. Code Section 30-4-70(a)(2). Mr. Williams seconded the motion, which passed unanimously.

XI. POTENTIAL ACTION RESULTING FROM EXECUTIVE SESSION

Upon return to open session at 2:19 p.m., Mr. Hitchcock noted that the Commission did take action while in executive session. Any such action that did occur while in executive session will be publicized when doing so would not jeopardize the Commission's ability to achieve its investment objectives or implement a portion of the annual investment plan.

XII. ADJOURNMENT

There being no further business, upon a motion made by Mr. Gillespie and seconded by Mr. Giobbe, the Commission voted unanimously to adjourn. The meeting adjourned at 2:20 p.m.

[Staff Note: In compliance with S.C. Code Section 30-4-0, public notice of and the agenda for this meeting was delivered to the press and to parties who requested notice and were posted at the entrance, in the lobbies and near the 15th Floor Presentation Center at 1201 Main Street, Columbia, S.C., at 3:58 p.m. on April 10, 2018]

**South Carolina Retirement System Investment Commission
Meeting Minutes**

**May 17, 2018 3:30 p.m.
Capitol Center
1201 Main Street, 15th Floor
Columbia, South Carolina 29201
Meeting Location: Presentation Center**

Commissioners Present:

Dr. Rebecca Gunnlaugsson, Chair
Dr. Ronald Wilder, Vice Chair
Ms. Peggy Boykin, PEBA Executive Director (via telephone)
Mr. Allen Gillespie (via telephone)
Mr. Edward Giobbe (via telephone)
Mr. Reynolds Williams (via telephone)
Mr. William H. Hancock
Mr. William J. Condon

I. CALL TO ORDER AND CONSENT AGENDA

Chair Rebecca Gunnlaugsson called the meeting of the South Carolina Retirement System Investment Commission (“Commission”) to order at 3:30 p.m. Dr. Ronald Wilder made a motion to approve the proposed agenda as presented. Mr. Edward Giobbe seconded the motion, which was approved unanimously.

II. EXECUTIVE SESSION

Mr. William Hancock made a motion that the Commission recede into Executive Session to discuss investment matters pursuant to S.C. Code Ann. § 9-16-80 and § 9-16-320. Mr. Giobbe seconded the motion, which passed unanimously.

Upon return to open session at 4:50 p.m., Mr. Michael Hitchcock, CEO, noted the Commission did not take any reportable action while in executive session. Any action that did occur while in executive session will be publicized when doing so would not jeopardize the Commission’s ability to achieve its investment objectives or implement a portion of the annual investment plan.

III. ADJOURNMENT

There being no further business, upon a motion made by Mr. Hancock and seconded by Mr. William Condon the Commission voted unanimously to adjourn. The meeting adjourned at 4:52 p.m.

[Staff Note: In compliance with S.C. Code Ann. Section 30-4-80, public notice of and the agenda for this meeting were delivered to the press and to parties who requested notice and were posted at the entrance, in the lobbies and near the 15th Floor Presentation Center at 1201 Main Street, Columbia, S.C., at 4:49 p.m. on May 15, 2018.]

Updating the SIOP and AIP

Michael Hitchcock, CEO

Geoff Berg, CIO

Robert Feinstein, Managing Director

Background

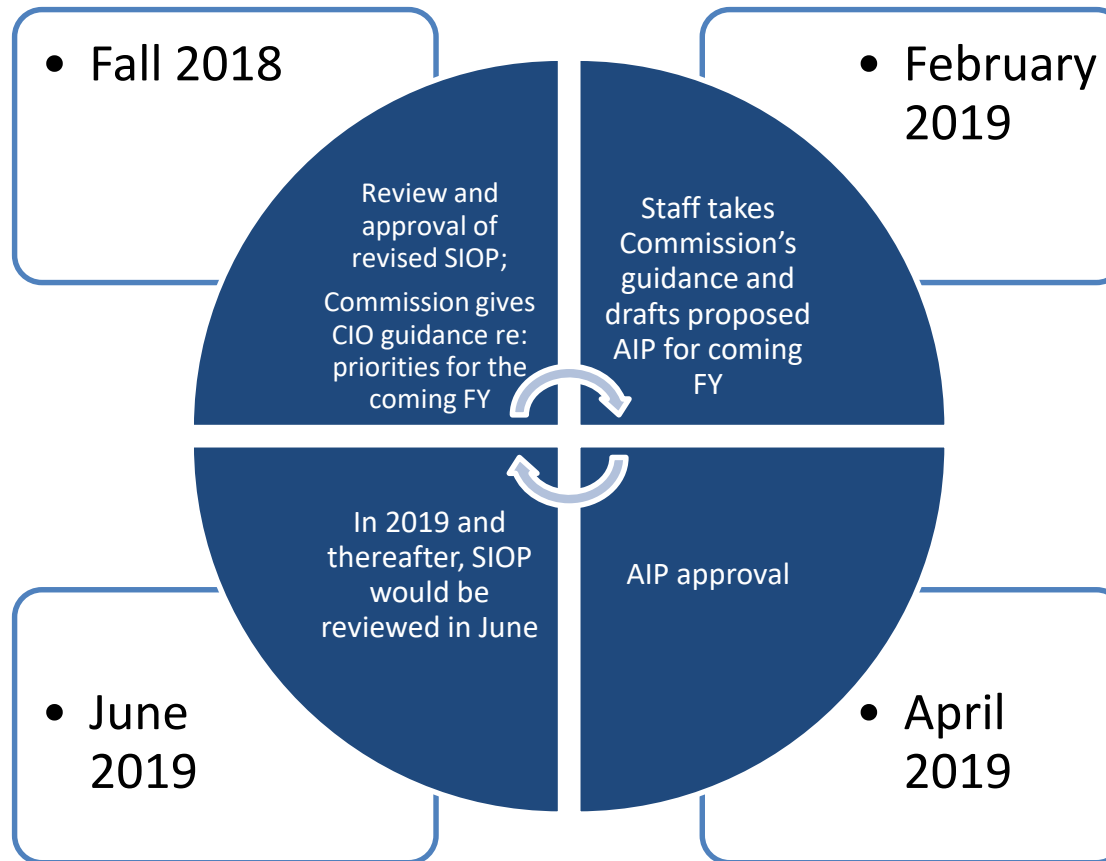
- State law requires that the Commission maintain both a Statement of Investment Objectives and Policies (“SIOP”) and an Annual Investment Plan (“AIP”), and specifies certain content that must be included in these documents.
- The Commission recently approved the AIP. The SIOP, last reaffirmed in September 2017, is next up: it is in need of an update.
- As part of this update, we think that the opportunity exists to simplify the SIOP and AIP and make it easier for the Commission and Staff to track and demonstrate compliance with the requirements of State law.

What changes would be made to the SIOP and AIP?

In updating the documents:

- The SIOP's principal role would be to house State law-mandated content, including:
 - big picture, strategic and policy matters that are unlikely to change frequently, and
 - items relevant to the Commission's long-term asset allocation (e.g., Meketa's annual capital market assumptions).
- The SIOP could also house any longer term portfolio management plans approved by the Commission.
- The AIP would have two parts:
 - State law-mandated content that is unlikely to change frequently, and
 - The Investment Team's annual initiatives.

Suggested annual review cycle for the SIOP and AIP



RSIC COMMUNICATIONS PLAN

GOAL: Promote a sense of confidence that RSIC is a world class investment organization which performs solely in the best interest of our beneficiaries' financial future.

AUDIENCE:

- Beneficiaries
- Stakeholder Organizations
- Appointing Authorities, General Assembly, Co-Trustees, and other State agencies
- Media
- Public

APPROACH: RSIC should communicate in a frank, open, and honest manner to its audience. Messaging should be consistent, clear, and concise, and to the extent possible investment jargon free and easily digestible. Messaging should be targeted to engage all sections of the audience and when viewed comprehensively, the central theme of the aggregate of all communications should be to further the communications goal.

METHODS:

- RSIC Website
- Biannual stakeholder meetings
- Presentations to stakeholder group meetings
- Press releases, Op-Eds, and other direct outreach to local, state, and industry media
- Presentations to industry related meetings and conferences
- Testimony before legislative committees

RESPONSIBILITY: The Commission places primary responsibility for agency communications on the CEO. On an annual basis, the CEO will inform the Commission of specific key communications initiatives planned for the upcoming year that are specifically intended to further the communications goal. The CEO will also provide a progress report on the key communications initiatives from the prior year.

In addition to the CEO, RSIC also has significant capabilities to perform the day-to-day communications function through its External Relations Team comprised of the Director of External Communications and the Director of External Policy.

The Director of External Communications is the key staff member responsible for direct interaction and communication with our Beneficiaries, Stakeholder Representatives, Media, and the Public, regarding RSIC's investment activities, performance, and community involvement.

The Director of External Policy is the key staff member responsible for direct interaction and communication with the Appointing Authorities and their staffs, the Members, Committees, and staffs of the General Assembly, the Co-Trustees, and other state agencies, regarding RSIC's policy positions, budgetary needs, investment activities, and performance.

KEY INITIATIVES FOR FY-2019:

- Develop a series of short instructional video presentations accessible from the RSIC website that explain RSIC's purpose, the overall investment portfolio, and the role and benefit of the various asset classes included in the portfolio.
- Prepare a follow-up Op-Ed to the one published in the Fall of 2016 that tracks our progress from that point.
- Emphasize engaging directly with the public through presentations to civic organizations like Rotary and others.
- Increase stakeholder representative participation at the biannual stakeholder meetings.
- Increase communication of positive RSIC events like substantial promotions and achievements to industry media such as P&I.
- Enhance RSIC's national profile by continuing to encourage RSIC leadership and key staff to present to industry meetings and conferences.
- Ensure that RSIC is prepared for significant engagement with the General Assembly on continued efforts at Pension Reform.
- Make a presentation to the Joint Pension Committee that provides insight into and understanding of our asset allocation process, the role of the respective asset classes, and especially the balance of risk and return.

Performance Update

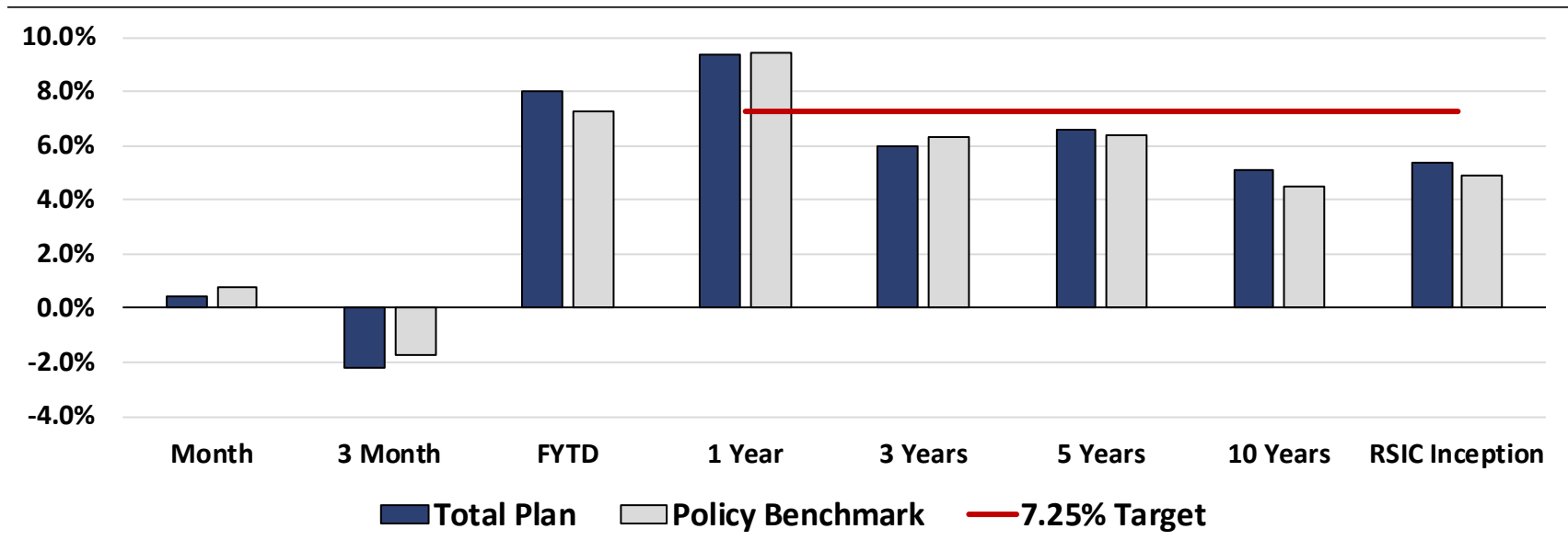
RSIC IIC Meeting

June 14, 2018

Data as of April 30th, 2018

Performance - Plan & Policy Benchmark²

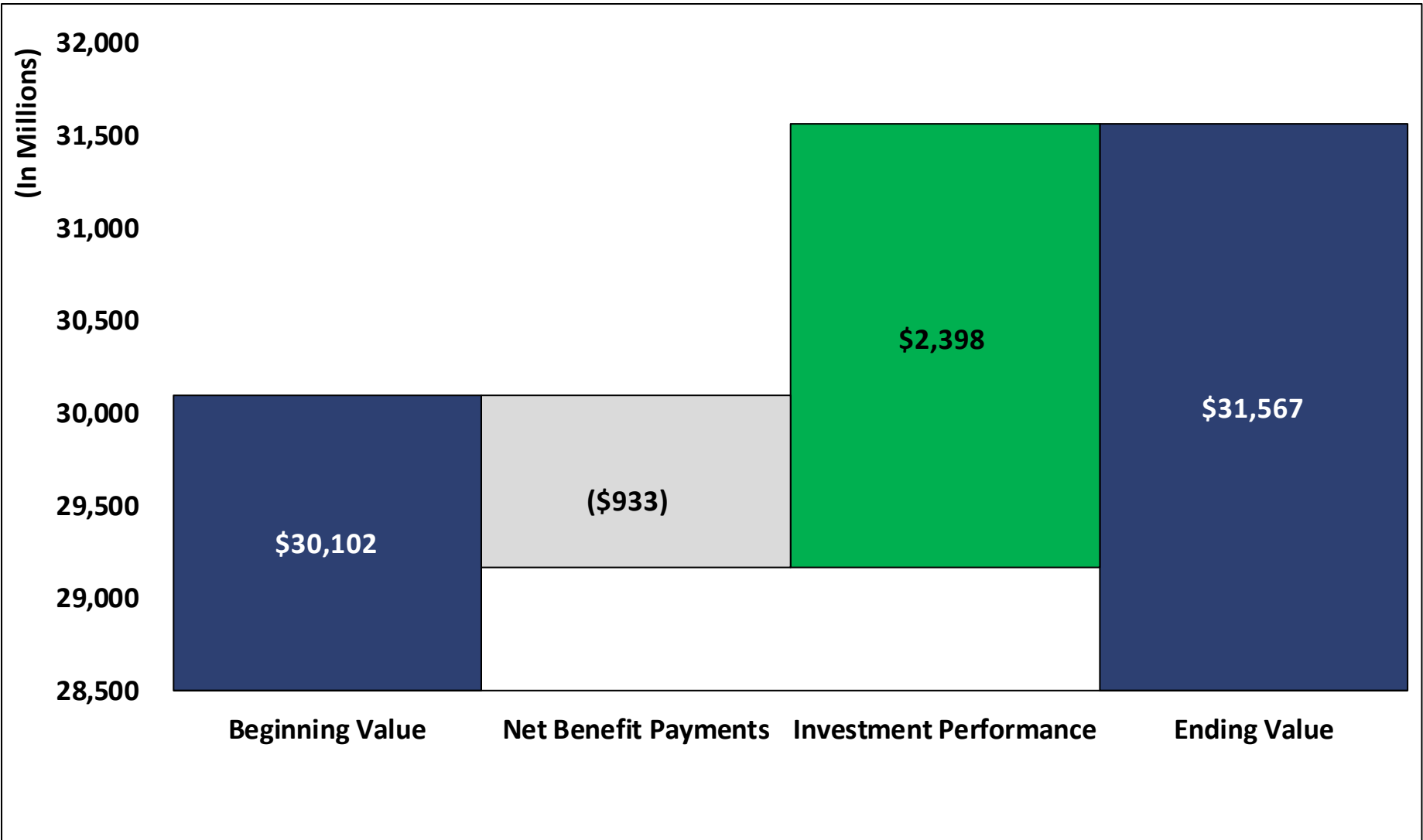
As of April 30, 2018



Historic Plan Performance As of 04/30/18	Market Value (In Millions)	Annualized							
		Month	3 Month	FYTD	1 Year	3 Years	5 Years	10 Years	RSIC Inception
Total Plan	\$31,567	0.42%	-2.19%	8.01%	9.39%	5.96%	6.60%	5.10%	5.38%
Policy Benchmark		0.80%	-1.70%	7.29%	9.40%	6.32%	6.42%	4.49%	4.87%
Excess Return		-0.39%	-0.49%	0.72%	-0.01%	-0.35%	0.18%	0.61%	0.52%
Net Benefit Payments (In Millions)		(\$29)	(\$205)	(\$933)	(\$1,127)	(\$3,311)	(\$5,425)	(\$10,014)	(\$12,182)

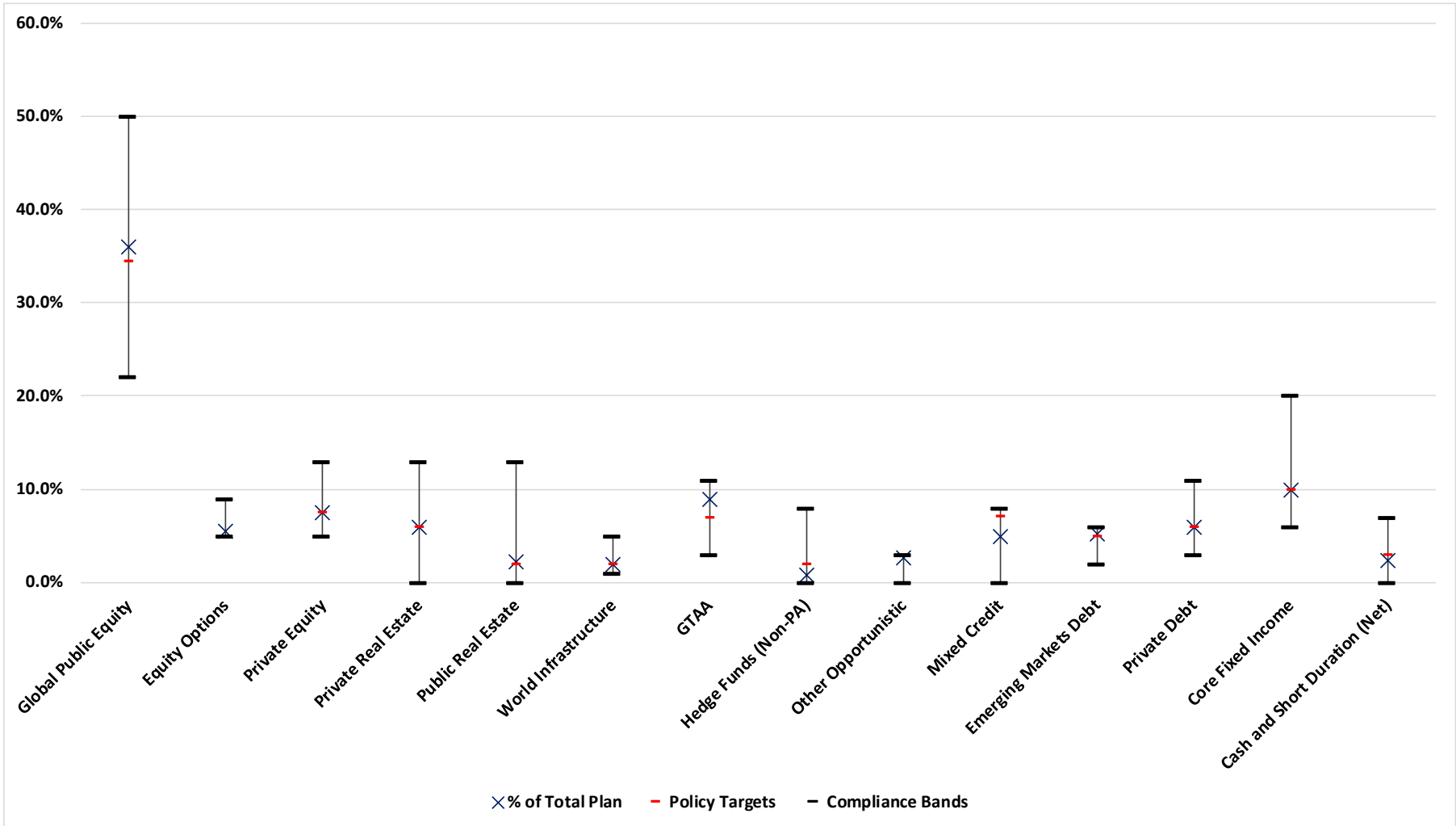
FYTD Benefits and Performance²

FYTD as of April 30, 2018



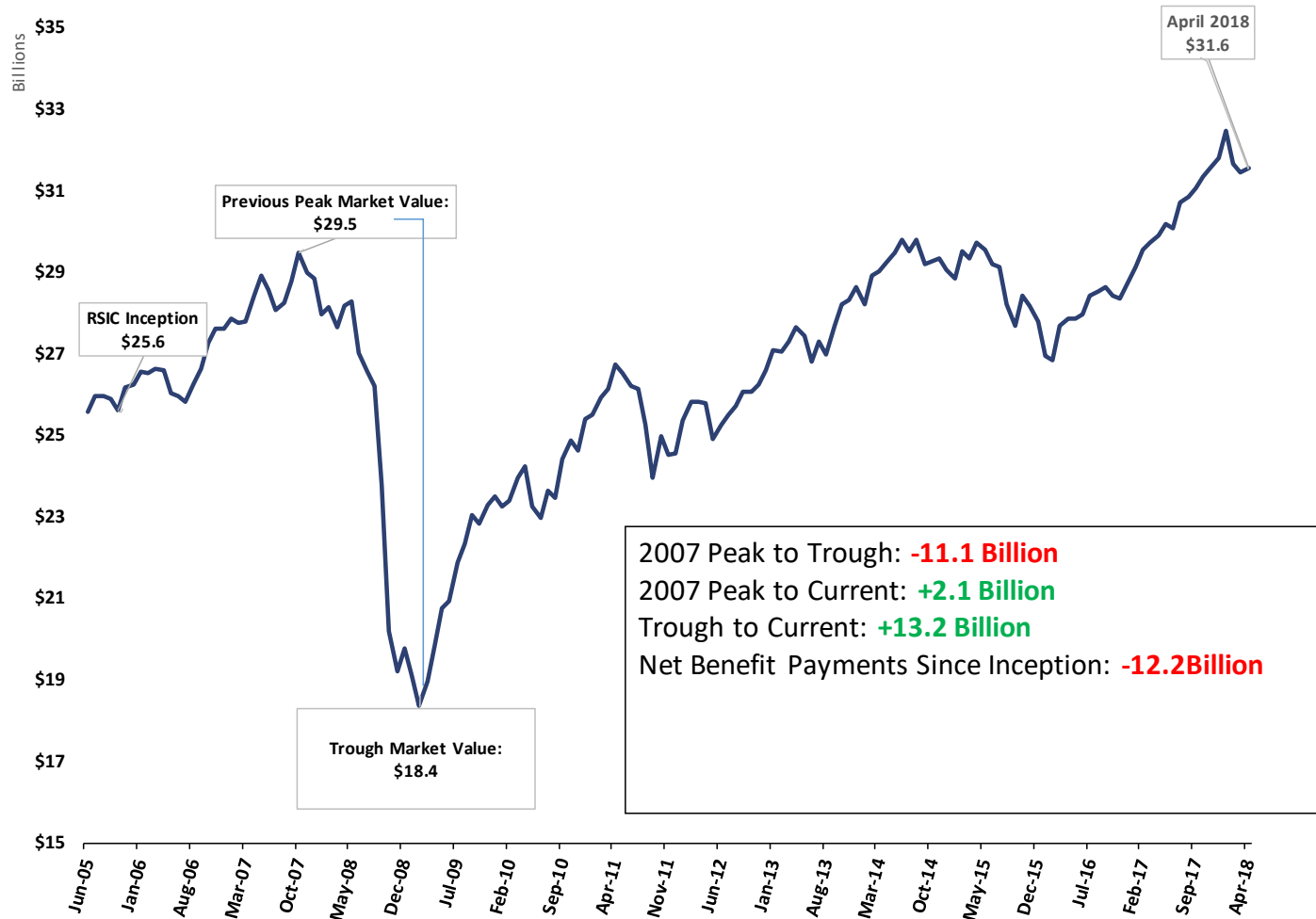
Portfolio Exposure & Policy Weights ^{4,8}

As of April 30, 2018



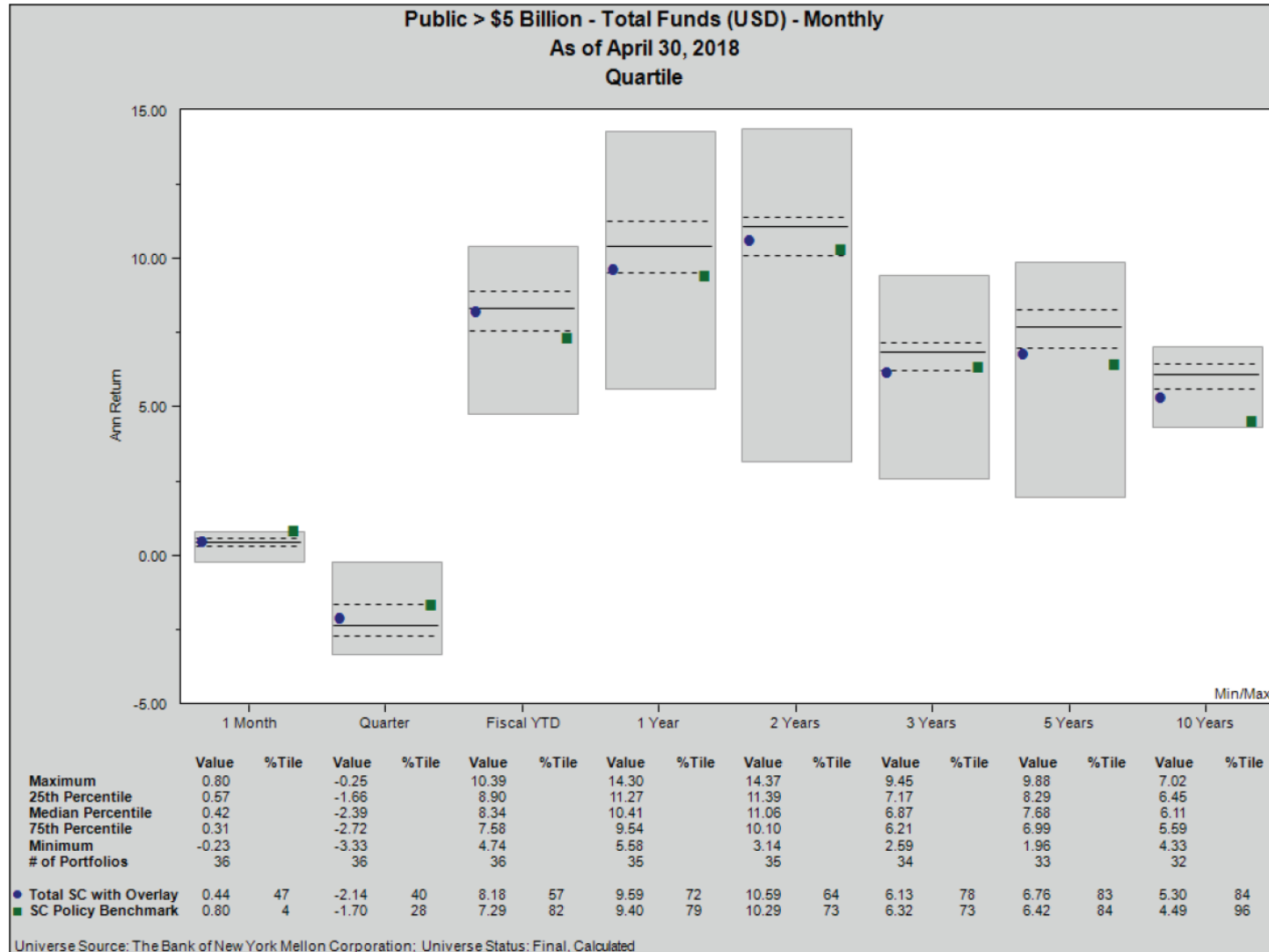
RSIC Market Value Through Time

As of April 30, 2018



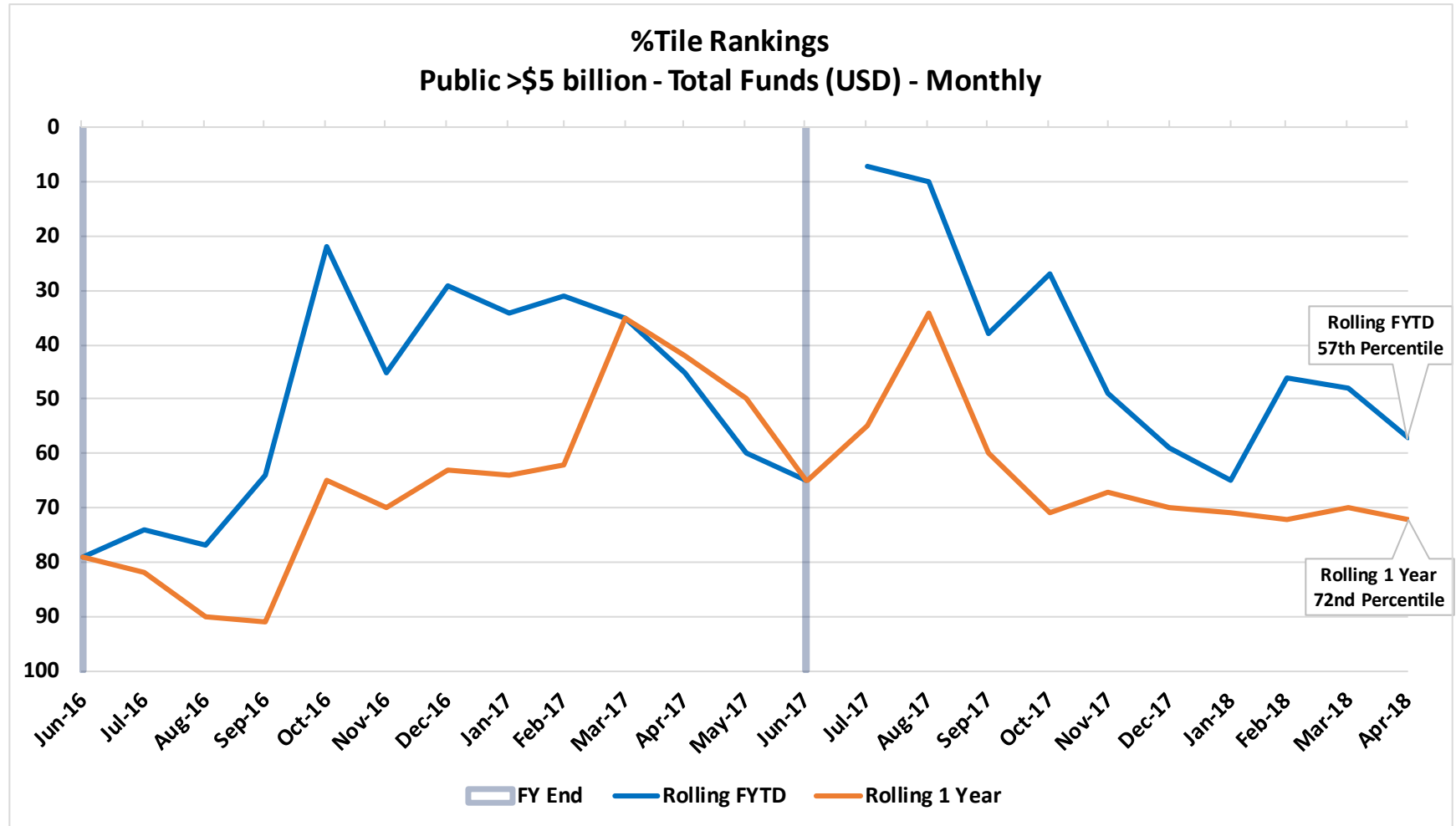
Bank of New York Public Funds > \$5 billion¹¹

As of April 30, 2018



RSIC Universe Rankings¹¹

As of April 30, 2018



Performance – Plan & Asset Classes^{1,3,4,10}

As of April 30, 2018

Asset Class / Benchmark returns as of 04/30/18	Plan Weight	Month	3 Month	YTD	FYTD	1 Year	3 Years	5 Years
Total Plan	100.0%	0.42%	-2.19%	0.47%	8.01%	9.39%	5.96%	6.60%
Policy Benchmark		0.80%	-1.70%	0.57%	7.29%	9.40%	6.32%	6.42%
Global Public Equity	36.0%	0.57%	-5.39%	-0.20%	11.41%	14.42%	7.35%	8.53%
<i>Global Public Equity Blend</i>		0.93%	-5.09%	0.03%	11.38%	14.27%	7.56%	8.87%
Equity Options	5.5%	0.73%	-3.28%	-1.59%	4.94%	6.60%	n/a	n/a
<i>CBOE S&P 500 BuyWrite Index (BXM)</i>		1.33%	-1.19%	-0.25%	5.14%	7.39%	n/a	n/a
Private Equity	7.5%	0.84%	4.54%	6.34%	14.42%	15.41%	11.38%	13.53%
<i>Private Equity Blend</i>		5.31%	9.82%	11.70%	23.10%	28.67%	16.21%	17.02%
GTAA	8.9%	0.37%	-3.56%	-0.66%	4.95%	5.86%	3.31%	3.70%
<i>GTAA Blend</i>		0.20%	-3.10%	-1.10%	4.69%	6.35%	5.05%	4.94%
Other Opportunistic	2.6%	1.02%	0.43%	1.36%	7.39%	n/a	n/a	n/a
<i>50% MSCI World / 50% Bloomberg Barclays US Aggregate</i>		0.20%	-3.10%	-1.10%	4.69%	n/a	n/a	n/a
Hedge Funds (Non-PA)	0.8%	0.65%	0.04%	0.67%	3.54%	3.01%	n/a	n/a
<i>50% MSCI World / 50% Bloomberg Barclays US Aggregate</i>		0.20%	-3.10%	-1.10%	4.69%	6.35%	n/a	n/a
Core Fixed Income	10.0%	-0.77%	-1.28%	-2.50%	-1.48%	-0.99%	0.80%	1.16%
<i>Barclays US Aggregate Bond Index</i>		-0.74%	-1.05%	-2.19%	-0.98%	-0.32%	1.07%	1.47%
Cash and Short Duration (Net)	2.4%	0.13%	0.37%	0.49%	1.04%	1.17%	0.57%	0.36%
<i>ICE BofA Merrill Lynch 3-Month T-Bill</i>		0.13%	0.37%	0.49%	1.04%	1.17%	0.57%	0.36%
Mixed Credit	5.0%	0.14%	-0.15%	0.70%	4.10%	4.74%	3.56%	3.42%
<i>Mixed Credit Blend</i>		0.53%	0.04%	0.82%	3.15%	3.84%	4.87%	4.34%
Private Debt	6.0%	0.70%	0.54%	1.48%	5.79%	5.15%	4.93%	7.20%
<i>S&P/LSTA Leveraged Loan + 150 Bps on a 3-month lag</i>		1.15%	1.89%	2.46%	5.11%	6.04%	6.16%	5.51%
Emerging Markets Debt	5.2%	-2.28%	-3.09%	-0.24%	3.73%	5.33%	5.61%	1.70%
<i>Emerging Markets Debt Blend</i>		-2.21%	-3.06%	-0.91%	1.70%	4.81%	4.12%	0.96%
Private Real Estate	6.0%	1.53%	3.72%	4.28%	10.58%	11.47%	11.51%	14.72%
<i>NCREIF ODCE + 75 Bps</i>		0.07%	2.16%	2.23%	6.43%	8.37%	11.17%	12.28%
Public Real Estate	2.2%	1.42%	-2.36%	-6.25%	-0.95%	0.52%	n/a	n/a
<i>FTSE NAREIT Equity REITs Index</i>		1.43%	-2.82%	-6.88%	-4.60%	-3.26%	n/a	n/a
World Infrastructure	1.9%	1.28%	-4.92%	-4.81%	-0.75%	1.01%	n/a	n/a
<i>Dow Jones Brookfield Global Infrastructure Net Index</i>		1.48%	-3.84%	-3.85%	-0.18%	2.02%	n/a	n/a
Ported Cash	3.4%	0.13%	0.37%	0.49%	1.04%	1.17%	n/a	n/a
<i>3 Month LIBOR</i>		0.19%	0.51%	0.65%	1.33%	1.53%	n/a	n/a
Ported Short Duration	3.7%	0.02%	0.06%	-0.04%	0.53%	0.82%	n/a	n/a
<i>3 Month LIBOR</i>		0.19%	0.51%	0.65%	1.33%	1.53%	n/a	n/a
Portable Alpha Hedge Funds	9.5%	0.37%	-0.57%	1.62%	7.19%	6.34%	n/a	n/a
<i>3 Month LIBOR</i>		0.19%	0.51%	0.65%	1.33%	1.53%	n/a	n/a

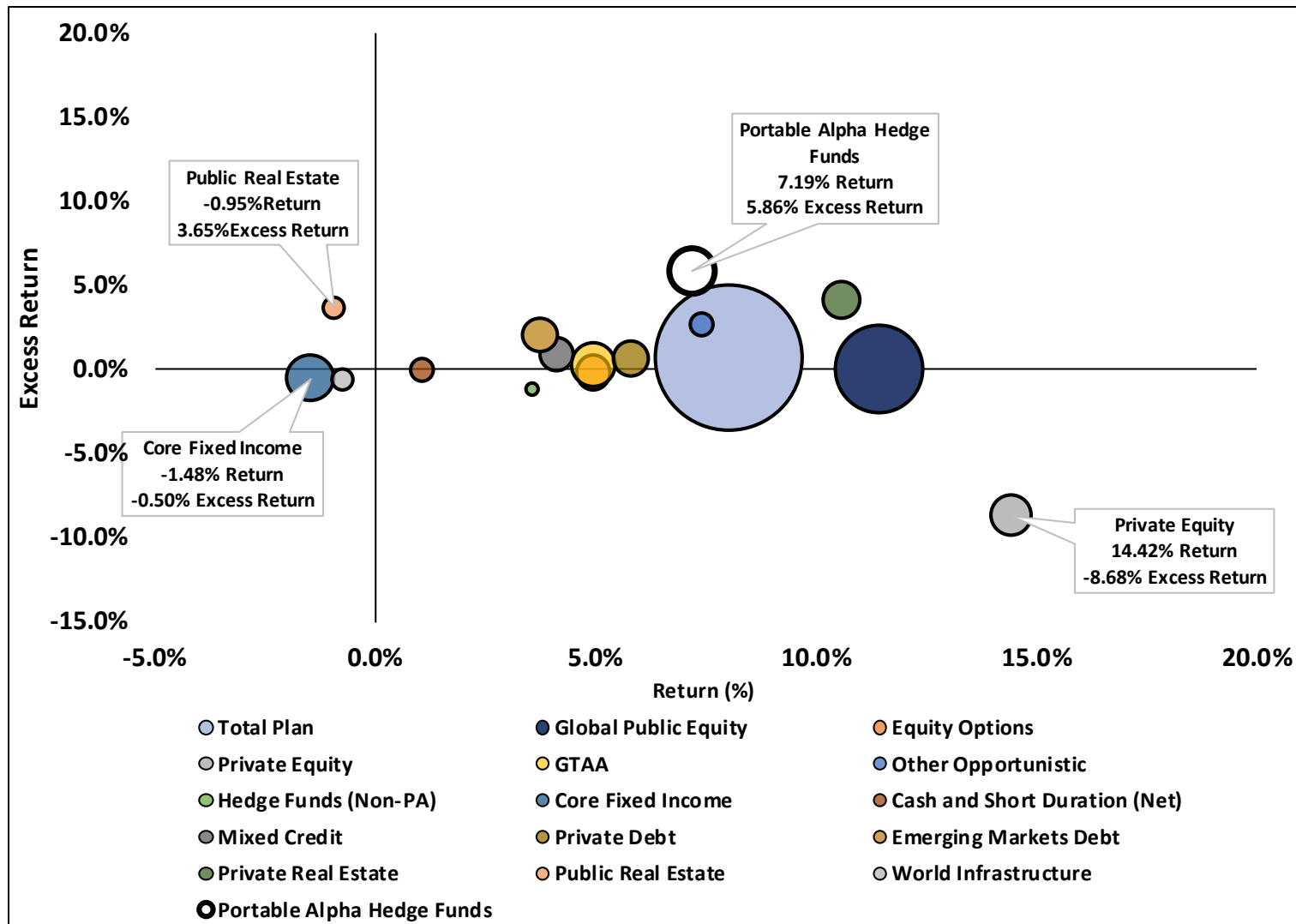
Performance – Plan & Asset Classes^{1,3,4,10}

As of April 30, 2018

Asset Class / Benchmark returns as of 04/30/18	Plan Weight	Month	3 Month	YTD	FYTD	1 Year	3 Years	5 Years
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<i>GTAA Blend</i>		0.20%	-3.10%	-1.10%	4.69%	6.35%	5.05%	4.94%
Other Opportunistic	2.6%	1.02%	0.43%	1.36%	7.39%	n/a	n/a	n/a
<i>50% MSCI World / 50% Bloomberg Barclays US Aggregate</i>		0.20%	-3.10%	-1.10%	4.69%	n/a	n/a	n/a
Hedge Funds (Non-PA)	0.8%	0.65%	0.04%	0.67%	3.54%	3.01%	n/a	n/a
<i>50% MSCI World / 50% Bloomberg Barclays US Aggregate</i>		0.20%	-3.10%	-1.10%	4.69%	6.35%	n/a	n/a
Core Fixed Income	10.0%	-0.77%	-1.28%	-2.50%	-1.48%	-0.99%	0.80%	1.16%
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Emerging Markets Debt	5.2%	-2.28%	-3.09%	-0.24%	3.73%	5.33%	5.61%	1.70%
<i>Emerging Markets Debt Blend</i>		-2.21%	-3.06%	-0.91%	1.70%	4.81%	4.12%	0.96%
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<i>FTSE NAREIT Equity REITs Index</i>		1.43%	-2.82%	-6.88%	-4.60%	-3.26%	n/a	n/a
World Infrastructure	1.9%	1.28%	-4.92%	-4.81%	-0.75%	1.01%	n/a	n/a
<i>Dow Jones Brookfield Global Infrastructure Net Index</i>		1.48%	-3.84%	-3.85%	-0.18%	2.02%	n/a	n/a
Ported Cash	3.4%	0.13%	0.37%	0.49%	1.04%	1.17%	n/a	n/a
<i>3 Month LIBOR</i>		0.19%	0.51%	0.65%	1.33%	1.53%	n/a	n/a
Ported Short Duration	3.7%	0.02%	0.06%	-0.04%	0.53%	0.82%	n/a	n/a
<i>3 Month LIBOR</i>		0.19%	0.51%	0.65%	1.33%	1.53%	n/a	n/a
Portable Alpha Hedge Funds	9.5%	0.37%	-0.57%	1.62%	7.19%	6.34%	n/a	n/a
<i>3 Month LIBOR</i>		0.19%	0.51%	0.65%	1.33%	1.53%	n/a	n/a

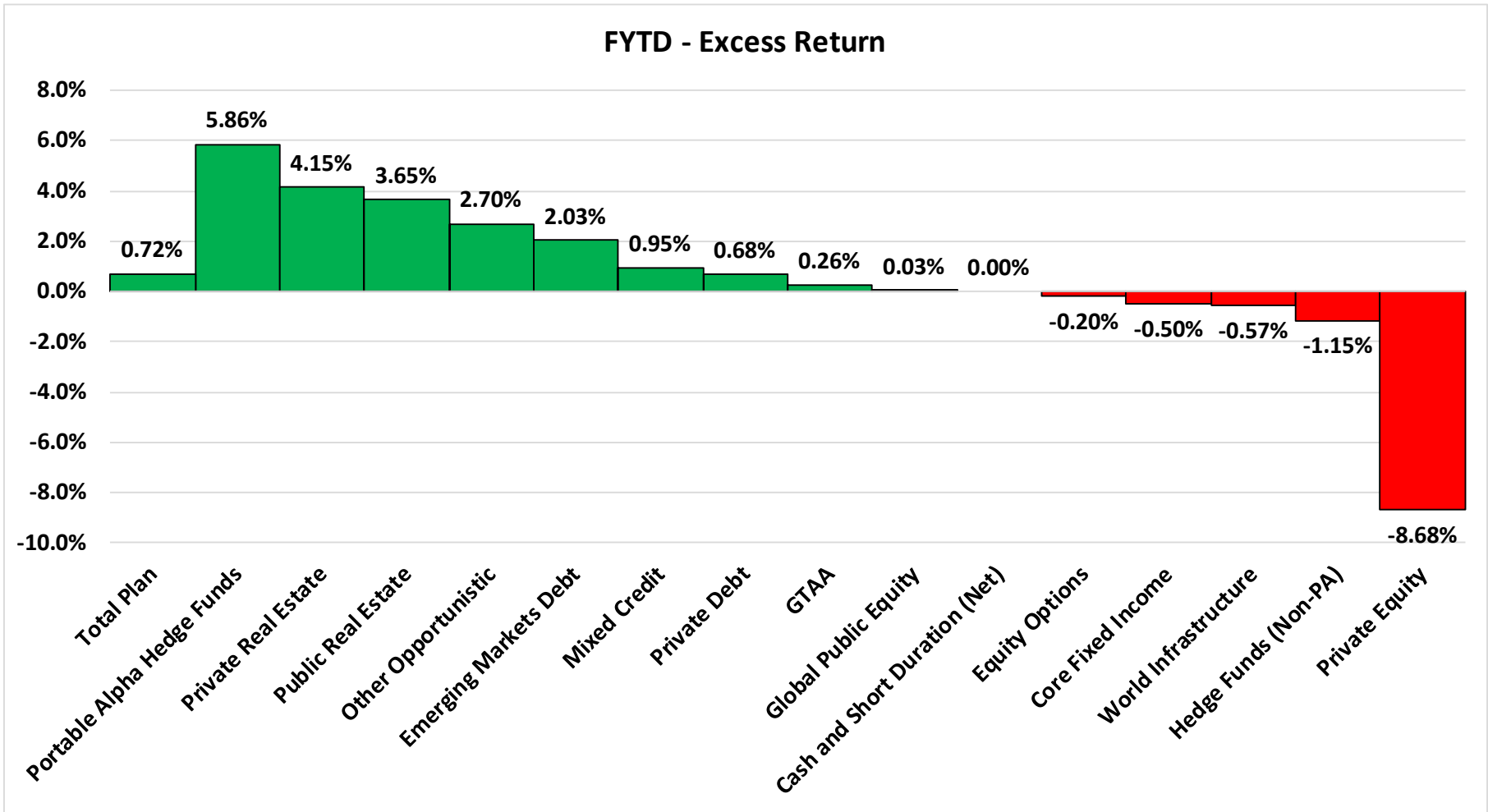
Asset Class Return & Excess^{1,3,4,10}

FYTD as of April 30, 2018



Relative Performance to Policy Benchmarks^{1,3,4,10}

FYTD as of April 30, 2018



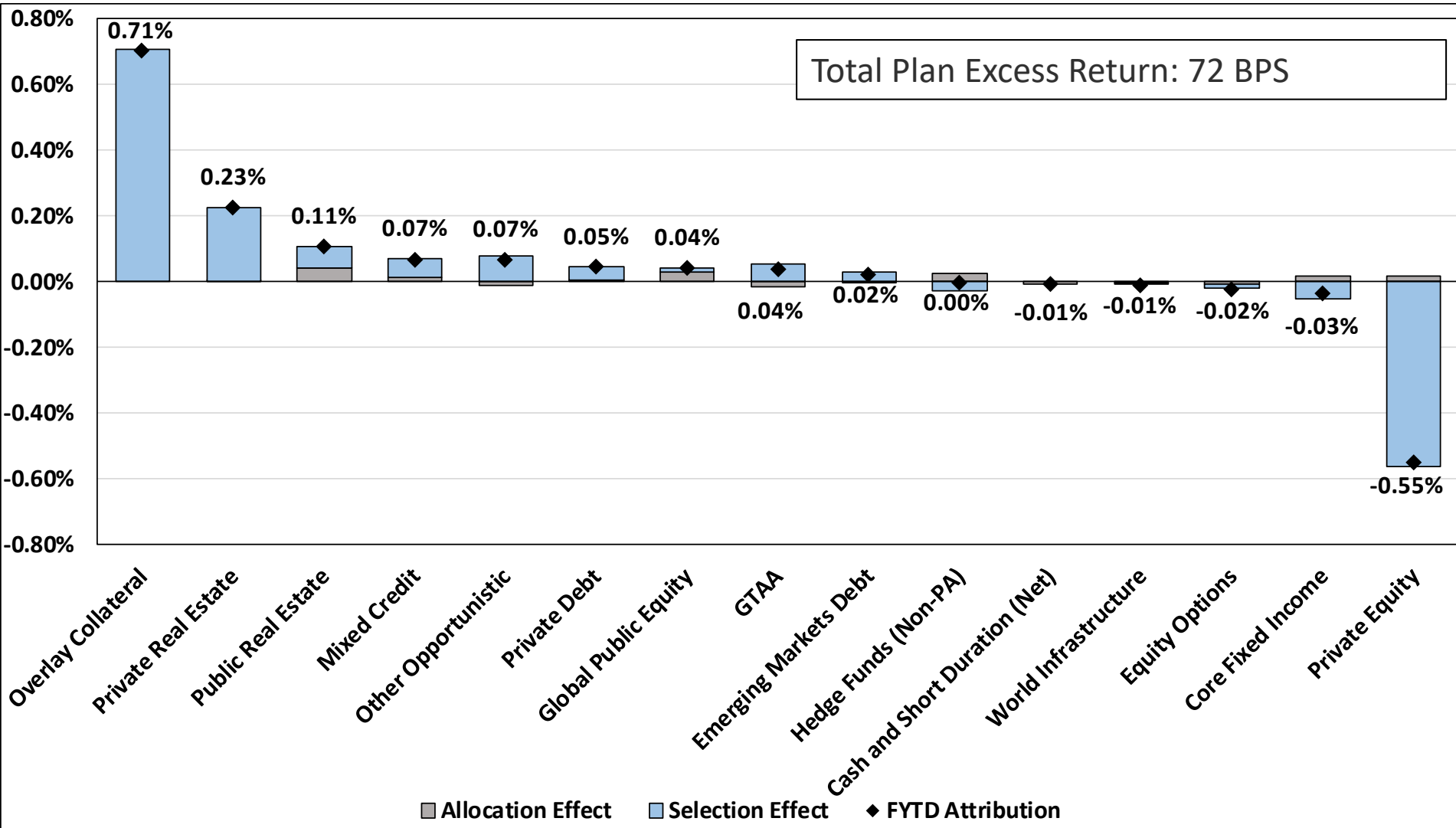
Attribution of Excess Returns^{1,3,4,7,10}

FYTD as of April 30, 2018

	Total Attribution	Allocation Effect	Selection Effect	Average O/U Weight	Asset Class FY Return	Asset Class BM Return
Fiscal Year Attribution						
Private Real Estate	0.23%	0.00%	0.22%	0.02%	10.58%	6.42%
Public Real Estate	0.11%	0.04%	0.07%	-0.07%	-0.95%	-4.60%
Mixed Credit	0.07%	0.01%	0.06%	-1.16%	4.10%	3.15%
Other Opportunistic	0.07%	-0.01%	0.08%	0.59%	7.39%	4.69%
Private Debt	0.05%	0.00%	0.04%	-0.01%	5.79%	5.11%
Global Public Equity	0.04%	0.03%	0.01%	0.43%	11.41%	11.38%
GTAA	0.04%	-0.01%	0.05%	0.19%	4.95%	4.69%
Emerging Markets Debt	0.02%	0.00%	0.03%	0.22%	3.73%	3.18%
Hedge Funds (Non-PA)	0.00%	0.02%	-0.03%	-0.82%	3.54%	4.69%
Cash and Short Duration (Net)	-0.01%	-0.01%	0.00%	0.45%	1.04%	1.04%
World Infrastructure	-0.01%	0.00%	-0.01%	-0.21%	-0.75%	-0.18%
Equity Options	-0.02%	-0.01%	-0.01%	0.42%	4.94%	5.14%
Core Fixed Income	-0.03%	0.02%	-0.05%	-0.10%	-1.48%	-0.98%
Private Equity	-0.55%	0.02%	-0.56%	0.03%	14.42%	23.10%
Overlay Collateral	0.71%	0.00%	0.71%	n/a	2.18%	1.33%
Portable Alpha Hedge Funds	0.63%	0.00%	0.63%	n/a	7.19%	1.33%
Ported Short Duration	0.02%	0.00%	0.02%	n/a	0.53%	1.33%
Ported Cash	0.05%	0.00%	0.05%	n/a	1.04%	1.33%
	Total Plan Excess Return	Allocation Effect	Selection Effect	Interaction / Other	RSIC Return	RSIC Policy Benchmark Return
FYTD Total	0.72%	0.10%	0.62%	0.00%	8.01%	7.29%

Attribution of Excess Returns^{1,3,4,7,10}

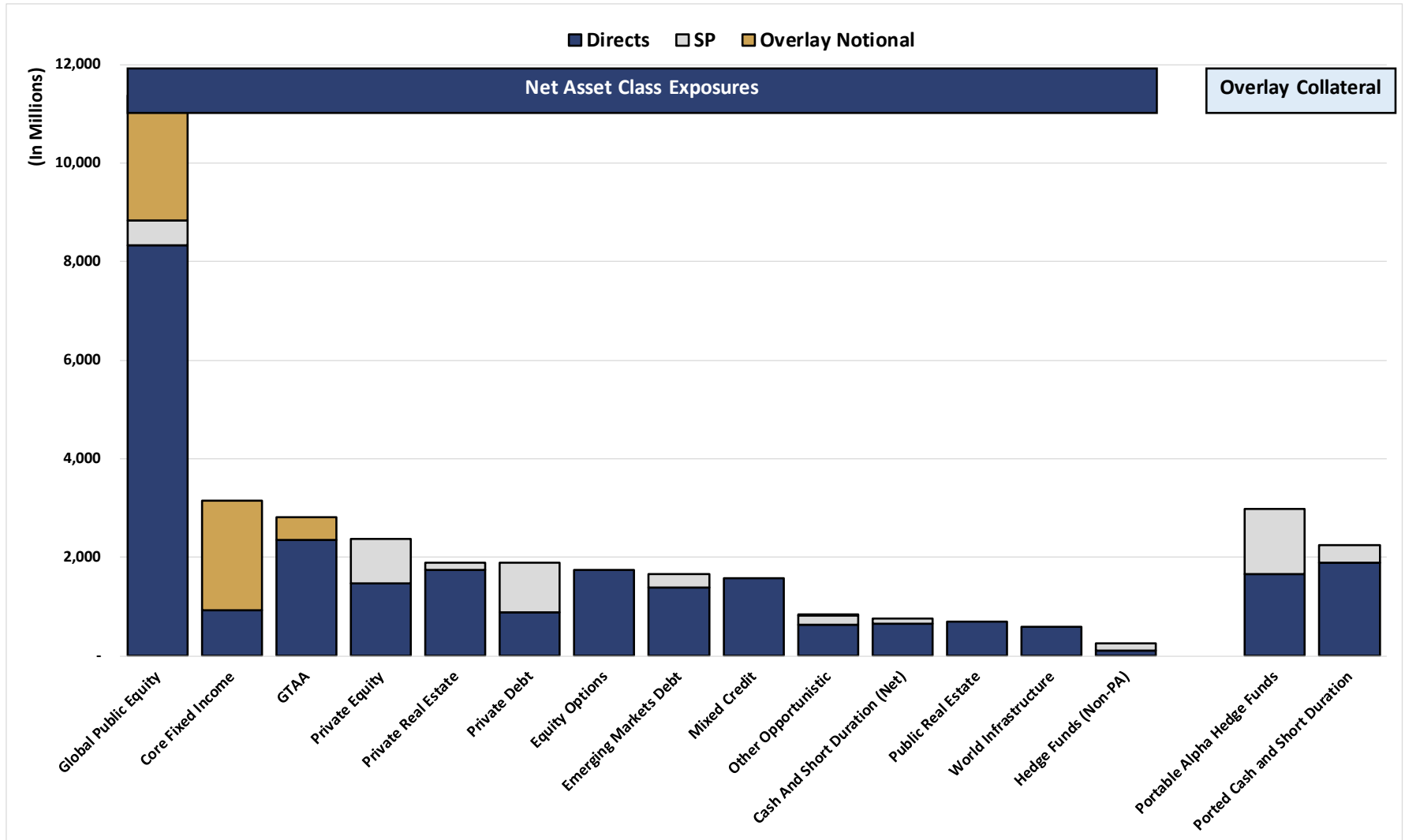
FYTD as of April 30, 2018



Appendix

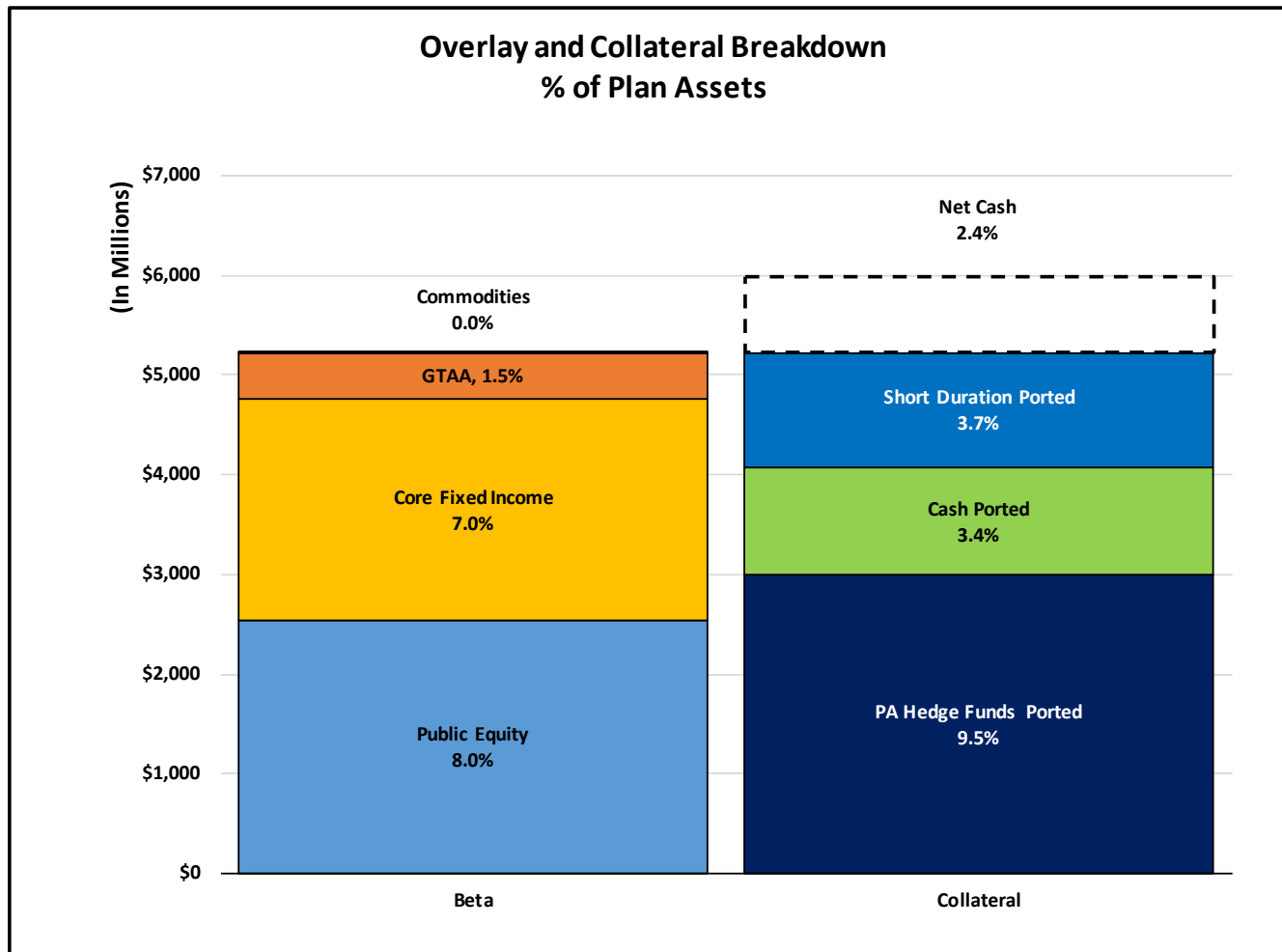
Asset Class Composition by Implementation⁴

As of April 30, 2018



Overlay Percentage by Asset Class⁶

As of April 30, 2018



Portfolio Exposures^{4,8}

As of April 30, 2018

Asset Allocation	Market Value as of 04/30/18	Overlay Exposures	Net Position	% of Total Plan	Policy Targets	Difference	Allowable Ranges	SIOP Compliance
Global Equity	12,941		15,480	49.0%	47.0%	2.0%	31% - 59%	YES
Global Public Equity	8,831	2,539	11,370	36.0%	34.5%	1.5%	22% - 50%	YES
Equity Options	1,734		1,734	5.5%	5.0%	0.5%	5% - 9%	YES
Private Equity	2,376	0	2,376	7.5%	7.5%	0.0%	5% - 13%	YES
Real Assets	3,182		3,182	10.1%	10.0%	0.1%	7% - 17%	YES
Private Real Estate	1,891		1,891	6.0%	6.0%	0.0%	0% - 13%	YES
Public Real Estate	695		695	2.2%	2.0%	0.2%	0% - 13%	YES
World Infrastructure	595		595	1.9%	2.0%	-0.1%	1% - 5%	YES
Opportunistic	3,410		3,882	12.3%	12.0%	0.3%	12% - 24%	YES
GTAA	2,343	471	2,814	8.9%	7.0%	1.9%	3% - 11%	YES
Hedge Funds (Non-PA)	246		246	0.8%	2.0%	-1.2%	0% - 8%	YES
Other Opportunistic	822	1	822	2.6%	3.0%	-0.4%	0% - 3%	YES
Diversified Credit	5,111		5,111	16.2%	18.0%	-1.8%	10% - 20%	YES
Mixed Credit	1,579		1,579	5.0%	7.0%	-2.0%	0% - 8%	YES
Emerging Markets Debt	1,650		1,650	5.2%	5.0%	0.2%	2% - 6%	YES
Private Debt	1,882		1,882	6.0%	6.0%	0.0%	3% - 11%	YES
Conservative Fixed Income	3,933		3,912	12.4%	13.0%	-0.6%	4% - 24%	YES
Core Fixed Income	931	2,215	3,146	10.0%	10.0%	0.0%	6% - 20%	YES
Cash and Short Duration (Net)	3,002	-2,236	766	2.4%	3.0%	-0.6%	0% - 7%	YES
Portable Alpha Hedge Funds	2,990	-2,990	0	9.5%*	n/a	n/a	0% - 12%	YES
Total Plan	\$31,567	-	\$31,567	100.0%				
Total Hedge Funds	3,457	-	\$3,457	11.0%	n/a	n/a	0% - 20%	YES
Total Private Markets	6,149	-	\$6,149	19.5%	n/a	n/a	14% - 25%	YES

Total Hedge Fund exposure: 11.0% and consisted of: 9.5% Portable Alpha Hedge Funds, 0.7% to a hedge fund in Mixed Credit, and 0.8% Hedge Funds (Non-PA). *Portable Alpha Hedge Funds are expressed as gross exposure but employed in conjunction with the Overlay Program and are offset when looking at total plan market value.

Footnotes & Disclosures

Footnotes

1. Represents asset class benchmarks as of reporting date. Benchmarks for asset classes may have changed over time.
2. Benefit payments are net of Plan contributions and disbursements.
3. "Cash" market value is the aggregate cash held at the custodian, Russell Investments, and strategic partnerships. Cash performance is estimated using the BofA Merrill Lynch 3-Month T-Bill rate.
4. Asset class exposures and returns include blended physical and synthetic returns and current notional values (EM Debt, GTAA, Global Public Equity, Real Estate, Core Fixed Income, Private Equity, and Commodities).
5. Performance contribution methodology: Contribution is calculated by taking the sum of the [beginning weight] X [monthly return].
6. Source: Russell Investments; Net notional exposure.
7. Allocation Effect: $[\text{Asset Class Weight} - \text{Policy Weight}] * [\text{Benchmark Return} - \text{Plan Policy Benchmark}]$
Selection Effect: $[\text{Asset Class Return} - \text{Policy Benchmark Return}] * \text{Asset Class Weight in Plan}$
8. The target weights to Private Equity, Private Debt, and Private Real Estate will be equal to their actual weights, reported by the custodial bank, as of the prior month end. When flows have occurred in the asset classes, flow adjusted weights are used to more accurately reflect the impact of the asset class weights. In the case of Private Equity, the use of the flow adjusted weight will affect the target allocation to Public Equity, such that the combined target weight of both asset classes shall equal 42% of the Plan. For Private Debt, the use of the flow adjusted weight will affect the target allocation to Mixed Credit, such that the combined target weight of both asset classes shall equal 13% of the Plan. For Private Real Estate, the use of the flow adjusted weight will affect the target allocation to Public Real Estate, such that the combined target weight of both asset classes shall equal 8% of the Plan.
9. Policy Ending Value is an estimate of the Plan NAV had it earned the Policy Benchmark return.
10. Collateral held to support the overlay program represents opportunity cost associated with financing the overlay program. The Overlay collateral consists of Ported Cash, Ported Short Duration, and Portable Alpha Hedge Funds. The cost of holding these assets is proxied using 3 Month LIBOR. This benchmark is not a component of the Policy benchmark.
11. RSIC Peer Universe is Bank of New York Public Plans Greater than \$5 Billion. The universe includes fund returns that are gross of invoiced fees. The RSIC percentile rank represents the RSIC return gross of invoiced fees.

Disclosures

- Returns are provided by BNY Mellon and are time-weighted, total return calculations. Net of fee performance is calculated and presented after the deduction of fees and expenses. Periods greater than one year are annualized. Past performance is no guarantee of future results. Policy benchmark is the blend of asset class policy benchmarks using policy weights. Asset class benchmarks and policy weights are reviewed annually by the Commission's consultant and adopted by the Commission and have changed over time. The policy benchmark return history represents a blend of these past policies.
- Overlay allocation detail is provided by Russell Investments.
- This report was compiled by the staff of the South Carolina Retirement System Investment Commission and has not been reviewed, approved or verified by the external investment managers. No information contained herein should be used to calculate returns or compare multiple funds, including private equity funds.
- Effective October 1, 2005, the State Retirement System Preservation and Investment Reform Act ("Act 153") established the Commission and devolved fiduciary responsibility for investment and management of the assets of the South Carolina Retirement Systems upon RSIC.
- Allocation / exposure percentages might not add up to totals due to rounding.

Footnotes & Disclosures

Benchmarks

- **Global Public Equity Blend:**
7/2016 – Present: MSCI All-Country World Investable Markets Index (net of dividends)
Prior to 7/2016: MSCI All-Country World Index (net of dividends)
- **Equity Options Strategies:** CBOE S&P Buy Write Index (BXM)
- **Private Equity Blend:** 80% Russell 3000 Index on a 3-month lag / 20% MSCI EAFE (net of dividends) on a 3-month lag Plus 300 basis points
- **Core Fixed Income:** Bloomberg Barclays US Aggregate Bond Index
- **Emerging Market Debt:** 50% JP Morgan EMBI Global Diversified (US Dollar) / 50% JP Morgan GBIEM Global Diversified (Local)
- **Private Debt :** S&P/LSTA Leveraged Loan Index + 150 basis points on a 3-month lag
- **Mixed Credit Blend:**
7/2016 – Present: 1/2 Bloomberg Barclays US Corporate High Yield 2% Issuer Capped Bond Index
 1/2 S&P/LSTA Leveraged Loan Index
Prior to 7/2016: 1/3 Bloomberg Barclays US Corporate High Yield 2% Issuer Capped Bond Index
 1/3 S&P/LSTA Leveraged Loan Index
 1/3 Bloomberg Barclays US Mortgage Backed Securities (MBS) Index
- **GTAA Blend:**
7/2016 – Present: 50% MSCI World Index (net of dividends)
 50% Bloomberg Barclays US Aggregate Bond Index
Prior to 7/2016: 50% MSCI World Index (net of dividends)
 50% Citi World Government Bond Index (WGBI)
- **Other Opportunistic:**
7/2016 – Present: 50% MSCI World Index (net of dividends)
 50% Bloomberg Barclays US Aggregate Bond Index
- **Non PA Hedge Funds**
7/2016 – Present: 50% MSCI World Index (net of dividends)
 50% Bloomberg Barclays US Aggregate Bond Index
- **Private Real Estate:** NCREIF Open-end Diversified Core (ODCE) Index + 75 basis points
- **Public Real Estate:** FTSE NAREIT Equity REITs Index
- **Infrastructure:** Dow Jones Brookfield Global Infrastructure Index
- **Cash & Short Duration:** ICE BofA Merrill Lynch 3-Month US Treasury Bill Index

FUND EVALUATION REPORT

South Carolina Retirement System

Performance Report
As of March 31, 2018



Confidentiality: This evaluation is prepared by Meketa Investment Group, Inc. for the exclusive use of the South Carolina Retirement System. This evaluation is not to be used for any other purpose or by any parties other than the System, their Board, employees, agents, attorneys, and/or consultants. No other parties are authorized to review or utilize the information contained herein without expressed written consent.

M E K E T A I N V E S T M E N T G R O U P

BOSTON
MASSACHUSETTS

CHICAGO
ILLINOIS

MIAMI
FLORIDA

PORTLAND
OREGON

SAN DIEGO
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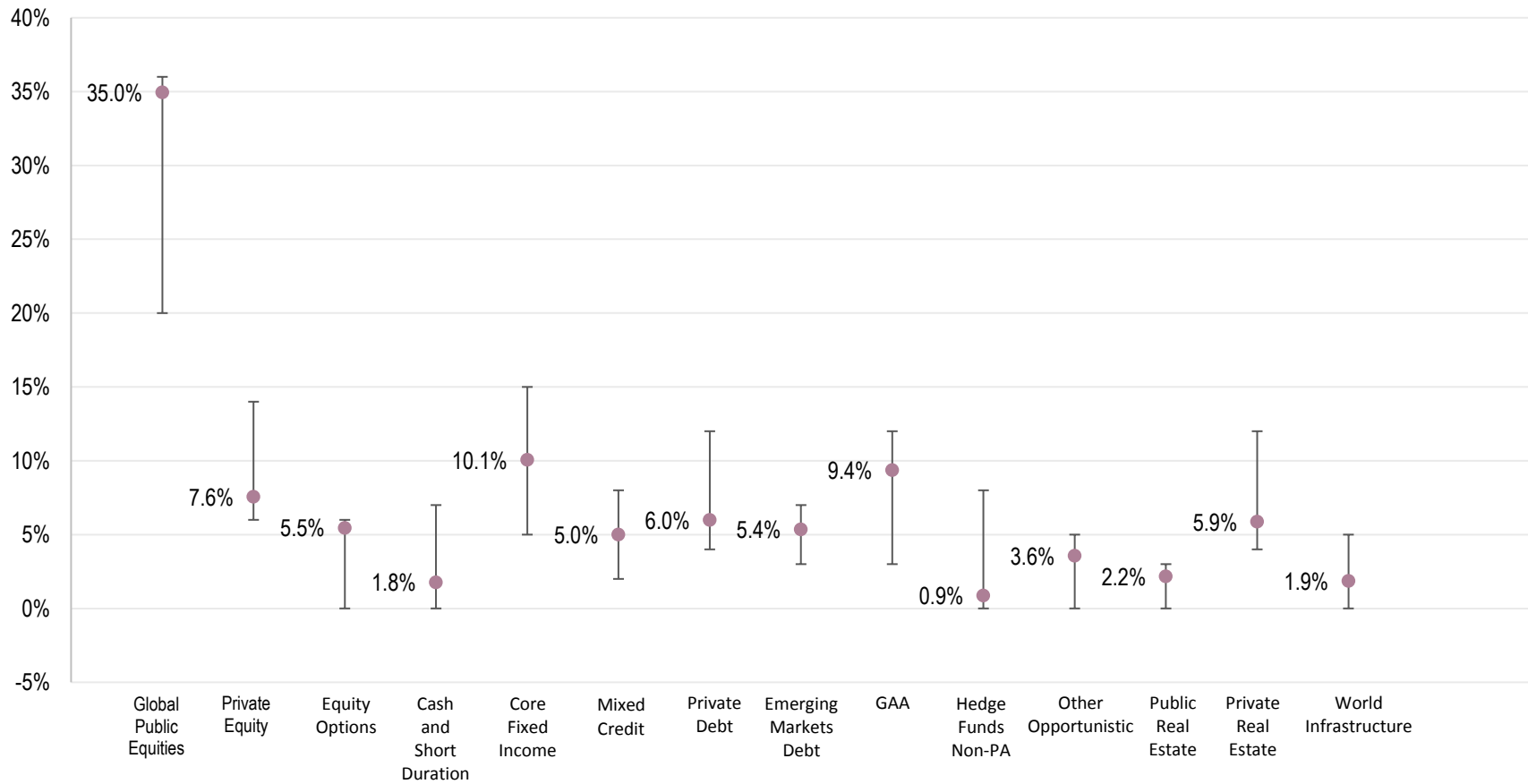
Allocation vs. Targets and Policy

	MV at 3/31/18	Overlay Exposures	Net Position	% of Total System	% of Total System (Net)	FY 17-18 (b) Policy Targets	Allowable Ranges	SIOP Compliance?
Total System	31,464,210,357	-	31,464,210,357	100%	100%	100%	-	-
Equity	12,887,925,350	2,214,997,819	15,102,923,168	41%	48%	47%	42-52%	Yes
Global Equity	8,785,065,624	2,214,997,819	11,000,063,443	28%	35%	34%	20-36%	Yes
Private Equity	2,382,420,410	-	2,382,420,410	8%	8%	8%	6-14%	Yes
Equity Options	1,720,439,315	-	1,720,439,315	5%	5%	5%	0-6%	Yes
Conservative Fixed Income	3,582,826,862	144,272,787	3,727,099,649	11%	12%	13%	10-16%	Yes
Cash and Short Duration	2,644,320,586	(2,085,964,032)	558,356,554	8%	2%	3%	0-7%	Yes
Core Fixed Income	938,506,276	2,230,236,819	3,168,743,096	3%	10%	10%	5-15%	Yes
Diversified Credit	5,152,203,439	-	5,152,203,439	16%	16%	18%	15-21%	Yes
Mixed Credit	1,576,382,816	-	1,576,382,816	5%	5%	7%	2-8%	Yes
Private Debt	1,887,344,100	-	1,887,344,100	6%	6%	6%	4-12%	Yes
Emerging Markets Debt	1,688,476,522	-	1,688,476,522	5%	5%	5%	3-7%	Yes
Opportunistic	3,739,054,211	619,154,001	4,358,208,212	12%	14%	12%	9-19%	Yes
GAA	2,334,271,200	617,948,039	2,952,219,239	7%	9%	7%	3-12%	Yes
Hedge Funds Non-PA	280,398,012	-	280,398,012	1%	1%	2%	0-8%	Yes
Other Opportunistic	1,124,385,000	1,205,962	1,125,590,962	4%	4%	3%	0-5%	Yes
Real Assets	3,123,775,890	-	3,123,775,890	10%	10%	10%	8-14%	Yes
Public Real Estate	685,083,525	-	685,083,525	2%	2%	2%	0-3%	Yes
Private Real Estate	1,851,096,491	-	1,851,096,491	6%	6%	6%	4-12%	Yes
World Infrastructure	587,595,874	-	587,595,874	2%	2%	2%	0-5%	Yes
Hedge Funds PA	2,978,424,606	(2,978,424,606)	-	9%	0%	NA	0-12%	Yes

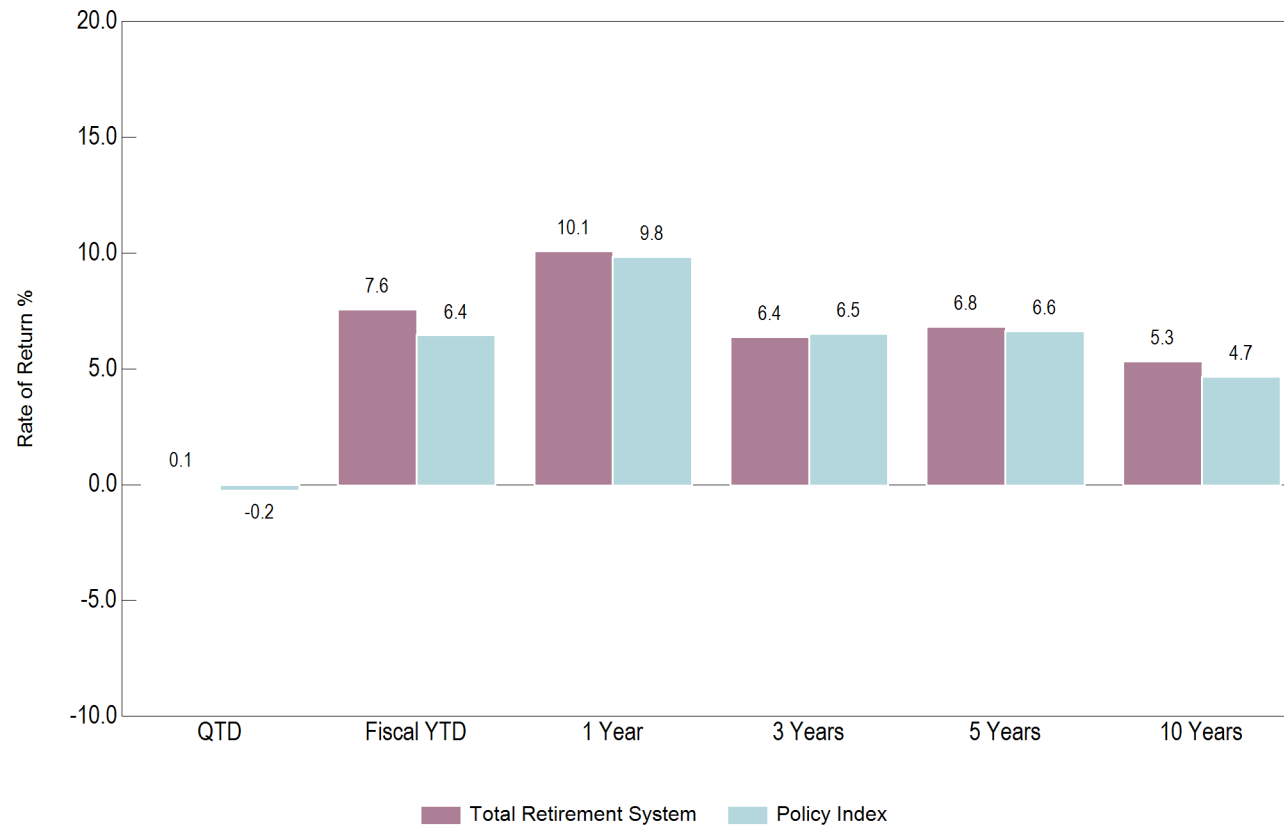
Includes cash in the Russell Overlay separate account.
Percentages may not sum to 100% due to rounding.



Actual vs. Policy Ranges: (Including Overlay)



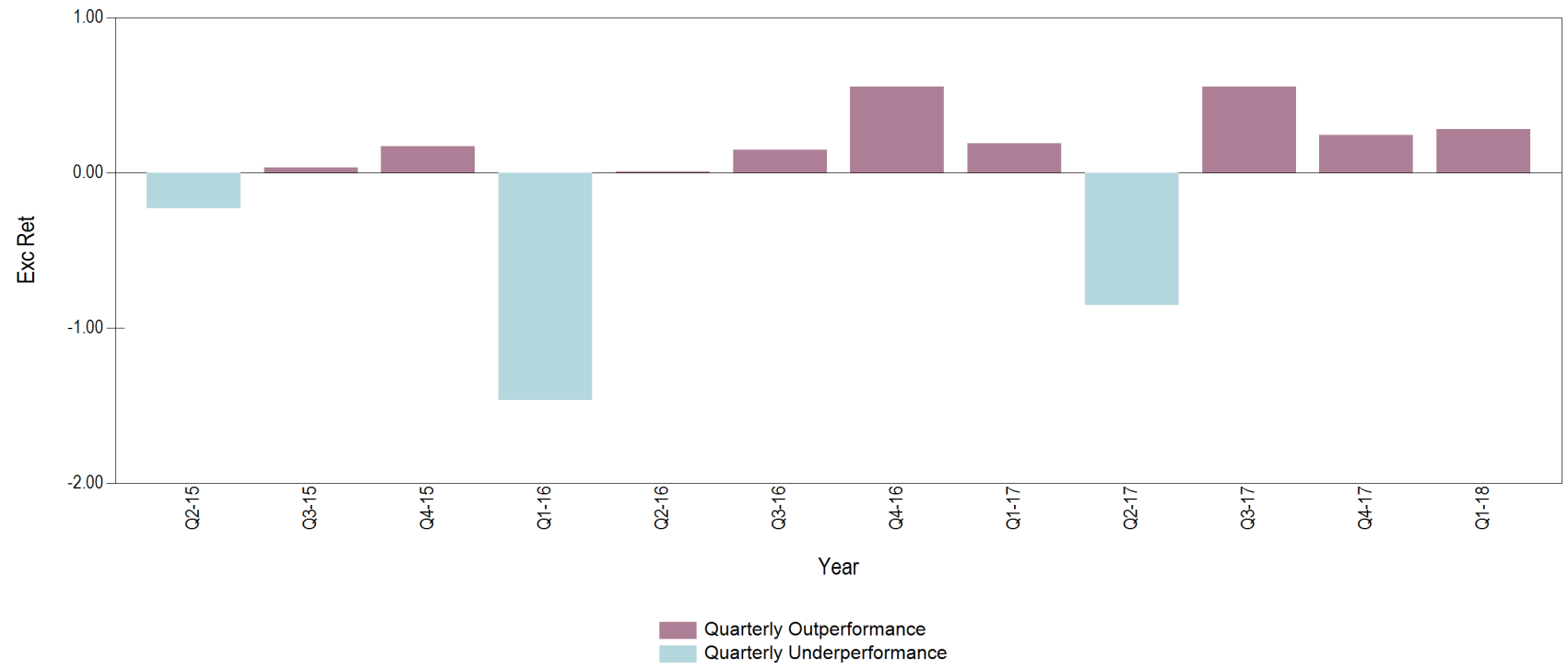
**Net Return Summary
Ending March 31, 2018**



Returns for periods greater than one year are annualized.



Quarterly Excess Performance vs. Policy Benchmark



South Carolina Retirement System Investment Commission

Total Retirement System

As of March 31, 2018

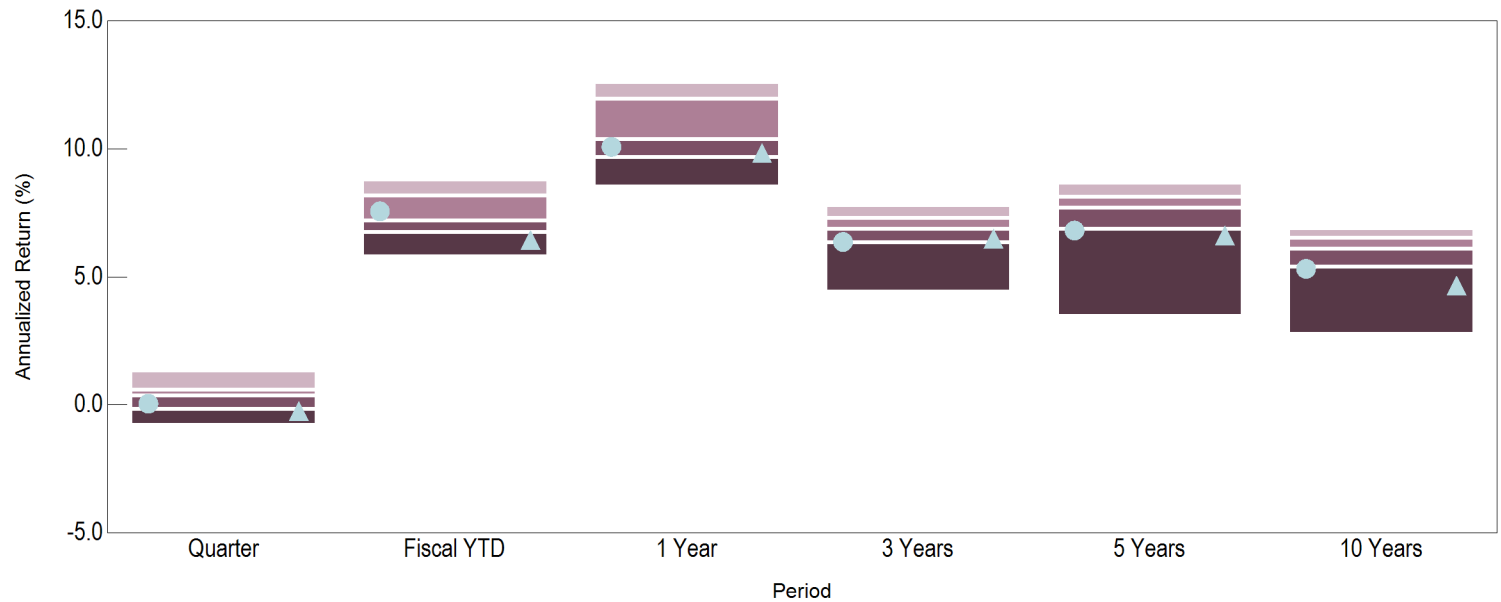
Net Asset Class Performance Summary

	Market Value (\$)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Retirement System	31,464,210,357	100.0	0.1	7.6	10.1	6.4	6.8	5.3	6.4	Jul-94
<i>Policy Index</i>			-0.2	6.4	9.8	6.5	6.6	4.7	5.8	Jul-94
Global Public Equities	8,785,065,624	27.9	-0.4	11.4	16.6	8.5	8.6	6.5	4.8	Jun-99
<i>MSCI ACWI IMI Net USD</i>			-0.9	10.3	15.0	8.3	9.3	5.9	5.6	Jun-99
Private Equity	2,382,420,410	7.6	5.5	13.5	15.6	11.9	13.4	9.3	7.8	Apr-07
<i>80% Russell 3000/20% MSCI EAFE + 300 basis points on a 3-month lag</i>			6.1	16.9	24.9	13.5	17.1	13.4	15.2	Apr-07
Equity Options	1,720,439,315	5.5	-2.3	4.2	6.9	--	--	--	8.9	Jul-16
<i>CBOE S&P 500 BuyWrite USD</i>			-1.6	3.8	6.9	7.2	7.4	5.1	9.0	Jul-16
Short Duration	1,154,358,306	3.7	-0.1	0.5	1.2	1.4	1.3	--	1.7	Mar-10
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>			-0.2	-0.1	0.2	0.7	0.8	1.6	1.1	Mar-10
Cash and Overlay	1,489,962,280	4.7	0.2	0.4	0.5	-0.2	0.0	0.1	1.1	Oct-05
<i>ICE BofAML 91 Days T-Bills TR</i>			0.4	0.9	1.1	0.5	0.3	0.3	1.2	Oct-05
Core Fixed Income	938,506,276	3.0	-1.7	0.2	1.8	1.9	2.1	4.1	6.0	Jul-94
<i>BBgBarc US Aggregate TR</i>			-1.5	-0.2	1.2	1.2	1.8	3.6	5.5	Jul-94
Mixed Credit	1,576,382,816	5.0	0.6	4.0	4.8	3.9	3.7	--	6.4	May-08
<i>50% S&P LSTA Leveraged Loan Index/50% Barclays High Yield Index</i>			0.3	2.6	4.1	4.9	4.4	6.3	6.1	May-08
Private Debt	1,887,344,100	6.0	0.8	5.1	4.8	5.2	7.5	--	7.2	Jun-08
<i>S&P LSTA Leveraged Loan Index + 150 basis points on a 3-month lag</i>			1.3	3.9	5.6	5.9	5.5	5.4	5.2	Jun-08
Emerging Market Debt	1,688,476,522	5.4	2.1	6.1	9.5	7.3	2.7	--	6.2	Jul-09
<i>50% JP Morgan EMBI Global Diversified (USD)/50% JP Morgan EMBI Global Diversified</i>			1.3	5.5	8.6	5.7	2.0	5.5	6.1	Jul-09
GAA	2,334,271,200	7.4	-0.6	5.1	6.7	3.5	3.9	4.6	5.2	Aug-07
<i>50% MSCI World Index/50% Barclays Aggregate Bond Index</i>			-1.3	4.5	7.3	4.7	5.8	5.1	4.8	Aug-07
Other Opportunistic	1,124,385,000	3.6	0.0	5.2	--	--	--	--	5.2	Jul-17
<i>50% MSCI World Index/50% Barclays Aggregate Bond Index</i>			-1.3	4.5	7.3	4.7	5.8	5.1	4.5	Jul-17
Hedge Funds Non Portable Alpha	280,398,012	0.9	0.0	2.9	2.8	1.0	2.8	2.6	2.5	Aug-07
<i>50% MSCI World Index/50% Barclays Aggregate Bond Index</i>			-1.3	4.5	7.3	4.7	5.8	5.1	4.8	Aug-07
Hedge Funds Portable Alpha	2,978,424,606	9.5	1.2	6.7	5.3	3.2	7.2	6.8	8.6	Jul-07
<i>3-Month Libor Total Return USD</i>			0.5	1.2	1.5	0.9	0.7	0.7	1.0	Jul-07
Public Real Estate	685,083,525	2.2	-7.6	-2.3	-1.2	--	--	--	-2.8	Jul-16
<i>FTSE NAREIT Equity REIT</i>			-8.2	-5.9	-4.5	1.1	5.9	6.4	-4.4	Jul-16
Private Real Estate	1,851,096,491	5.9	2.7	8.9	11.6	11.5	14.5	--	7.1	Jul-08
<i>NCREIF ODCE + 75 bps</i>			2.2	6.4	8.4	11.2	12.3	--	--	Jul-08
World Infrastructure	587,595,874	1.9	-6.0	-2.0	1.2	--	--	--	2.2	Jun-16
<i>DJ Brookfield Global Infrastructure</i>			-5.3	-1.6	2.0	2.2	5.7	7.1	6.2	Jun-16

Returns are based on values obtained from BNYM.
Returns for periods greater than one year are annualized.



InvestorForce Public DB > \$5B Net Return Comparison
Ending March 31, 2018



	Quarter		Fiscal YTD		1 Year		3 Years		5 Years		10 Years	
5th Percentile	1.3		8.8		12.6		7.8		8.7		6.9	
25th Percentile	0.6		8.2		12.0		7.3		8.1		6.5	
Median	0.4		7.2		10.4		6.9		7.7		6.1	
75th Percentile	-0.1		6.8		9.7		6.4		6.9		5.4	
95th Percentile	-0.8		5.8		8.6		4.4		3.5		2.8	
# of Portfolios	24		24		24		24		24		22	
● Total Retirement System	0.1	(68)	7.6	(34)	10.1	(68)	6.4	(76)	6.8	(84)	5.3	(83)
▲ Policy Index	-0.2	(77)	6.4	(88)	9.8	(72)	6.5	(65)	6.6	(88)	4.7	(91)



South Carolina Retirement System Investment Commission

Total Retirement System

As of March 31, 2018

Statistics Summary
5 Years Ending March 31, 2018

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Total Retirement System	6.8%	4.9%	0.2	1.0	1.3	1.1%
Policy Index	6.6%	4.9%	--	1.0	1.3	0.0%
Global Public Equities	8.6%	10.3%	-0.5	1.0	0.8	1.5%
MSCI ACWI IMI Net USD	9.3%	10.3%	--	1.0	0.9	0.0%
Private Equity	13.4%	4.0%	-0.4	0.0	3.2	9.9%
80% Russell 3000/20% MSCI EAFE + 300 basis points on a 3-month lag	17.1%	9.4%	--	1.0	1.8	0.0%
Short Duration	1.3%	0.6%	1.5	0.8	1.6	0.4%
BBgBarc US Govt/Credit 1-3 Yr. TR	0.8%	0.7%	--	1.0	0.6	0.0%
Cash and Overlay	0.0%	0.7%	-0.5	0.4	-0.5	0.7%
ICE BofAML 91 Days T-Bills TR	0.3%	0.1%	--	1.0	0.0	0.0%
Core Fixed Income	2.1%	3.0%	0.5	1.0	0.6	0.6%
BBgBarc US Aggregate TR	1.8%	2.9%	--	1.0	0.5	0.0%
Mixed Credit	3.7%	3.4%	-0.5	1.1	1.0	1.5%
50% S&P LSTA Leveraged Loan Index/50% Barclays High Yield Index	4.4%	2.8%	--	1.0	1.4	0.0%
Private Debt	7.5%	3.3%	0.6	0.5	2.2	3.4%
S&P LSTA Leveraged Loan Index + 150 basis points on a 3-month lag	5.5%	2.4%	--	1.0	2.2	0.0%
Emerging Market Debt	2.7%	8.8%	0.4	1.0	0.3	1.4%
50% JP Morgan EMBI Global Diversified (USD)/50% JP Morgan EMBI Global Diversified	2.0%	8.3%	--	1.0	0.2	0.0%
GAA	3.9%	6.6%	-0.7	1.1	0.5	2.8%
50% MSCI World Index/50% Barclays Aggregate Bond Index	5.8%	5.4%	--	1.0	1.0	0.0%
Hedge Funds Non Portable Alpha	2.8%	3.3%	-0.7	0.3	0.7	4.6%
50% MSCI World Index/50% Barclays Aggregate Bond Index	5.8%	5.4%	--	1.0	1.0	0.0%
Hedge Funds Portable Alpha	7.2%	4.3%	1.5	-2.2	1.6	4.4%
3-Month Libor Total Return USD	0.7%	0.1%	--	1.0	2.2	0.0%
Private Real Estate	14.5%	3.2%	0.4	0.1	4.4	5.4%
NCREIF ODCE + 75 bps	12.3%	4.7%	--	1.0	2.5	0.0%



Disclosure Appendix

- Item 1. Fiscal year begins July 1.
- Item 2. All returns are presented net of management fees.
- Item 3. Policy index performance is calculated by multiplying each asset class target weight by the performance of its respective benchmark.
- Item 4. As stipulated in the Statement of Investment Objectives and Policies, the target weights to Private Equity, Private Debt and Real Estate will be equal to their actual weights, reported by the custodial bank, as of the prior month end. In the case of Private Equity, the use of the actual weight will affect the target allocation to Global Equity. For example, in FY 17-18, the combined target weight of both of these asset classes shall equal 42% of the Plan. For Private Debt, the use of the actual weight will affect the target allocation to Mixed Credit, such that the combined target weight of both asset classes in FY 17-18 shall equal 13% of the Plan. For private market Real Estate, the use of the actual weight will affect the target allocation to public market Real Estate (REITs), such that the combined target weight of both asset classes in FY 17-18 shall equal 8% of the Plan
- Item 5. Overlay exposure is reported from Russell. Market values and performance reported by BNYM are reconciled to manager reported data for public markets strategies.
- Item 6. Total retirement system performance is calculated inclusive of the overlay investments. Individual asset class performance is reported by BNYM excluding synthetic exposure from the overlay program.
- Item 7. Asset classes with less than five years of historical returns are excluded from the risk statistics summary.





South Carolina Retirement System Investment Commission

Additional Clarifications to Benchmarks and Ranges

Background

- At the April 2018 Commission Meeting, asset class benchmarks and ranges were discussed and approved for the new asset allocation policy targets.
- Subsequent to the meeting, Staff and Meketa determined two sub-asset classes required additional clarification.
 - **TIPS:** no benchmark was assigned as it was included within the larger Core Bond allocation.
 - **Option-Based Equity Strategies:** no range was provided as it was included within the larger Global Equity allocation.

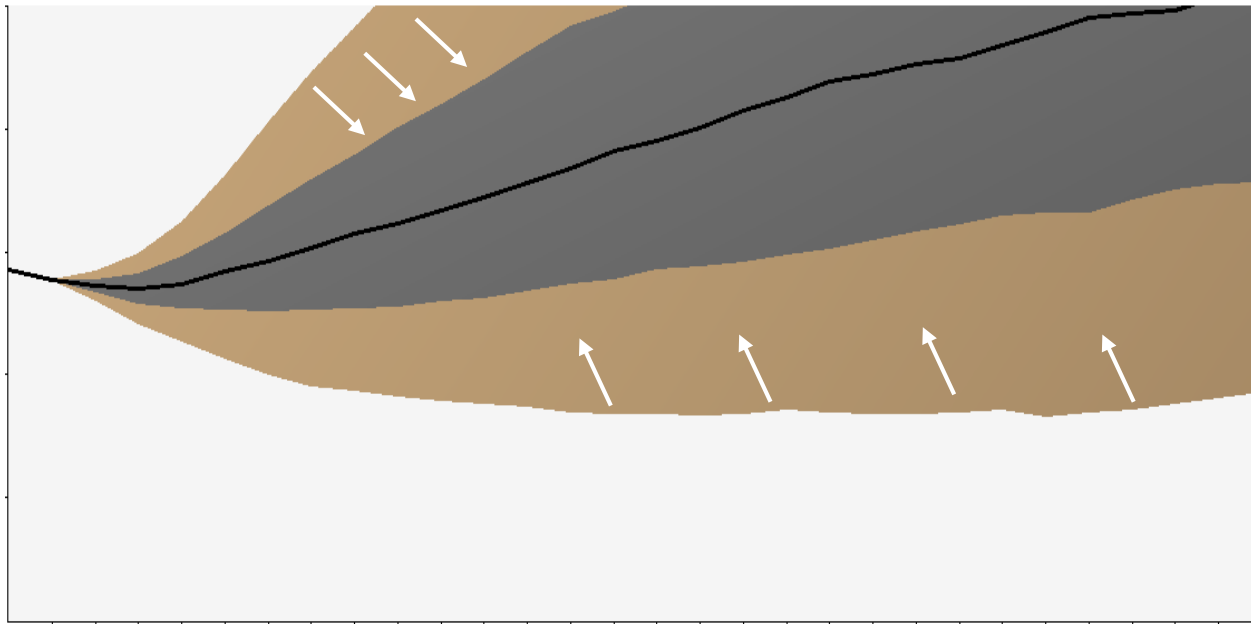
Recommendation

- We recommend TIPS be benchmarked against the Bloomberg Barclays US Treasury Inflation Notes TR Index Value Unhedged USD.
- We recommend Option-Based Equity Strategies (with a target of 7%) have an approved range of 5-9%.

Core Infrastructure

Why Infrastructure?

- Pension funds care about the impact of returns on funded status
 - A higher risk portfolio expands the range of outcomes (gold)
 - Pension funds benefit from investments that achieve their target (black) while reducing risk
- Offers more modest, predictable returns than traditional equities
 - Opportunity to narrow the range of outcomes without impairing expected return
 - Often have mechanisms to pass through changes in rates and inflation



- Proposed investment has 20-year fund life
- Infrastructure assets are typically very long-term assets
 - Ability to earn our assumed rate of return (most of which cash yield) at a modest level of risk for a longer period of time
- Pension funds have very long-term liabilities
- Fund life aligns long-term assets with long-term liabilities

Macquarie Super Core Infrastructure Fund

Ashli Aslin

Investing in Infrastructure

- **Regulated Utilities**

- Water & Sewage
- Electricity
- District Heating
- Gas Distribution

- **Transportation**

- Toll Roads
- Bridges
- Tunnels
- Airports
- Ports
- Rail

- **Midstream Energy**

- Transport
- Storage

- **Communications**

- Towers
- Cable/Fiber



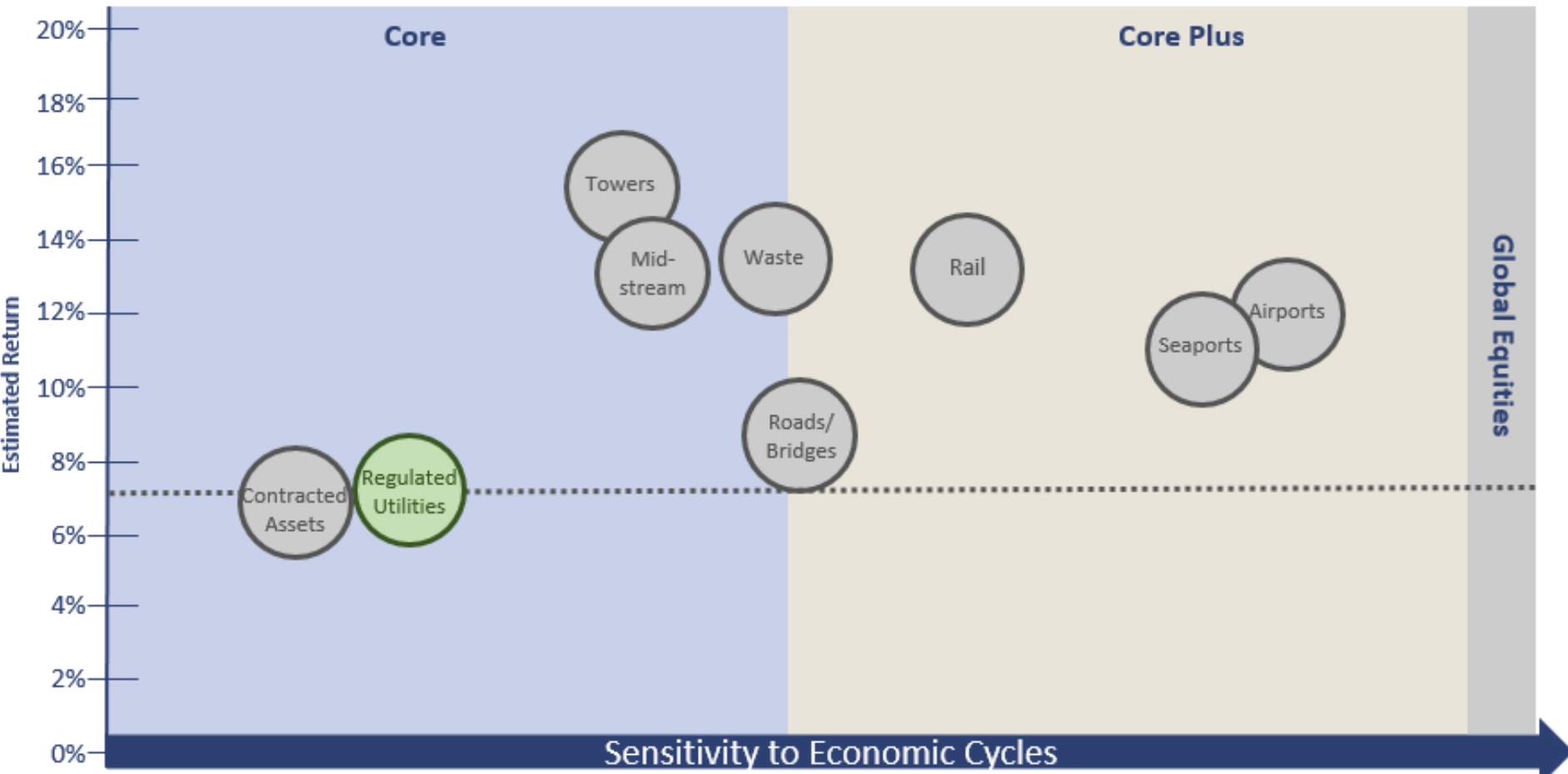
STATE OF SOUTH CAROLINA

Infrastructure Characteristics

- Monopolistic market
 - Exceedingly high barriers to entry
 - High cost of initial investment
 - Often regulated to prevent excessive prices
- Stability through economic cycles
 - Provides essential service to the community
- Long-term predictable cash flows
 - Regulation leads to a consistency of cash flows
 - Non-regulated assets governed by long-term contracts/concession agreements
- Inflation-linked
 - Cash flows generally have pass-throughs or escalators for inflation

Infrastructure Sectors

Stability through economic cycles provides downside protection and diversification benefits.



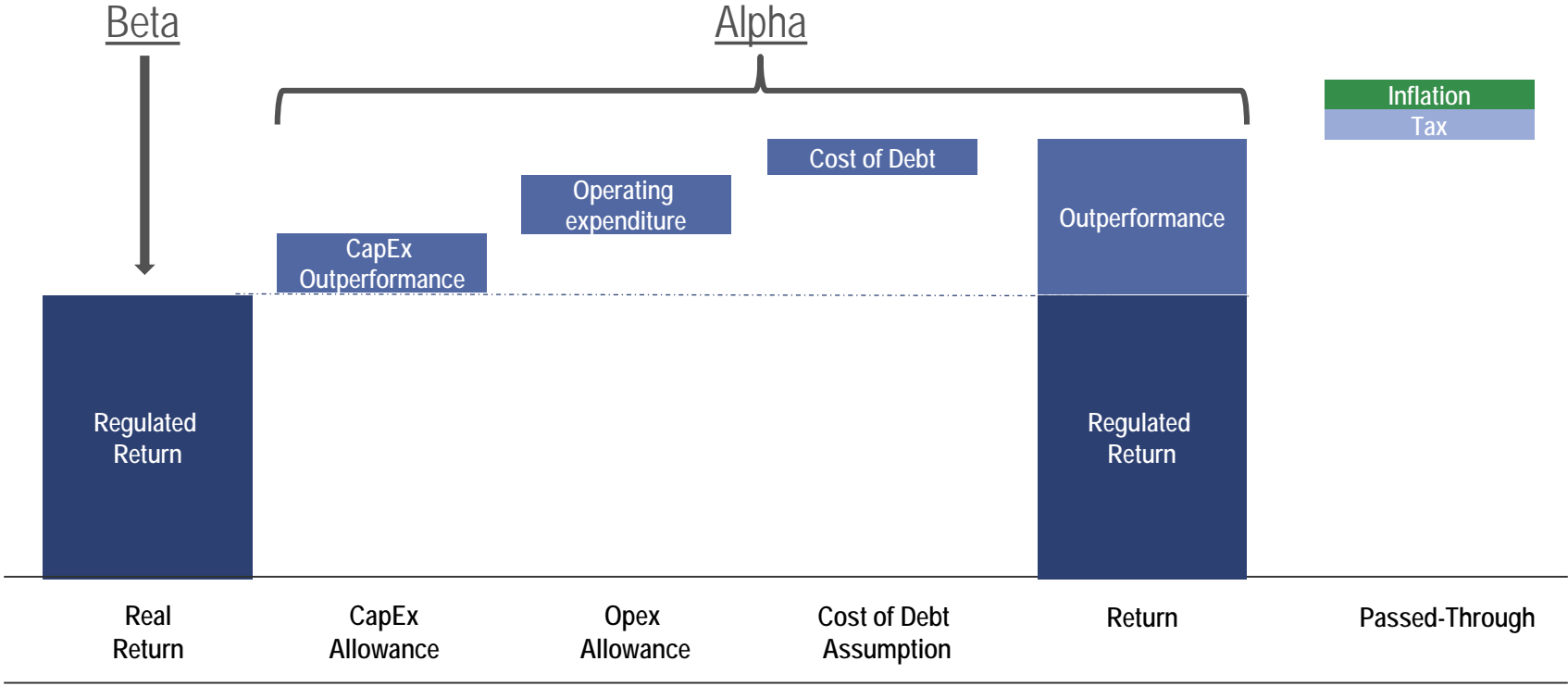
Source: RSIC/Macquarie

Benefits of Regulated Assets

- Regulator's goal is to efficiently provide an essential service to the community
- Regulation narrows the range of return outcomes
 - High enough to incentivize investment in the asset
 - Not so high that rates are unreasonable
- Returns that are linked to inflation
 - Rates charged to end-users are tied to inflation
 - Regulated return directly linked to interest rates (via market-based cost of debt)
- Significant cash income component

Regulated Assets – Value Creation Levers

The regulator sets an allowed return, which has multiple levers for achieving outperformance.



Macquarie Super Core – Investment Recommendation

- Recommending a €125 million commitment in Macquarie's Super Core Infrastructure Fund
- Fund Size: €2.5 billion for Series 1
- Return Target:
 - 7-8% net return expectation
 - 5% cash yield
- Management Fees:
 - 50bps on un-invested capital
 - No greater than 65bps on Fund NAV
- Performance Fee:
 - 20% of the YIELD over a 4% yield hurdle per year, after fees and expenses
- Fund Term:
 - 20 year term with two 2-year extensions
 - Investors can choose to extend beyond 20 years in 5-year increments

Macquarie Super Core – Rationale

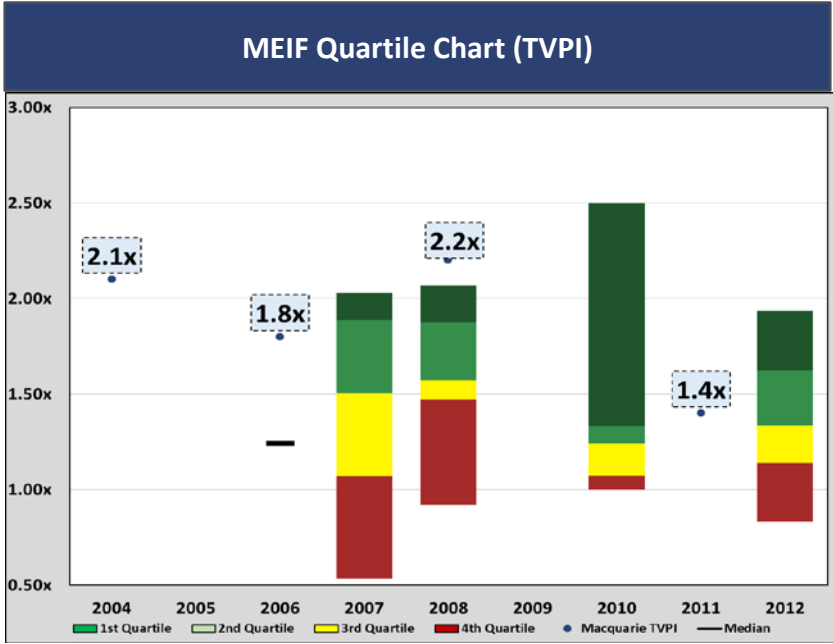
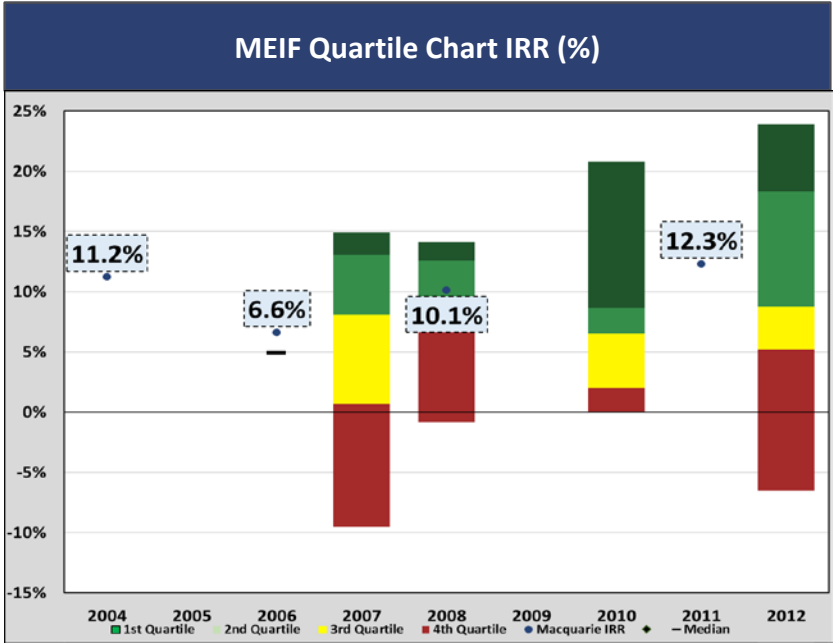
- Experienced team
 - Largest and most experienced infrastructure team
 - Extensive experience with regulated utilities
- Asset characteristics that match the goals of our infrastructure allocation
 - **Inflation Protection:** Regulated utilities have mechanisms to pass through changes in rates and inflation.
 - **Stable Yield:** Fund is expected to have a consistent yield of ~5%
 - **Diversification:** The essential nature of the regulated utilities leads to stability through the economic cycle with a low correlation to other risk exposures in the portfolio.
 - **Return:** The net return expectation of 7-8% is in line with the return expectations for core assets
- Disciplined Approach to Core Infrastructure
 - Target Asset List
 - Performance fee tied to cash distribution

Macquarie Super Core – Considerations

- Regulatory risk
 - Mitigants:
 - Diversification across geographies and regulatory authorities
 - Long fund life that spans several regulatory cycles
- Returns in a rising rate environment
 - Mitigants:
 - Impact on discount rates used in valuations
 - Impact on operational cash flows from asset financing
 - Regulatory returns increase as rates increase
- Limited liquidity options
 - Mitigants:
 - Periodic structured secondary sales
 - LPs can sell shares on the secondary market any time
 - Cash distributions provide liquidity
- Allocation policy
 - Mitigant:
 - Limited overlap due to strategy differences

Macquarie Europe Infrastructure (MEIF) Fund Performance

€	Vintage	Gross (€) IRR	Gross (€) Multiple	Net (€) IRR	Net (€) Multiple
MEIF1	2004	15.0%	2.6x	11.2%	2.1x
MEIF2	2006	8.4%	2.0x	6.6%	1.8x
MEIF3	2008	13.4%	2.6x	10.1%	2.2x
MEIF4	2011	16.2%	1.5x	12.3%	1.4x
MEIF5	2015		n.m.		



Macquarie has invested over €13 billion across 11 utility assets with a combined gross IRR of 12.4%, 1.8X gross multiple, and an annual yield of 6.5%.

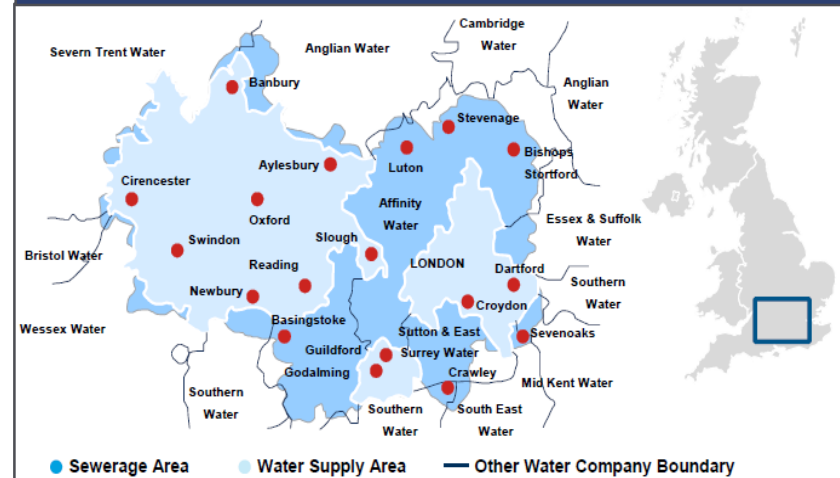
Returns as of December 31, 2017

Thames Water – Overview

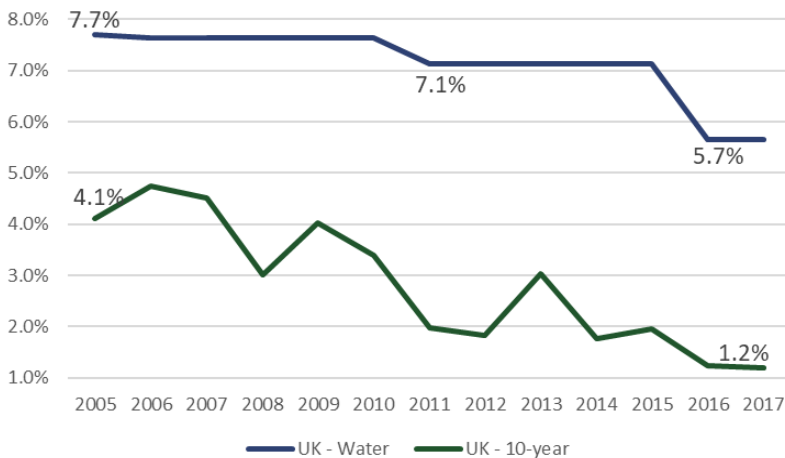
Asset Profile

- With a service area of 5,000 miles, Thames serves 25% of the population of England and Wales, making it the UK's largest water and sewer company.
- Thames Water treats and supplies 2.6 billion liters of water per day to 9 million customers in London and Thames Valley.
- The company transports and treats 4.6 billion liters of sewage for 15 million customers.
- Third cheapest provider, with customers paying an average of **£1.03 per day**.

Operational Area



UK Water – Regulated Return



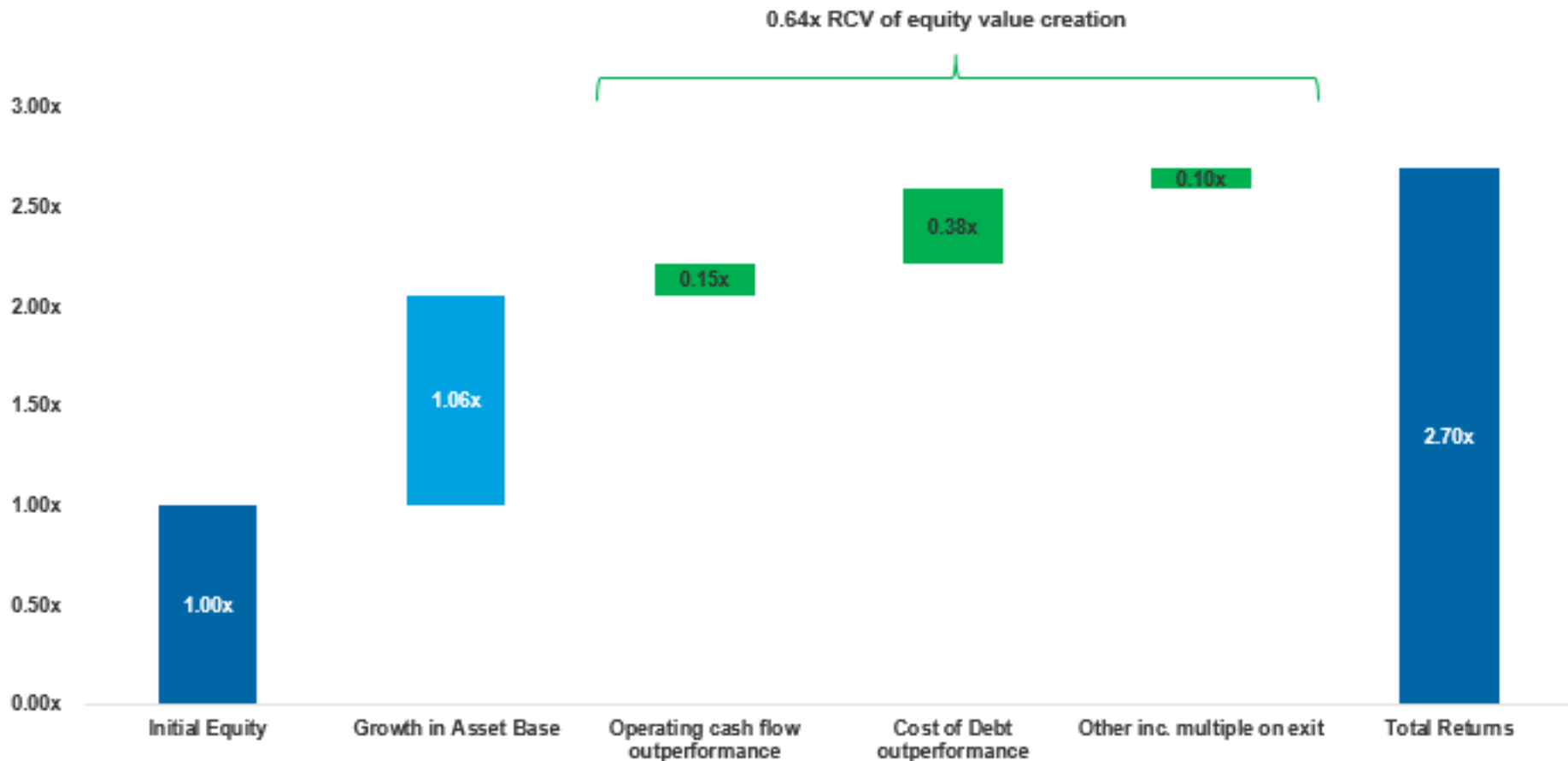
Key Metrics

Investment Period	Dec 2006-May 2017
MIRACo Ownership	47.2%
MIRACo Equity	€1.6 billion
MIRACo IRR	12%
Asset Base	£13 billion
Water Treatment Works	98
Pumping Stations	308
Clean Water Service Reservoirs	235
Sewerage Treatment Works	351

Source: Macquarie

Thames Water – Value Bridge

The value bridge below outlines the total returns from Macquarie's investment in Thames Water, attributing exit price and distributions to performance this is over the allowable regulatory return:

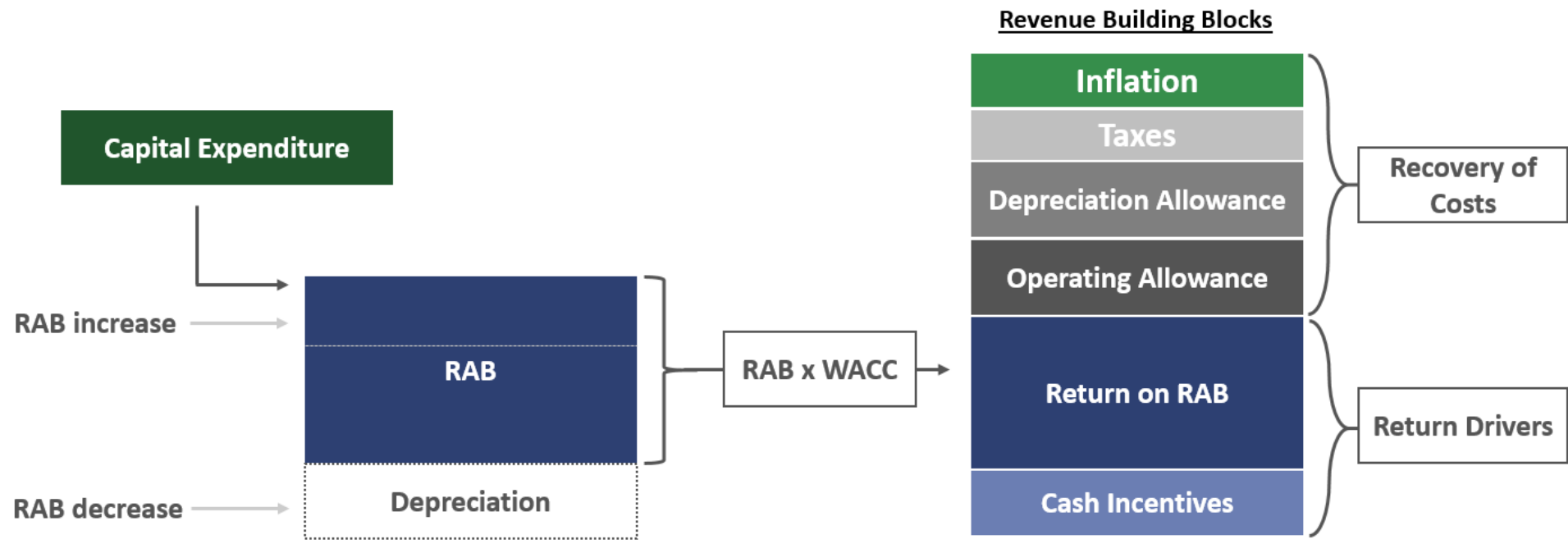


Macquarie Super Core – Investment Recommendation

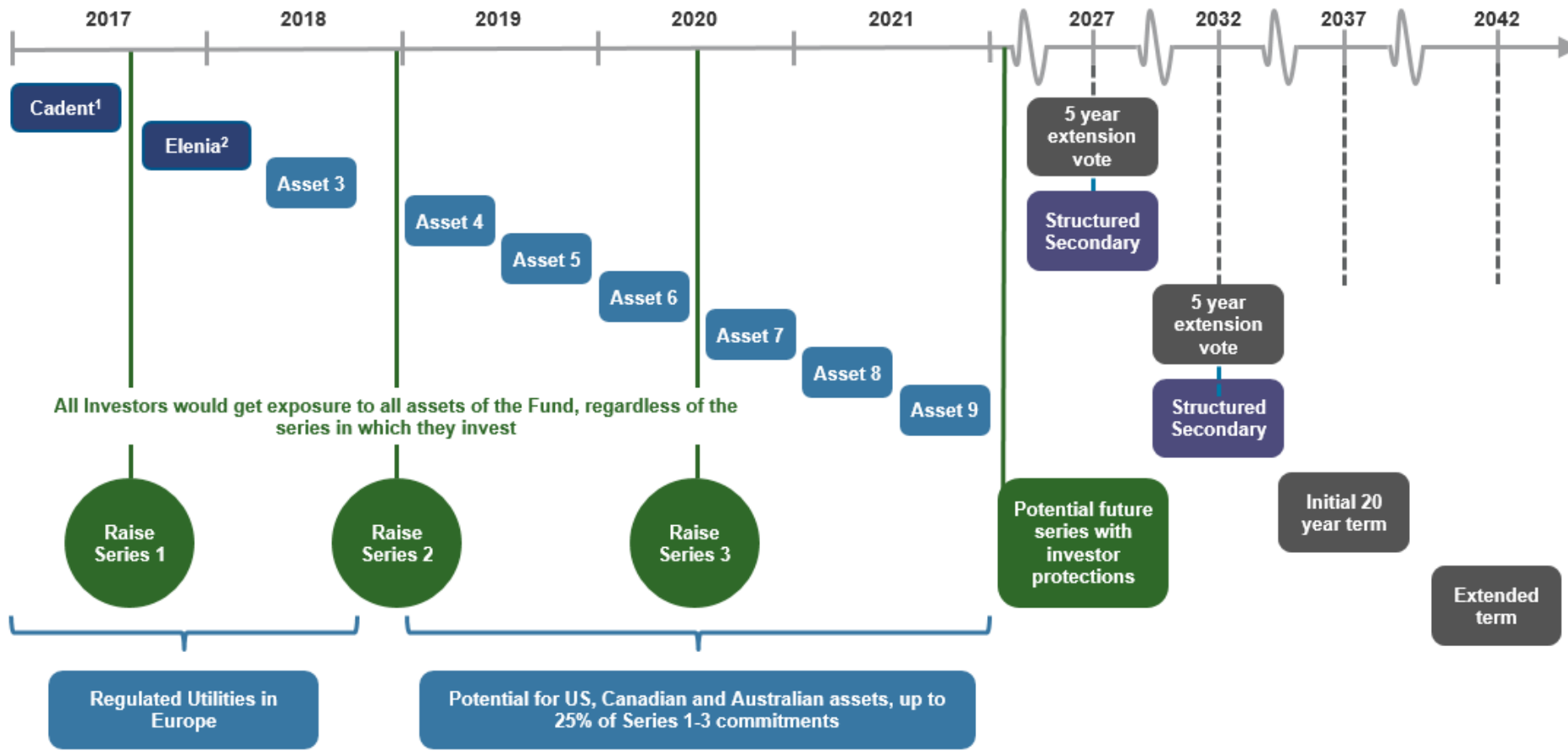
- Recommending a €125 million commitment in Macquarie's Super Core Infrastructure Fund
- Fund Size: €2.5 billion for Series 1
- Management Fees:
 - 50bps on un-invested capital
 - No greater than 65bps on Fund NAV
- Performance Fee:
 - 20% of the YIELD over a 4% yield hurdle per year, after fees and expenses
- Return Target:
 - 7-8% net return expectation
 - 5% cash yield
- Fund Term:
 - 20 year term with 2+ 2-year extensions
 - Investors can choose to extend beyond 20 years in 5-year increments

Appendix

A Primer on Regulation



Macquarie Super Core – Fund Structure



Source: Macquarie

REBECCA M. GUNNLAUGSSON, PH. D
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COMMISSIONER

EDWARD N. GIOBBE, MBA
COMMISSIONER



REYNOLDS WILLIAMS, JD, CFP
COMMISSIONER

May 30, 2018

To: Members of the Investment Commission

From: Ashli Aslin

Re: INVESTMENT RECOMMENDATION – Macquarie Super Core Infrastructure Fund

Fund Name	Macquarie Super Core Infrastructure Fund (“Super Core” or “the Fund”)
Firm Name	Macquarie Infrastructure and Real Assets (Europe) Limited, a member of the Macquarie Group (“MIRA” or “the Manager”)
Asset Class	Infrastructure
Sub-asset class	Core
Geography	Europe
Commitment	€125 million
Fund Size	€2.5 billion (estimated)
Co-Invest Opportunities	Not contemplated
Final Close	June 22, 2018 (estimated)
Management Fee (Committed/Invested, %)	<ul style="list-style-type: none"> • 0.50% per annum on Undrawn Commitments; and • not more than 0.65% on Fund Net Asset Value
Performance Fee (%)	20% of yield
Preferred Return (Y/N), %	Yes – 4% yield per annum
Investment Period	3 years
Fund Life	20 years from the final closing date of Series 1, with the possibility of five-year extensions in perpetuity.
Manager Commitment	€30 million
RSIC ODD / Albourne ODD	Pass / B
Albourne Investment DD Rating	B3

Investment Summary:

MIRA (Europe) is launching the Macquarie Super Core Infrastructure Fund, which will invest in core regulated assets, primarily in Europe, that exhibit the following characteristics: 1) substantially all revenues will be regulated; 2) limited exposure to volume risk and merchant price risk; 3) provides an essential service to the community; and 4) a large proportion of return comes from cash income.

The Fund will be raised through a number of series of discrete capital raisings, with at least nine assets by the end of Series 3. The Fund has an initial 20-year term starting at the close of Series 1, with the possibility to extend in five-year increments into perpetuity, based on a majority vote of the Total Common Unit Holders. The Fund expects to deliver a 7-8% net annual return with a 5% annual cash yield.

Manager Overview:

The Fund is a product within MIRA, the largest infrastructure asset manager in the world. MIRA formed in the early 1990s, when the Australian state and federal governments privatized a significant portion of Australia's infrastructure including airports, toll roads, telecommunications, and electric and gas utilities. Through this process, Macquarie Group Ltd provided investment banking and advisory services, which gave them expertise and insight into the sector. In 1994, the Macquarie Group purchased the Hills Motorway Express, an Australian toll road, and concurrently established MIRA. MIRA can be credited with institutionalizing the infrastructure asset class.

MIRA has invested in infrastructure as a standalone business for 23 years, with approximately \$A142 billion in AUM across 47 funds and mandates across their regionally-oriented teams in North America, Europe, and Asia Pacific. Today, MIRA has over 470 infrastructure investment professionals across 23 global offices.

MIRA (Europe) has a strong track record of investing in regulated utilities. Across the five European infrastructure funds, the team has invested approximately €7 billion (€14 billion, including co-investments) across 11 utility assets, with a combined gross IRR of 12.4%, a 1.8x gross multiple, and an annual yield of 6.5%.

Investment Thesis:

The Investment Team has outlined the following rationale for making the investment:

1. **Experienced team**
2. **Asset characteristics that match the goals of our infrastructure allocation**
3. **Disciplined approach to core infrastructure**

As RSIC seeks to build out the infrastructure allocation, the Fund provides access to one of the biggest and most experienced infrastructure teams managing core assets that align well with the goals of the infrastructure allocation. In today's low-return environment it has become common for infrastructure managers to take on riskier investments to meet the return expectations for their strategies. The Super Core strategy protects against this style drift by requiring that assets be purchased from a published Target Asset List and by aligning the performance fee to yield, incentivizing the manager to invest in mature core assets that have high cash flow stability.

Portfolio Fit:

RSIC's infrastructure portfolio has the stated goals of providing a link to inflation, offering stable and predictable cash income, having diversification benefits, and achieving a return in-line with our consultant's view of the asset class.

Due to the essential nature and monopolistic characteristics of the assets contemplated in this strategy, a substantial portion of the revenues of the assets in the Fund will be regulated, which have a direct tie to rates and inflation. The essential nature of the assets in the strategy leads to stability through the economic cycle with a low correlation to other risk exposures in the portfolio. The assets targeted are mature assets and a substantial portion of their return comes in the form of income. A diversified portfolio of these assets should provide a very stable return with predictable cash flows that correlate with rates and inflation.

The Infrastructure Asset Class Baseline establishes that 65% of the allocation to infrastructure should consist of core, core-plus, and listed strategies, which will contribute to achieving the risk/return profile desired from the allocation.

Risks and weaknesses:

The investment team has noted five main concerns with the Fund and Manager:

1. **Political/Regulatory Risk**
2. **Returns in a rising rate environment**
3. **Limited liquidity options**
4. **Macquarie European Infrastructure Funds (MEIF) has priority over infrastructure opportunities**

When investing in regulated utilities, regulatory risk is one of the largest risks RSIC is assuming. However, the Fund will have diversification among regulatory bodies and the long fund life will protect against forced-selling during a period of regulatory disruption. In addition, regulatory risk is driven by unique factors that should be uncorrelated to many of the other risks in our portfolio.

There is also some uncertainty about the impact that rising rates would have on infrastructure returns. However, the appraisers have not lowered the discount rates to the same extent that interest rates have decreased and because most regulatory authorities moved to using a long-term average cost of debt allowance, utility assets have built in protections against rising rates. It is also important to consider that since regulated returns are based on a weighted average cost of capital, which reflects a market-determined cost of equity and cost of debt, as rates increase, the cost of debt should be reflected in a higher regulated return for the asset.

Given the long fund term, investments in the Fund should be considered illiquid. However, there are several opportunities for liquidity, including a structured secondary program that will be offered at least every ten years. In addition, RSIC would not be prohibited from issuing shares of the Fund on the secondary market at any time.

MIEF funds have priority over assets available to the Fund. However, there is limited opportunity for overlap, because MEIF funds have a higher return expectation.

June 14, 2018

Confidential Material

SC Due Diligence Team:

Ashli Aslin

Summary Terms Chart

	Investment Officer Summary:	Source Location:
Manager Name:	Macquarie Infrastructure and Real Assets (Europe) Limited, a member of the Macquarie Group	LPA – Clause 7.1 (“Appointment of a Manager”) PPM – Section 2 (“Key Features”)
Fund/Investment Name:	Macquarie Super Core Infrastructure Fund SCSp	LPA – Clause 2.3 (“Name”) PPM – Section 1 (“Executive Summary”)
Primary Custodian(s) or Safekeeping Agent(s) (together with point of contact information if other than BONY Mellon):	Alter Domus Depository Services S.à r.l. 5, rue Guillaume Kroll L-1882 Luxembourg BP 2501 • L-1025 Luxembourg Grand Duchy of Luxembourg T +352 48 18 28 1 F +352 48 18 63	LPA – Clause 8 (“Appointment of Depository”) PPM – Section 11 (“Additional Information”) and Section 12 (“Address and contact details of relevant parties”)
RSIC Investment Size & Limitations (Commitment):	€125 million	
Management Fee:	<ul style="list-style-type: none"> • 0.50% per annum on Undrawn Commitments; and • 0.60% per annum on Fund Net Asset Value 	LGA – Clause 14 (“General Partner’s Fee”) PPM – Section 10 (“Summary of terms”)
Performance Fees/Carried Interest:	20% of the yield over a hurdle of 4% yield per annum, providing that the Fund NAV has not fallen more than 10% during that year.	PPM – Section 10 (“Summary of Terms”) LPA – Clause 16 (“Distributions of Income Proceeds and Capital Proceeds Between Partners”)
Hurdle Rate/Preferred Return:	4% of the Fund yield per annum (calculated as a percentage of NAV, on a three-year rolling average and on a “whole of fund” basis)	PPM – Section 2 (“Key Features”) LPA – Schedule 3 (“Hurdle Calculation”)
Organizational Expenses:	Not to exceed €3 million, exclusive of VAT	PPM – Section 10 (“Summary of terms”)
Other Expenses/Fees:	Yes	
Manager Commitment:	Macquarie and staff in aggregate will commit the lesser of an amount equal to 10% of Total Commitments or €30 million to the Fund.	LPA – Clause 2.8 (“Macquarie’s Commitment”) PPM – Section 10 (“Summary of terms”)
Anticipated Investment Period:	<p>Three years from the final closing date of such Series, or earlier if determined by the Manager.</p> <p>The commitment period of a Series may be extended for a period of up to one year by the</p>	PPM – Section 10 (“Summary of terms”)

June 14, 2018

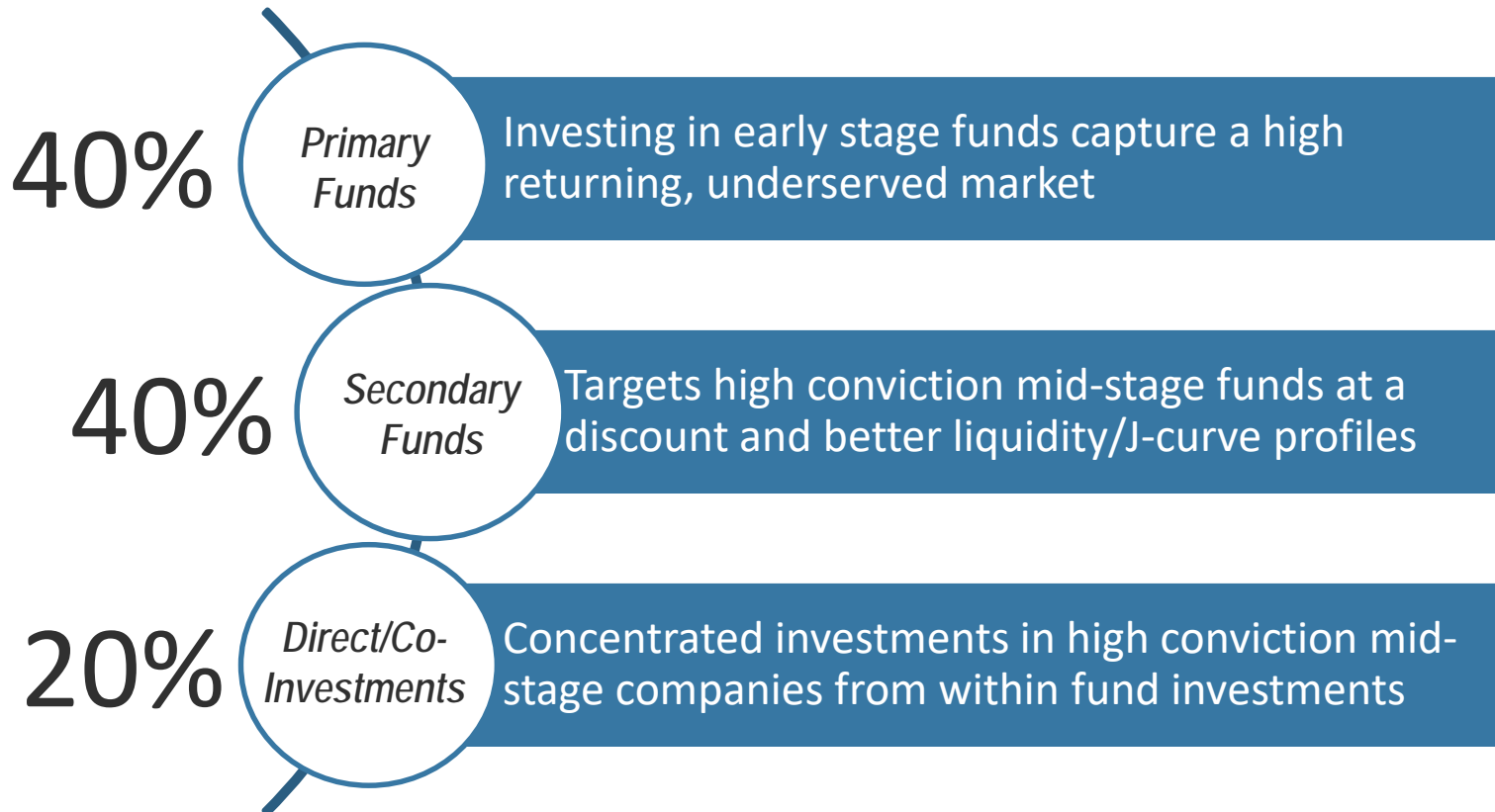
Confidential Material

	Manager with the prior approval of the Investors' Prudential Review Committee (IPRC).	
Anticipated Investment/Fund Term:	20 years from the final closing date of Series 1, with the ability to extend the vehicle in five-year increments into perpetuity. A structured secondary program will be offered every five years from and including year 10.	LPA – Clause 2.5 (“Commencement and duration”) PPM – Section 2 (“Key features”), Section 10 (“Summary of terms”)
Withdrawal Rights:	The Fund does not provide for redemption or repurchase of the Units of investors at their request. The Manager will offer investors the ability to divest their interest through a structured secondary process, as mentioned above, subject to the respective terms of the Fund Partnership Agreements.	PPM – Section 10 (“Summary of terms”)
Placement Agent Used in Obtaining Investment by RSIC:	No	Placement Agent Disclosure Letter

Industry Ventures Partnership Holdings V

Joshua Greene, CFA, CAIA
Joshua Restauri

- \$50 Million venture capital fund of funds investment
- Broad, diversified exposure to the venture capital market
- Access Industry Ventures' expertise and network
- Targets three main investment strategies below



Relationship with RSIC

- Our consultant has communicated that Industry Ventures is a very valuable relationship for the portfolio
- *RSIC has made 3 investments since 2008 for a combined 25% IRR*

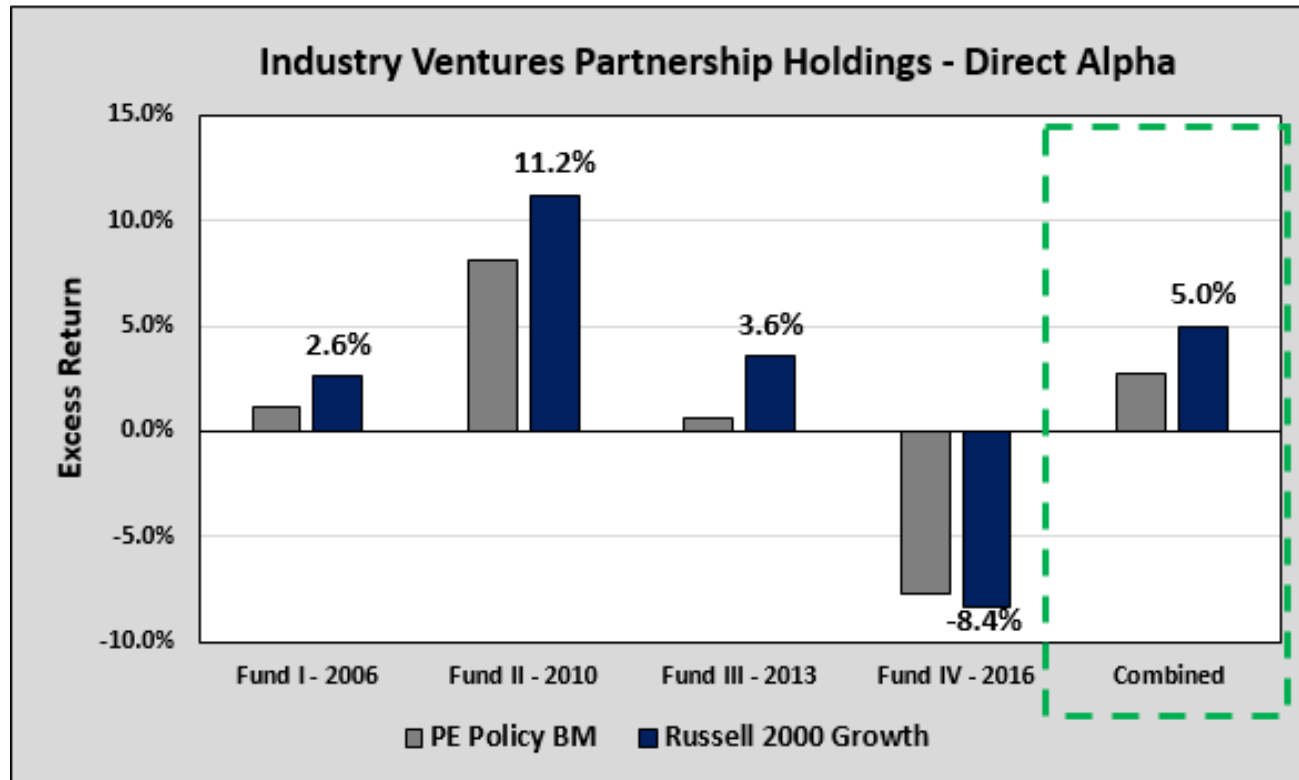
Firm

- Venture capital fund of funds business in San Francisco founded in 2000
- Completed 275+ fund investments and 240+ direct investments
- 24 professionals with cross strategy coverage and carry allocation intended to promote a collaborative environment.

Performance

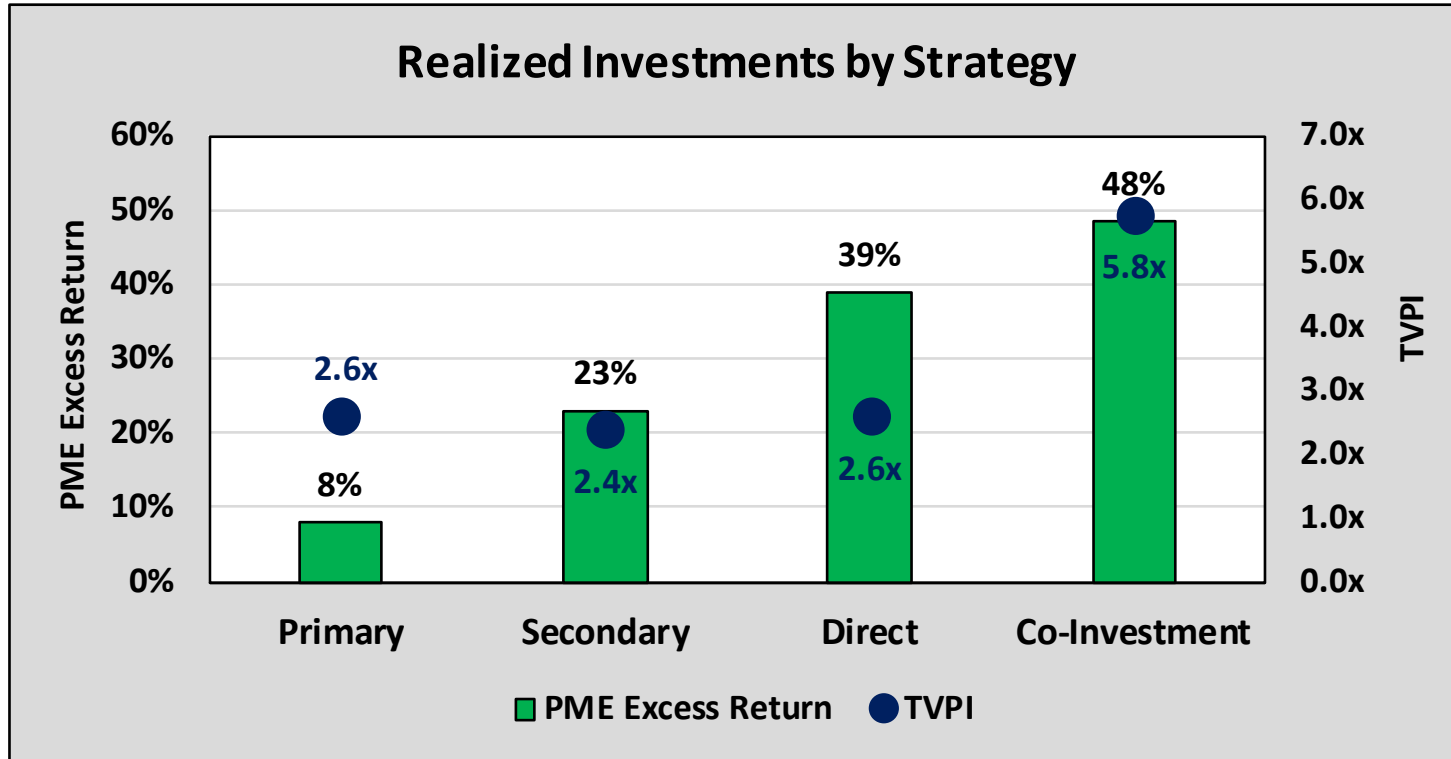
- The Industry Ventures Partnership Holdings fund series has meaningfully outperformed public markets across funds, investment types, and deal professionals
- They have done so with a persistent return profile of higher growth and right skew than achievable in the public markets

- Combined annualized excess returns of 500 BPS over the broad small growth index.
- 35% of Fund III and 70% of Fund IV is still held at cost.
- 1st or 2nd quartile performance for Funds I-IV



The Private Equity Policy Benchmark is 80% R3000 / 20% EAFE + 300bps

- Positive excess returns for each investment type (for all realized transactions)
- Ability to source, select and underwrite Direct and Co-Investments has resulted in returns in excess of Primary and Secondary Funds



Direct Alpha is calculated utilizing the Russell 2000 Growth as the benchmark

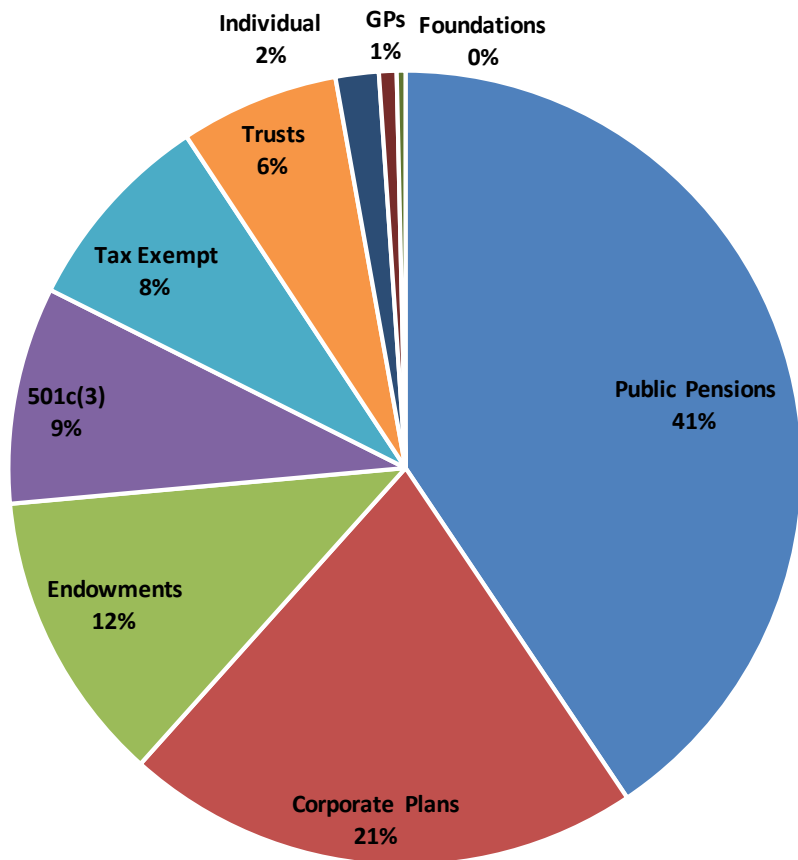
Data is gross of IVPH Fees

Commitment Size:	\$50M
Target Fund Size:	\$250M
GP Commitment:	2% up to \$5m in cash
Investment Period:	4 Years
Management Fee:	1% on committed capital
Carried interest:	5% on Primary ; 10% on Secondary ; 20% on Direct (10% Blended)
Preferred Return:	6% ; 100% catchup
Term:	10 Years ; Two 2 year extensions at GP's discretion
Timing:	Fund Close 6/30/2018

Appendix

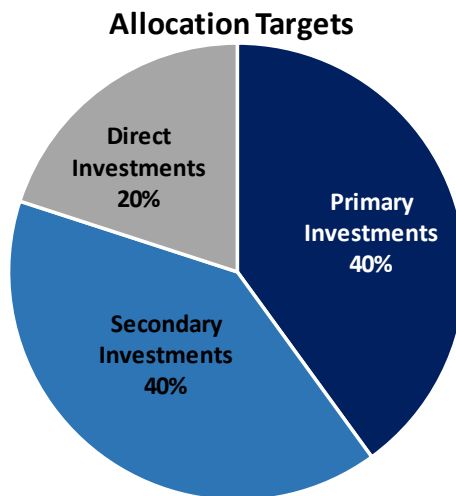
Public and corporate pension plans make up >60% of capital committed to IVPH IV.

Similar percentages are expected to hold for IVPH V, dependent on RSIC's commitment



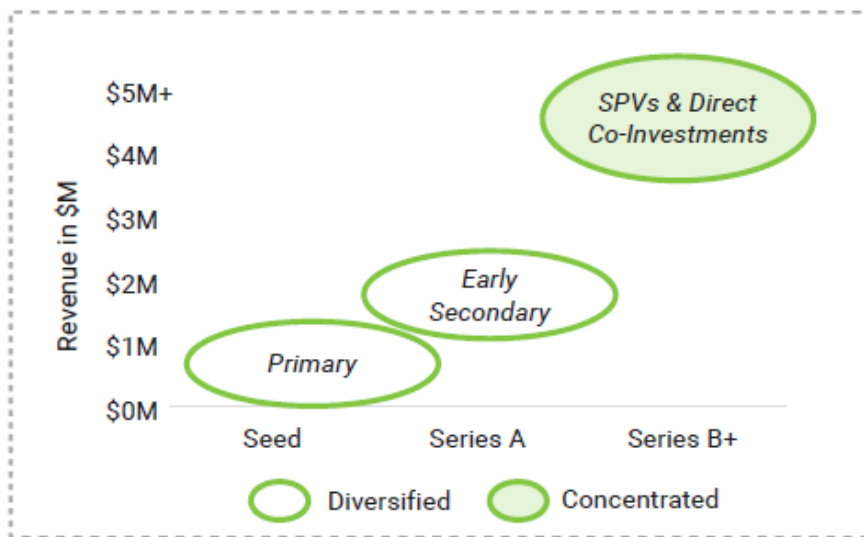
LP Type	Commitment
Public Pensions	85,000,000
Corporate Plans	44,100,000
Endowments	25,000,000
501c(3)	18,500,000
Tax Exempt	17,400,000
Trusts	13,550,000
Individual	3,680,000
General Partner	1,500,000
Foundations	750,000

More concentrated positions are taken in later stage companies



Each fund will be diversified across approximately 1000 companies

Revenue and Stage of Underlying Companies



Portfolio Concentration and Diversification

	Approx. number underlying companies*	Approx. avg. invested \$\$ per company*
Primary Fund Commitments	750	\$133k
Early Secondaries	300	\$167k
SPVs	20-30	\$1.6M
Direct Co-Investments	15-25	\$2.5M

Legend: ○ Diversified ● Concentrated

Investment Types – Primary Transactions (40% of Fund)

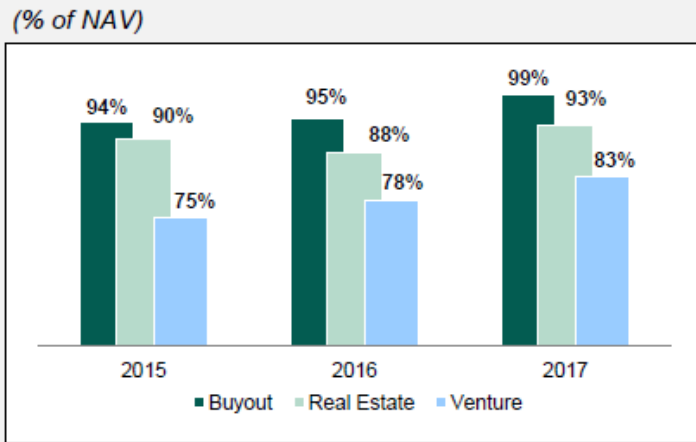
- Targeting early stage or seed companies (<\$1M revenue) with potential investment in first time venture funds and emerging managers.
- Typically commits \$1M - \$3M to funds less than \$250M.
- Better alignment of interests in terms of compensation, motivation, and business expansion.
- Less dependent on IPO for exit, vast majority realized through M&A.
- Higher probability of accessing subsequent funds of successful GPs that are otherwise unavailable to outside investors.

	Seed - Stage	Early-Stage	Mid - Stage	Late - Stage
Growth Stage	Initial product development and market testing	Early customer adoption	Scaling product and go-to-market strategy	Growth of established product
Financial Profile	<\$1M of revenue	\$1-5M of revenue, negative cash flow	\$5-20M of revenue, negative cash flow	\$20M+ of revenue, path to positive cash flow

Investment Types – Secondary Transactions (40% of Fund)

- Targeting mid-stage companies (\$1-5M Revenue) by buying interest in venture funds that are less than 50% called.
- Visibility into funds' early portfolios allows for targeting specific, sought after companies, and faster projected liquidity.
- Buying from motivated sellers has historically earned significant discounts to NAV, a return driver that is negatively correlated to market risk.
- Positioning itself as a solutions provider enhances the relationship with the GP and allows for negotiation of accretive terms and structuring.

Historical Pricing by Strategy



	Seed - Stage	Early-Stage	Mid - Stage	Late - Stage
Growth Stage	Initial product development and market testing	Early customer adoption	Scaling product and go-to-market strategy	Growth of established product
Financial Profile	<\$1M of revenue	\$1-5M of revenue, negative cash flow	\$5-20M of revenue, negative cash flow	\$20M+ of revenue, path to positive cash flow

STATE OF SOUTH CAROLINA

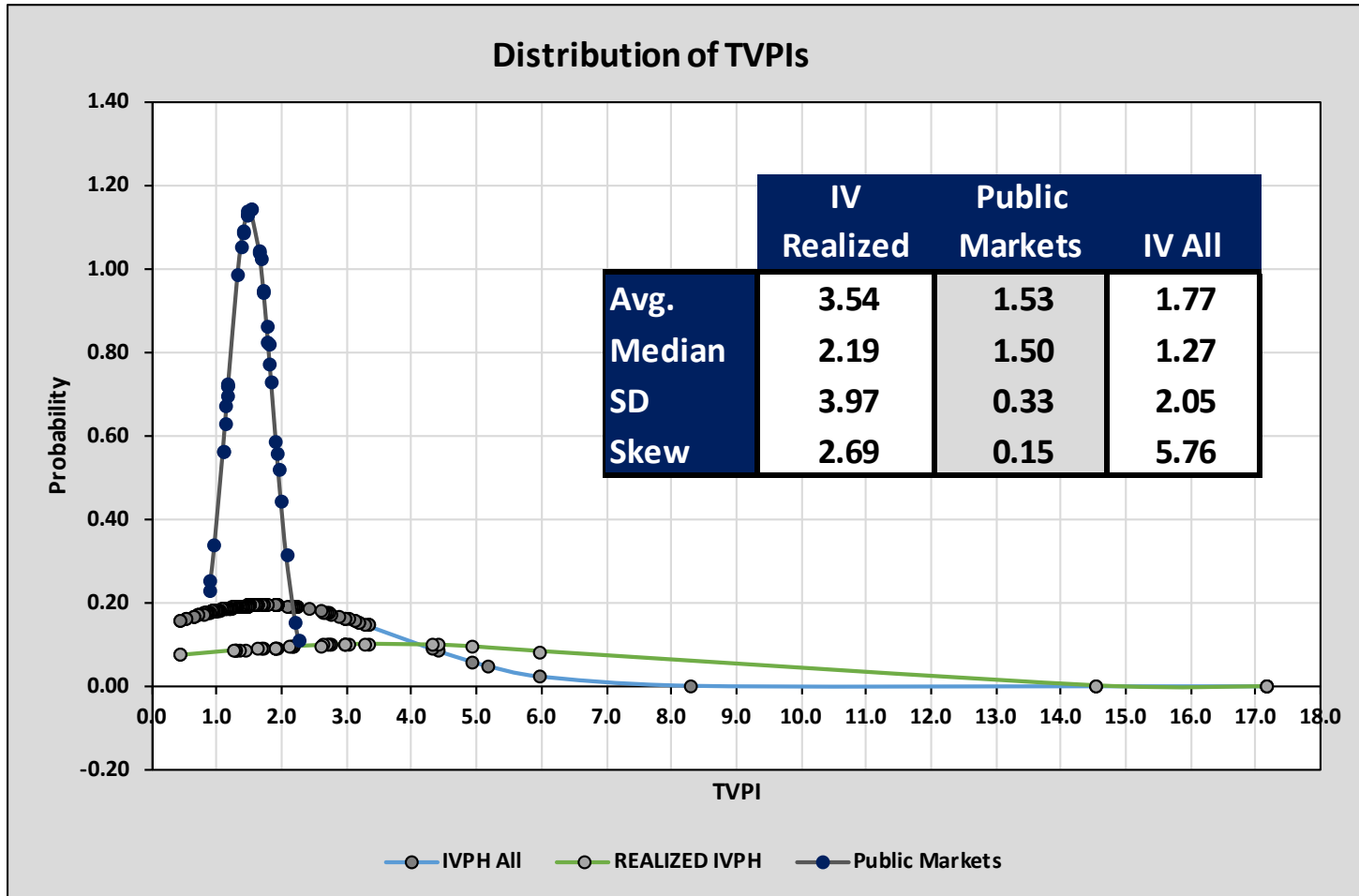
Investment Types – Direct Investments (20% of Fund)

- Targeting mid to latestage companies (\$5 - 20M Revenue) by investing directly in subsequent rounds of fundraising when the GP is unable to provide the capital.
- Concentrated positions are taken in high conviction/breakout companies.
- Being an LP provides information on company development and allows.
- GPs prefer to build ownership with existing LPs, making many opportunities exclusive to those in the early / seed funds.

	Seed - Stage	Early-Stage	Mid - Stage	Late - Stage
Growth Stage	Initial product development and market testing	Early customer adoption	Scaling product and go-to-market strategy	Growth of established product
Financial Profile	<\$1M of revenue	\$1-5M of revenue, negative cash flow	\$5-20M of revenue, negative cash flow	\$20M+ of revenue, path to positive cash flow

IV Partnership Holdings Public Markets Equivalent

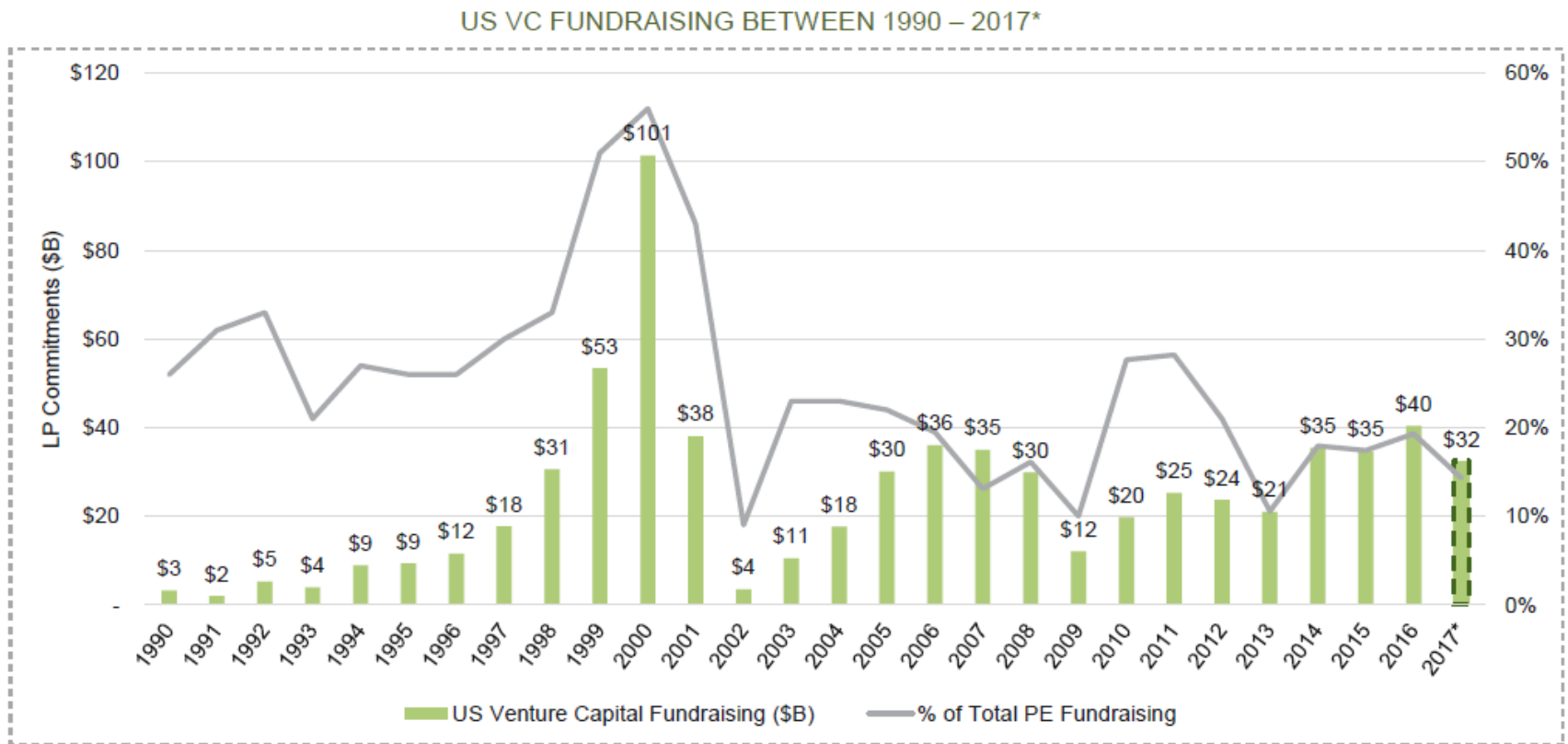
- The Industry Venture holdings have outperformed public markets with a higher right skew profile, around a higher mean, and a higher standard deviation than the Russell 2000 Growth



Direct Alpha is calculated utilizing the Russell 2000 Growth as the benchmark

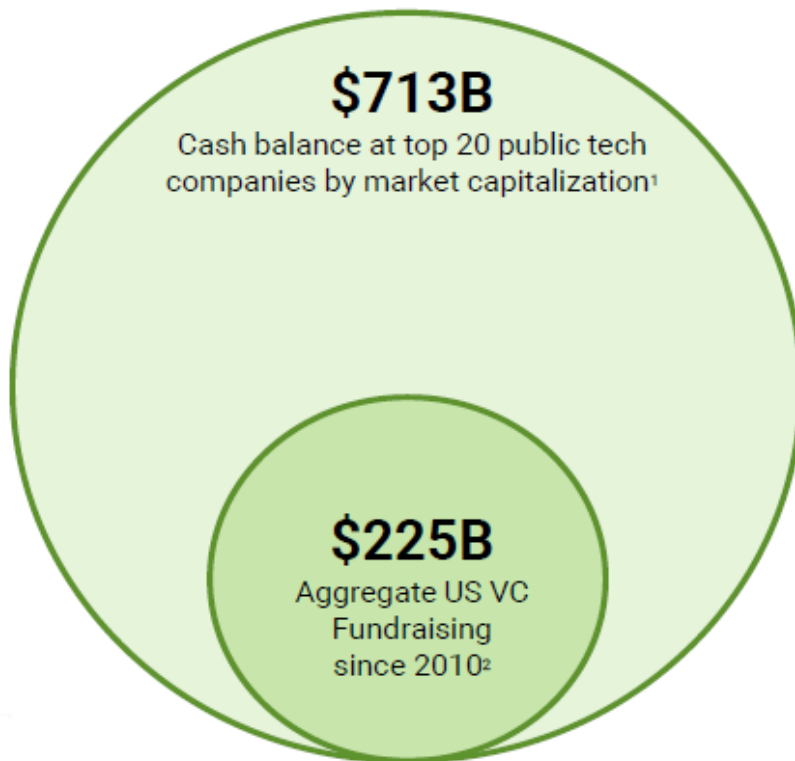
Data is gross of IVPH Fees

- Fundraising has reached 2007 levels but remained within a narrow annual range



- The top 20 public technology companies have grown cash balances to a level that can handle 3x the last 7 years of venture fundraising
- This is supportive of the venture exit environment in the intermediate term

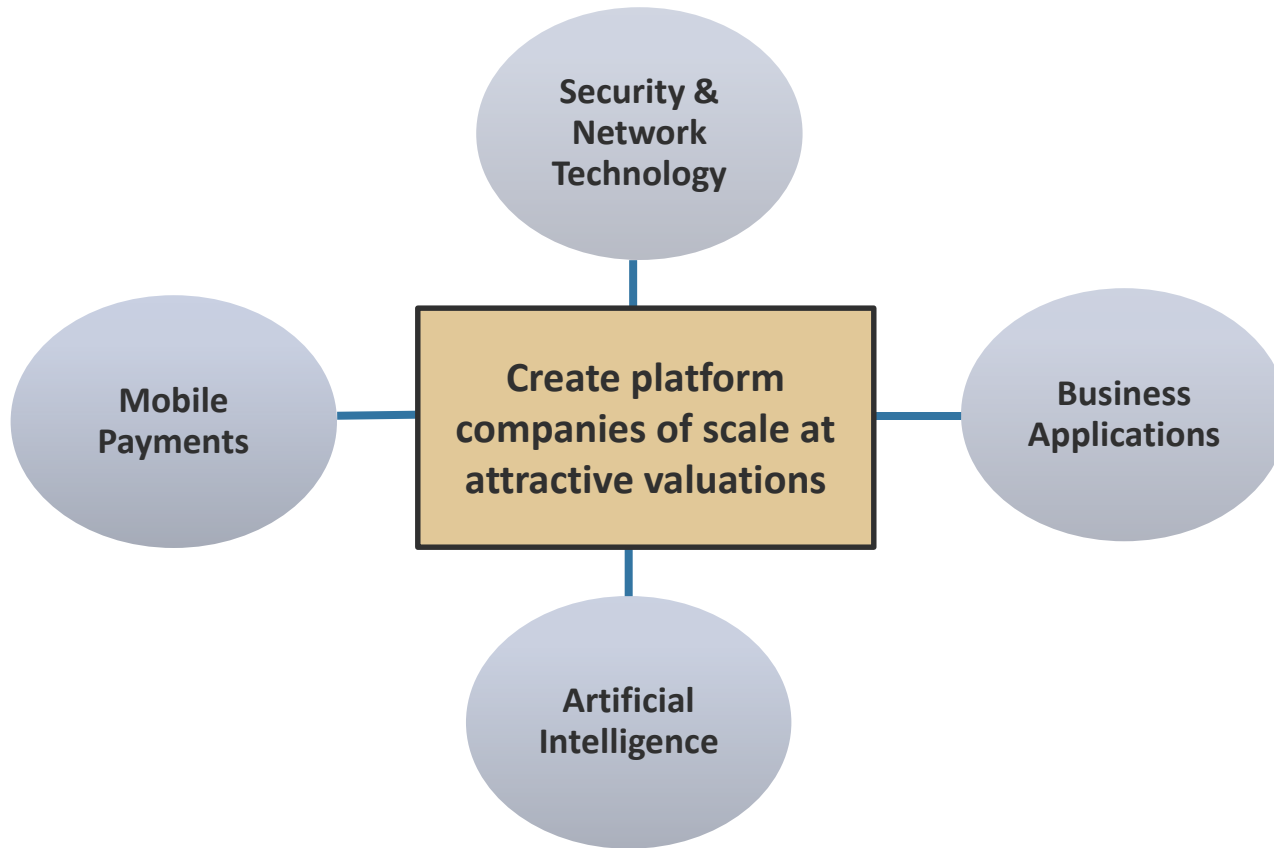
PUBLIC CO. CASH VS. VC FUNDRAISING



Providence Strategic Growth III (“PSG III”)

Derek Connor, CFA, CAIA

- \$75 Million Software-focused growth equity investment
- Target Company Size: \$10M-\$200M enterprise value
- Macro opportunity around the rapid growth of data and cloud computing
- Expands companies rapidly through acquisition and organic growth
- PSG targets the following investment themes:



Relationship with RSIC

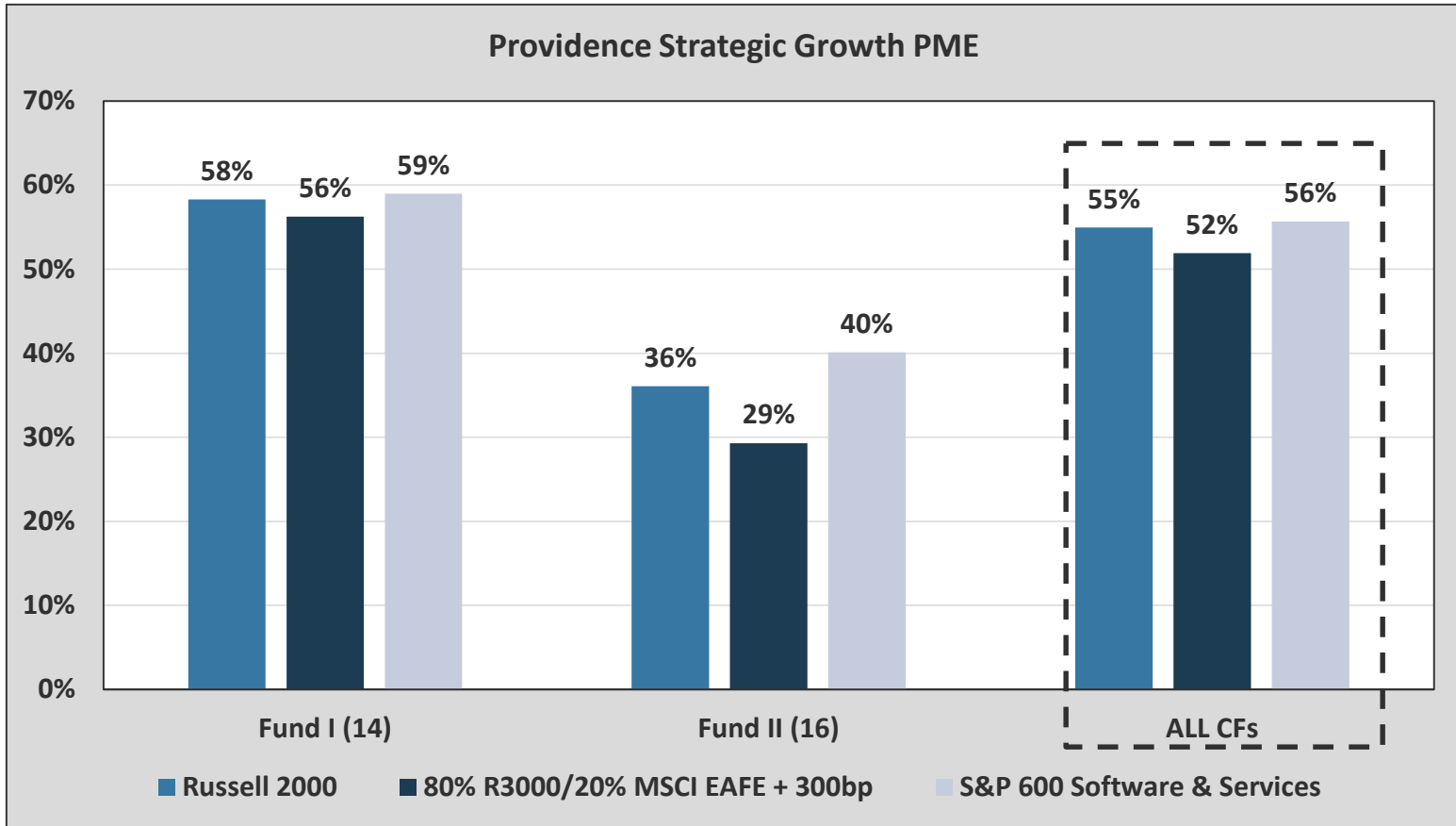
- This is a new relationship for RSIC
- Growth equity is an under-represented exposure in the RSIC PE portfolio

Firm

- PSG was founded in 2013 and is affiliate of Providence Equity Partners
- Invested over \$1.3 billion across 25 companies and executed 89 add-ons
- 24 professionals utilizing relationship-driven and collaborative approach

Performance

- PSG has meaningfully outperformed public and private markets across funds and portfolio companies
- PSG I, a vintage 2014 fund, has already generated realized proceeds of nearly 90% of fund size

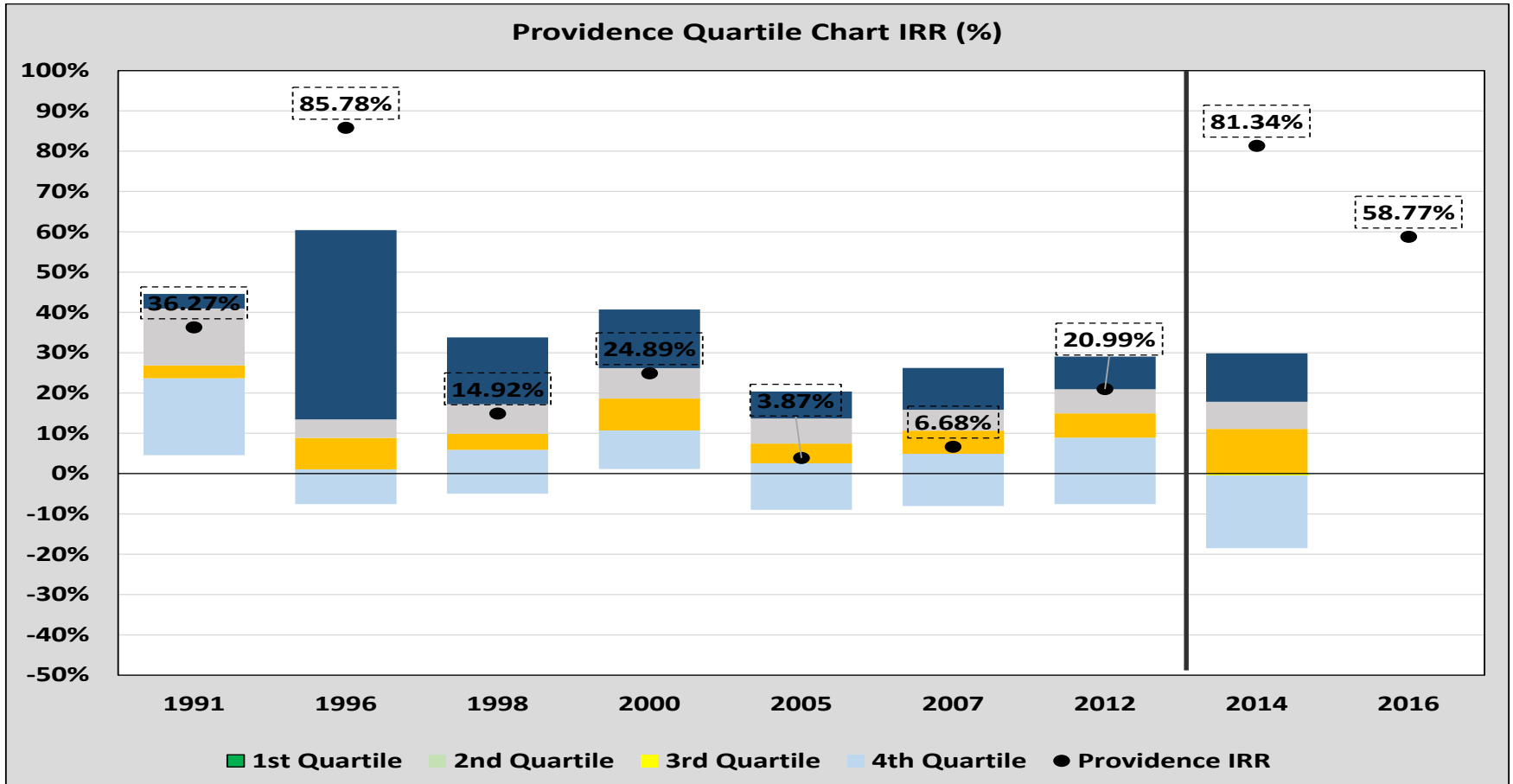


- PSG I and PSG II significantly outperforming all public market benchmarks over comparable time period*

Note:
 * Policy benchmark is 80% Russell 3000 + MSCI EAFE + 300 basis points

Commitment Allocation:	\$75M
Fund Size:	\$1.25B
GP Commitment:	At least \$50M
Investment Period:	5 Years
Management Fee:	2% on committed capital
Carried interest:	20%
Preferred Return:	8%; 100% catchup
Term:	10 Years ; Three 1 year extensions with Advisory Committee consent
Timing:	Fund Close 6/12/2018

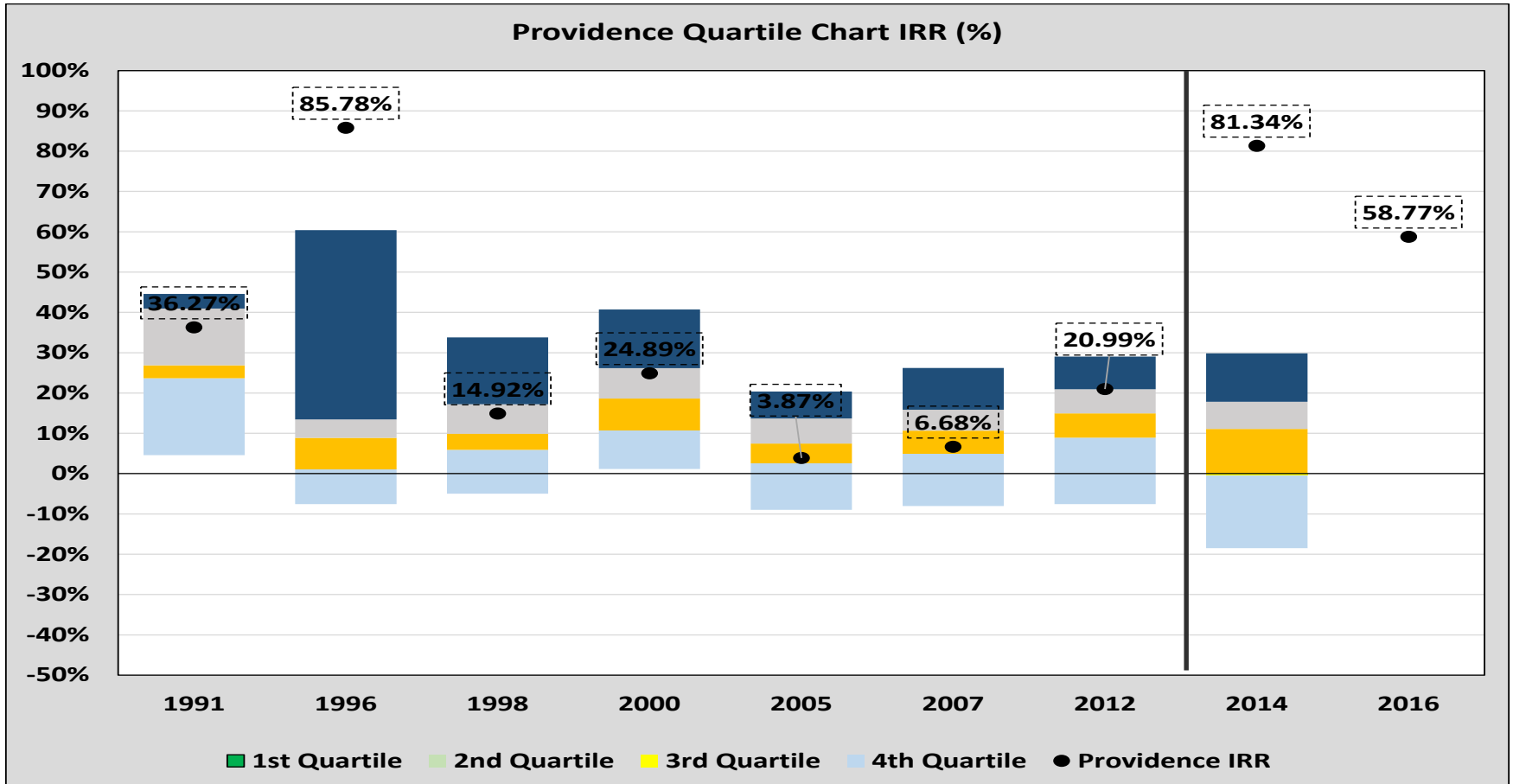
Appendix



- *Vintage 2014 and vintage 2016 investments are PSG funds*
- *PSG II performance too early to be meaningful*

Data Source: Providence (as of 9/30/17) and Cambridge Associates U.S. and European Buyout universe (as of 6/30/17) ; PSG benchmarked against Growth Equity universe

Providence Performance Quartiles (Net IRR)



- *Vintage 2014 and vintage 2016 investments are PSG funds*
- *PSG II performance too early to be meaningful*

Data Source: Providence (as of 9/30/17) and Cambridge Associates U.S. and European Buyout universe (as of 6/30/17) ; PSG benchmarked against Growth Equity universe

Business Description:

- Ministry Brands is a leading provider of cloud-based digital giving platforms, church management software and marketing solutions for faith-based organizations

Transaction Summary:

- PSG I invested a total of \$23 million at a \$44 million enterprise value in March 2015

Value Creation:

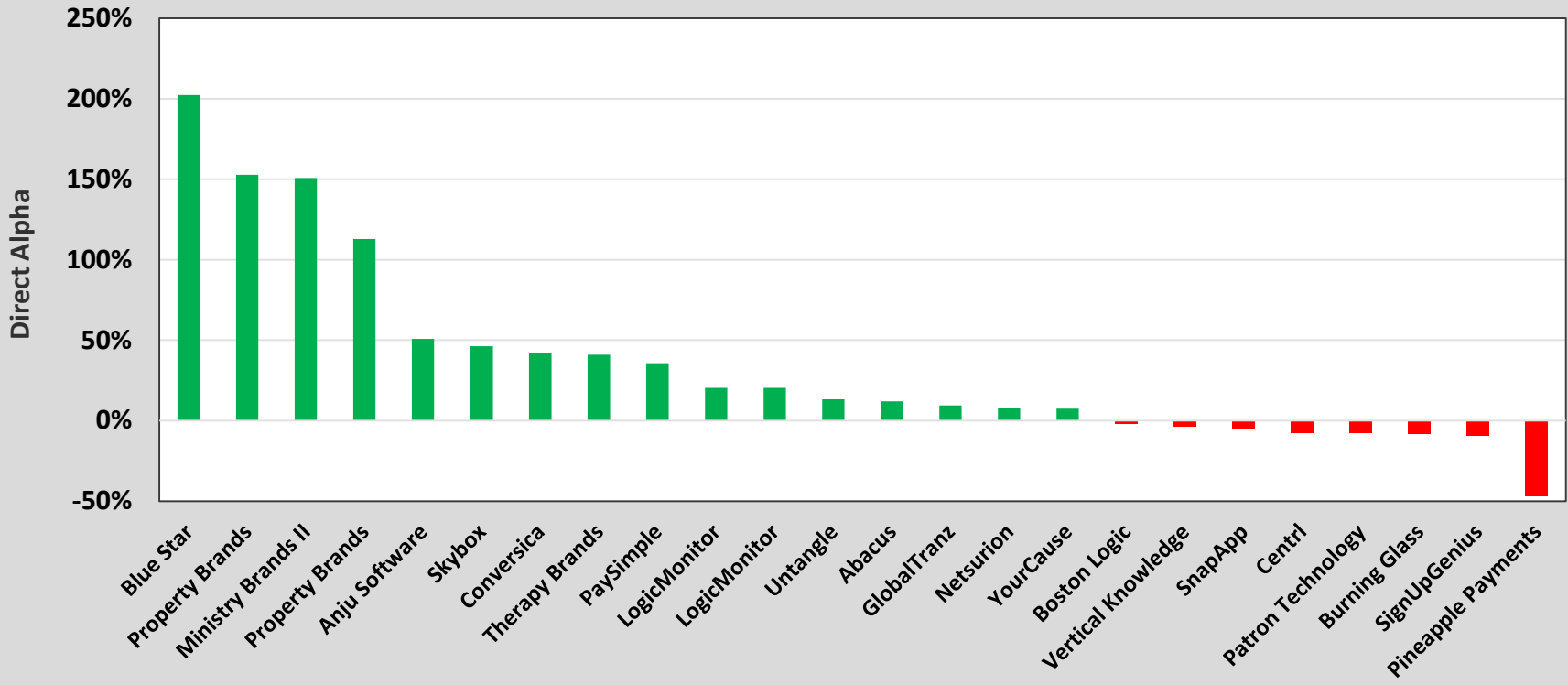
- Ministry Brands grew revenue from \$11 million at acquisition to nearly \$55 million through September 2015
- Between March and November 2015, the PSG team and company management worked in conjunction to:
 - Double size of customer base to over 25,000 organizations
 - Expand software solution set to include financial reporting and accounting software, live streaming and mass communication services
 - Executed aggressive M&A strategy, completing 11 accretive acquisitions at average 6.0x EBITDA

Exit and Performance:

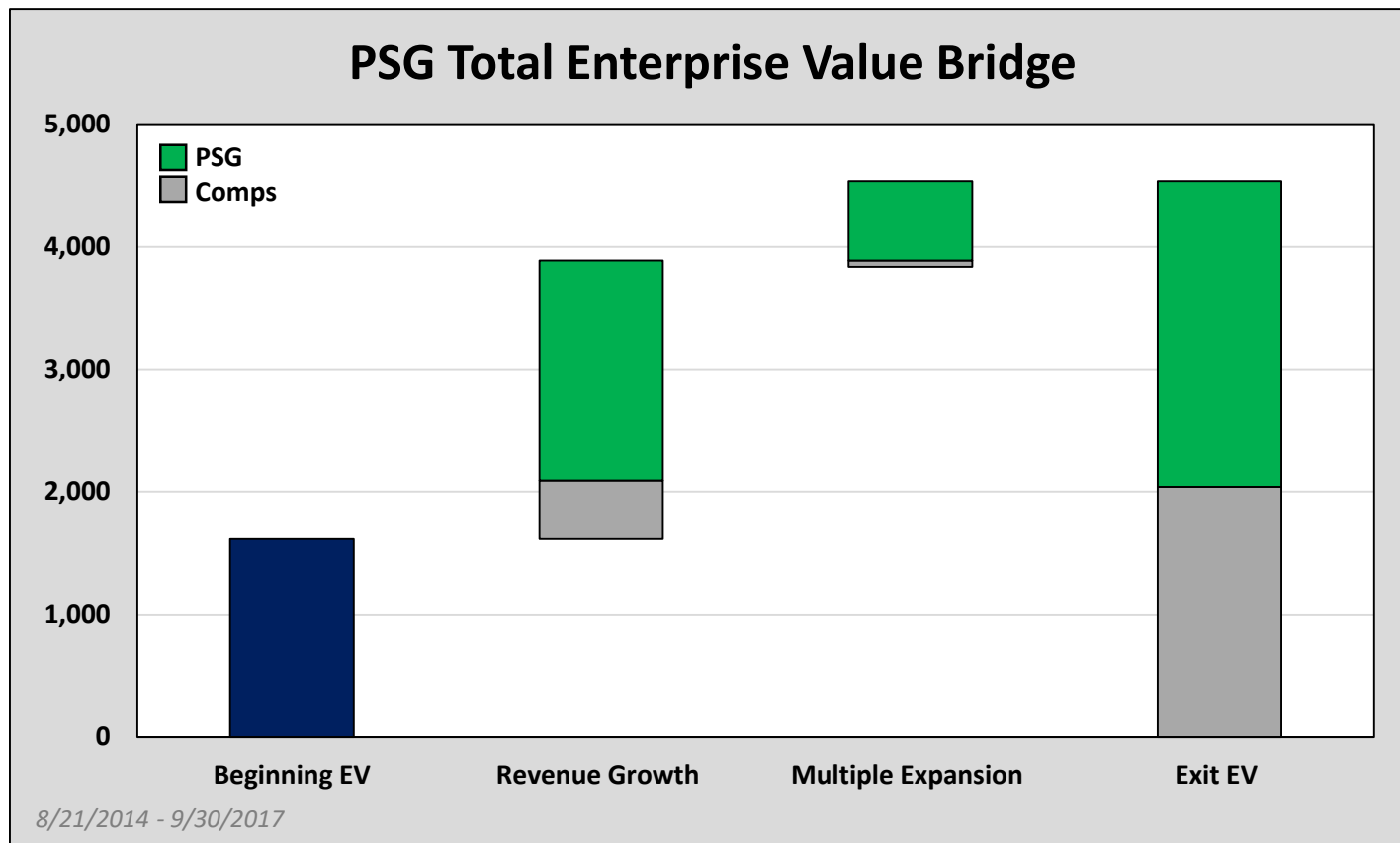
- In November 2015, PSG sold a majority stake of the company to Genstar Capital at a \$350 million enterprise value
- This represented a gross MOIC of 8.0x and gross IRR of 699% for PSG I
- Concurrent with the transaction, PSG I made a new \$46 million investment alongside Genstar for 15% fully diluted ownership

Total Annualized Excess Return: 34.8%
Removing Outliers (2 best/2 worst): 26.8%

PSG Portfolio Company PME Analysis



Note:
 - PSG companies benchmarked against the Russell 2000 Growth Index
 -- Excludes Ministry Brands I investment (PME of 1391%)



- *PSG is experiencing significantly higher revenue growth and multiple expansion vs. public market comps*
- *Multiple expansion is driven by aggressive acquisition strategy*

Note:
 - PSG companies benchmarked against the Russell 2000 Growth Index

June 2018

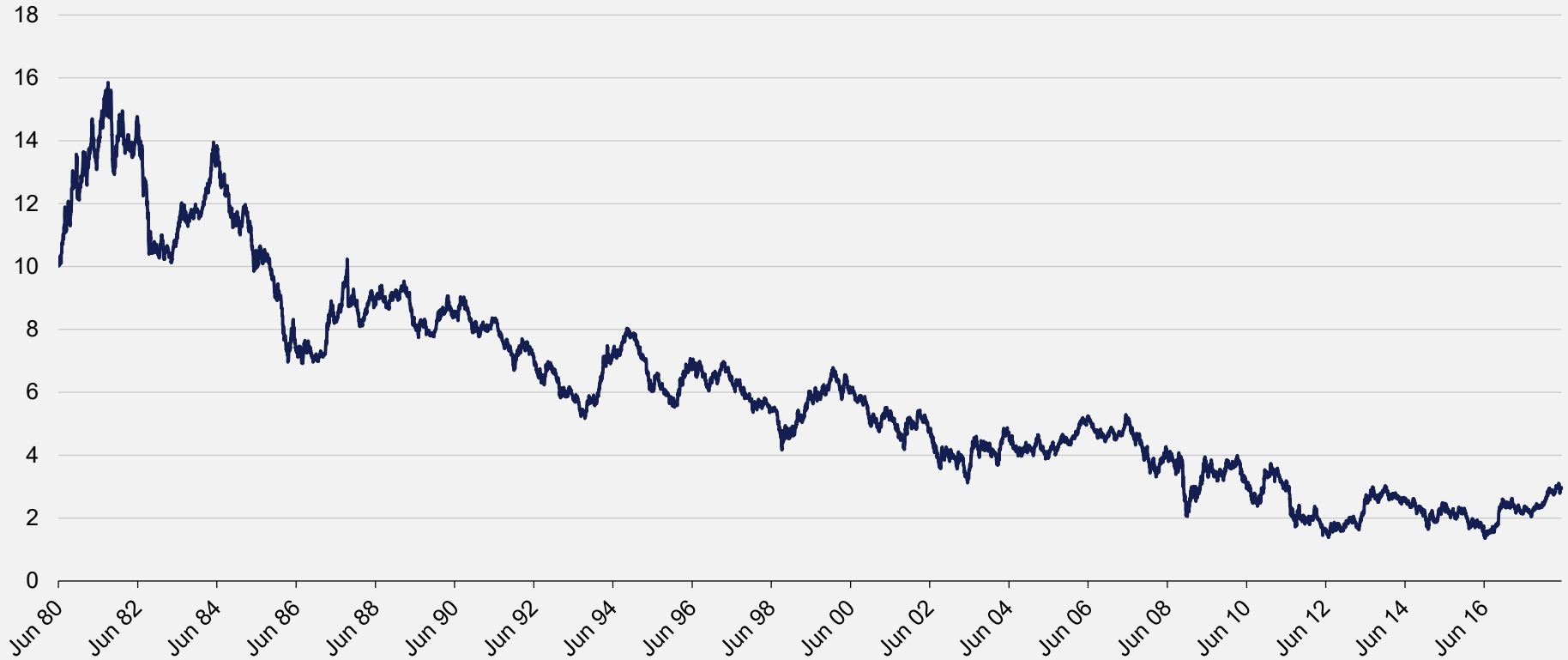
Peak Globalization: Dangers for Markets

South Carolina Retirement System Investment
Commission (RSIC)

Guy Stern, Global Head of Multi-Asset and Macro Investing

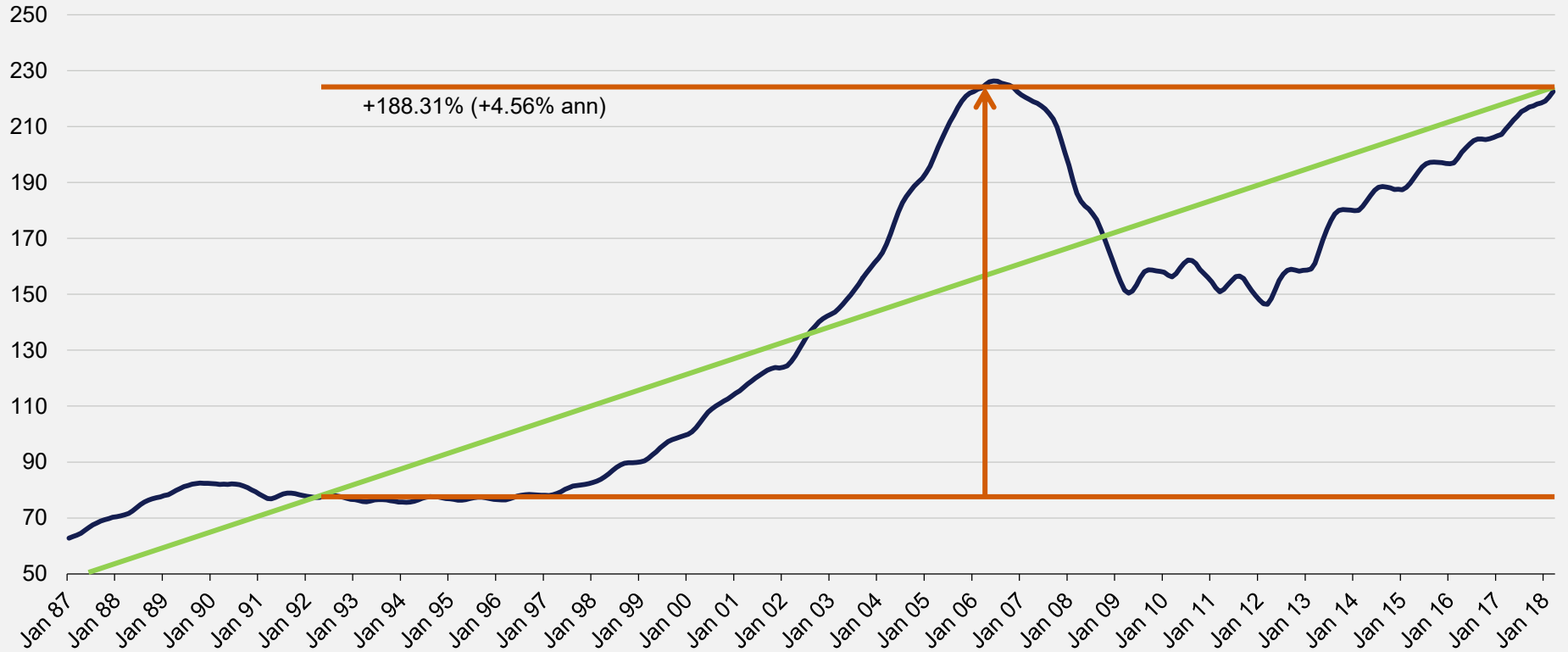
The 35 year bull market for bonds is over

US 10 year yield



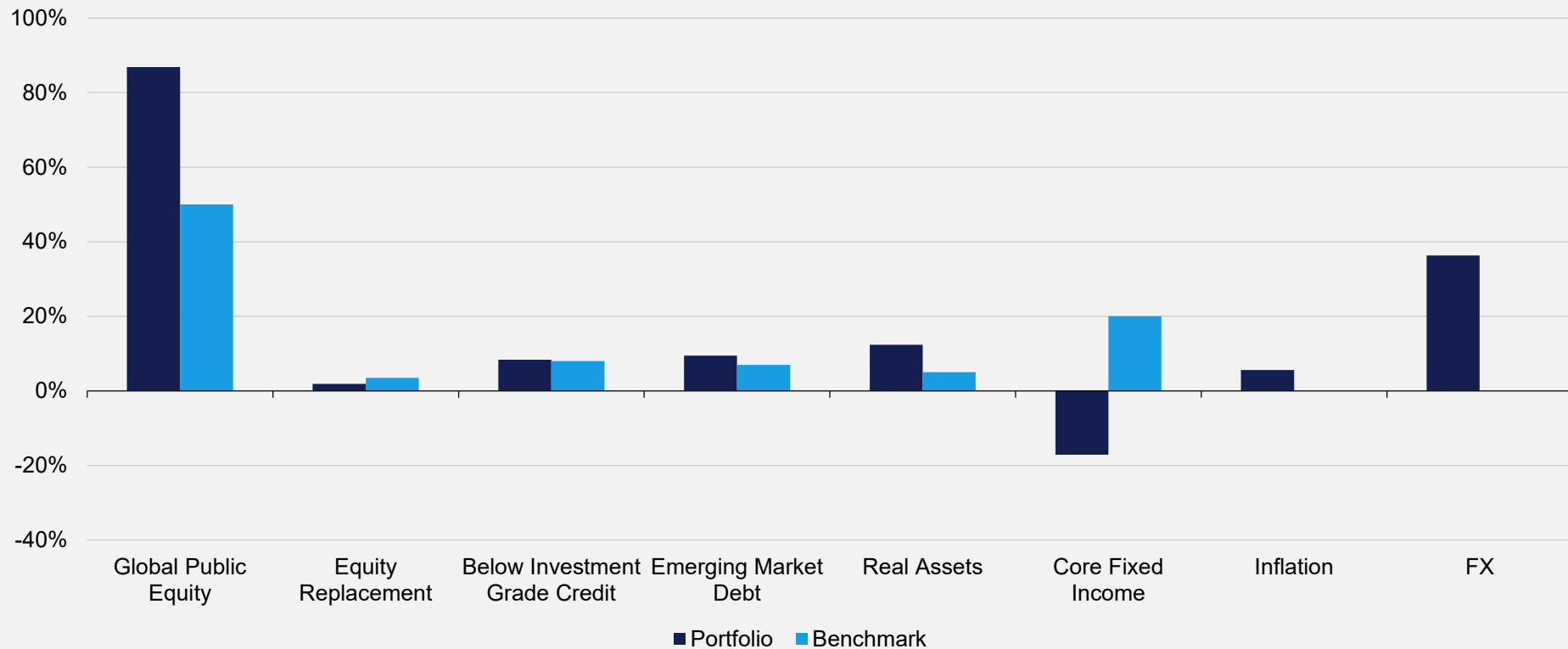
Source: Bloomberg, 10 June 2018

Not all assets are overpriced



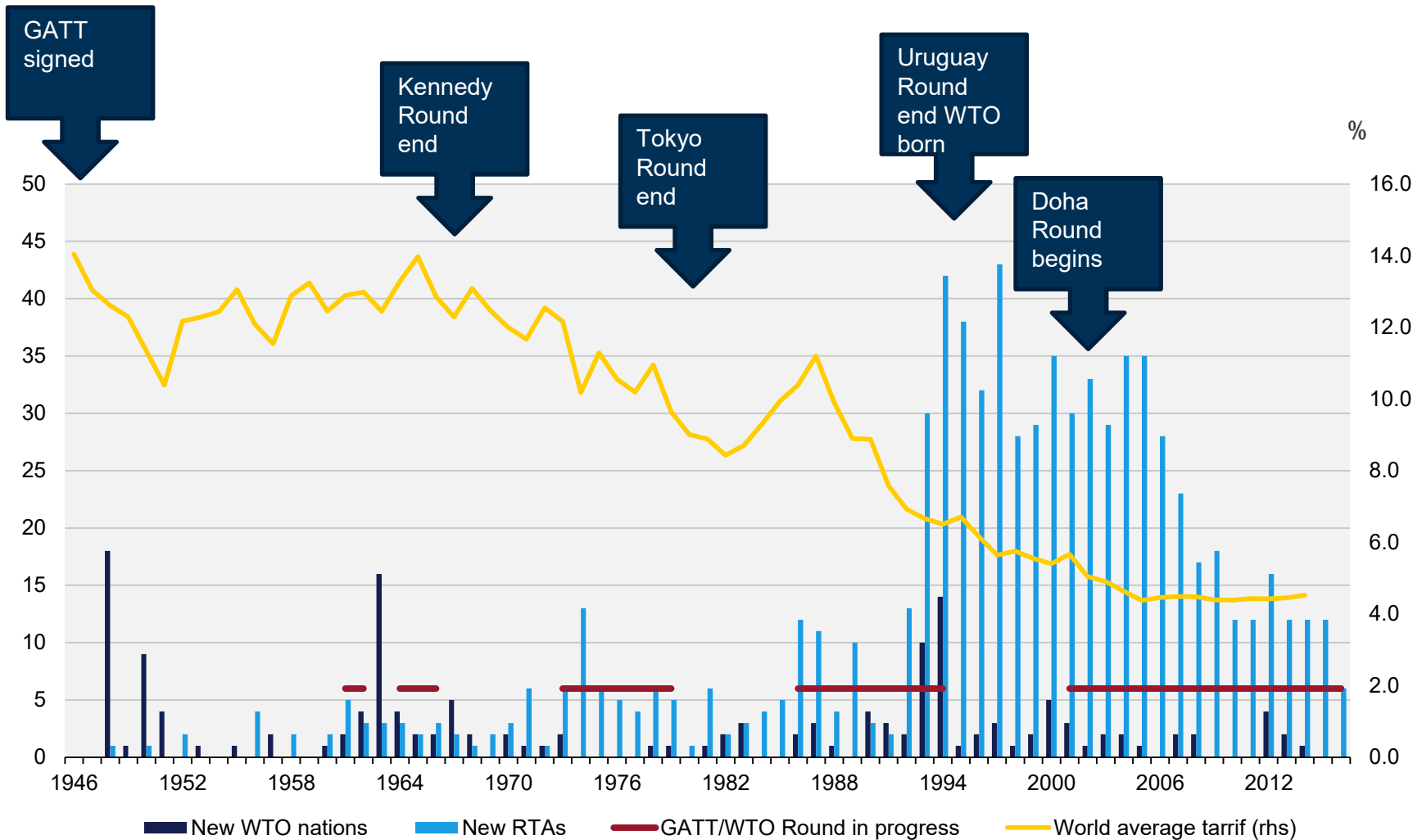
Source: Bloomberg, SPCS10Index (S&P Case- Schiller 10 City Composite Home Price NSA Index), 10 June 2018

Portfolio relative to Benchmark



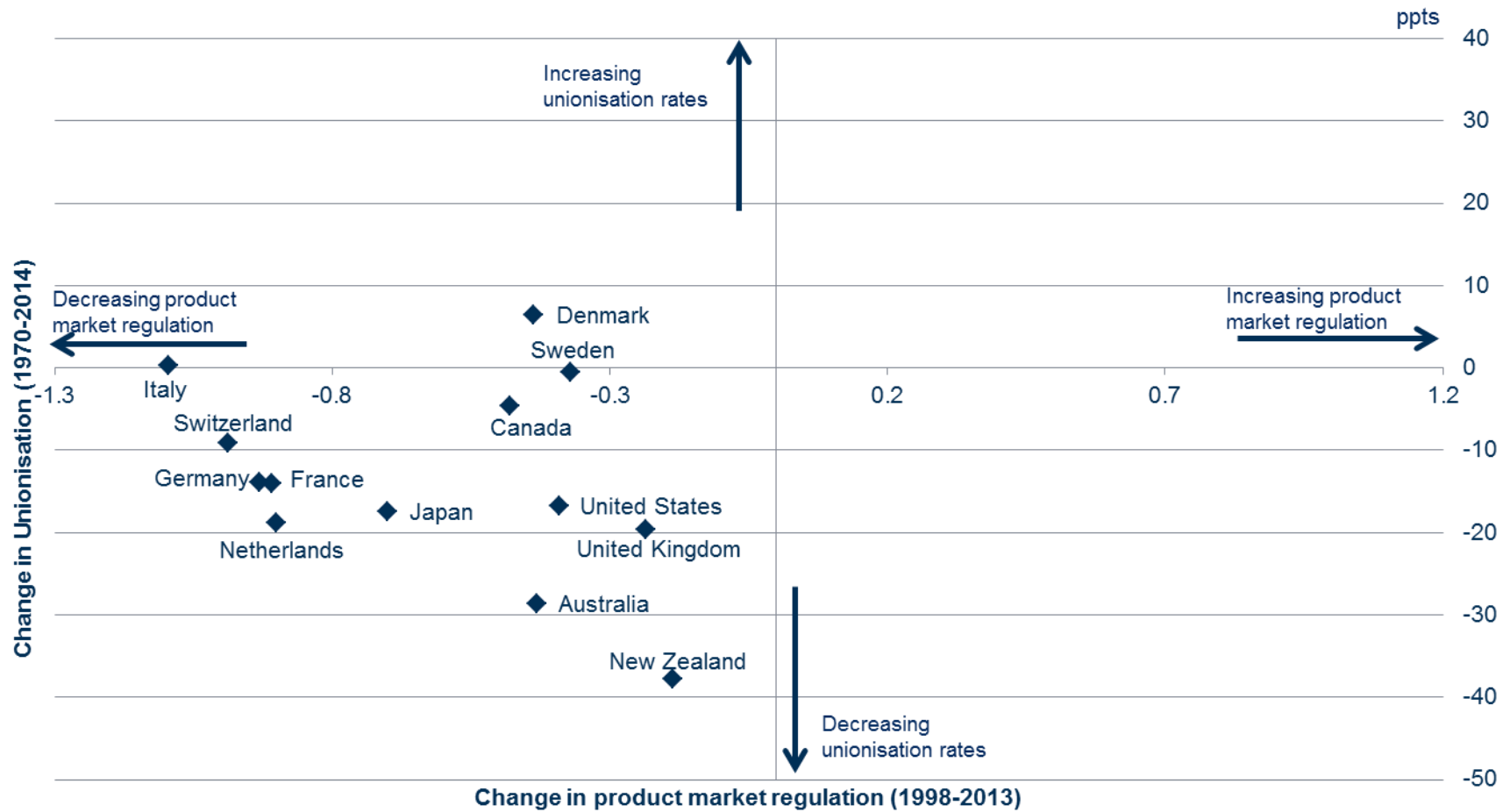
Source: Aberdeen Standard Investments, SC RSIC model portfolio as of COB 07 June 2018. Please see important information at the back

Global trade barriers have fallen significantly over recent decades



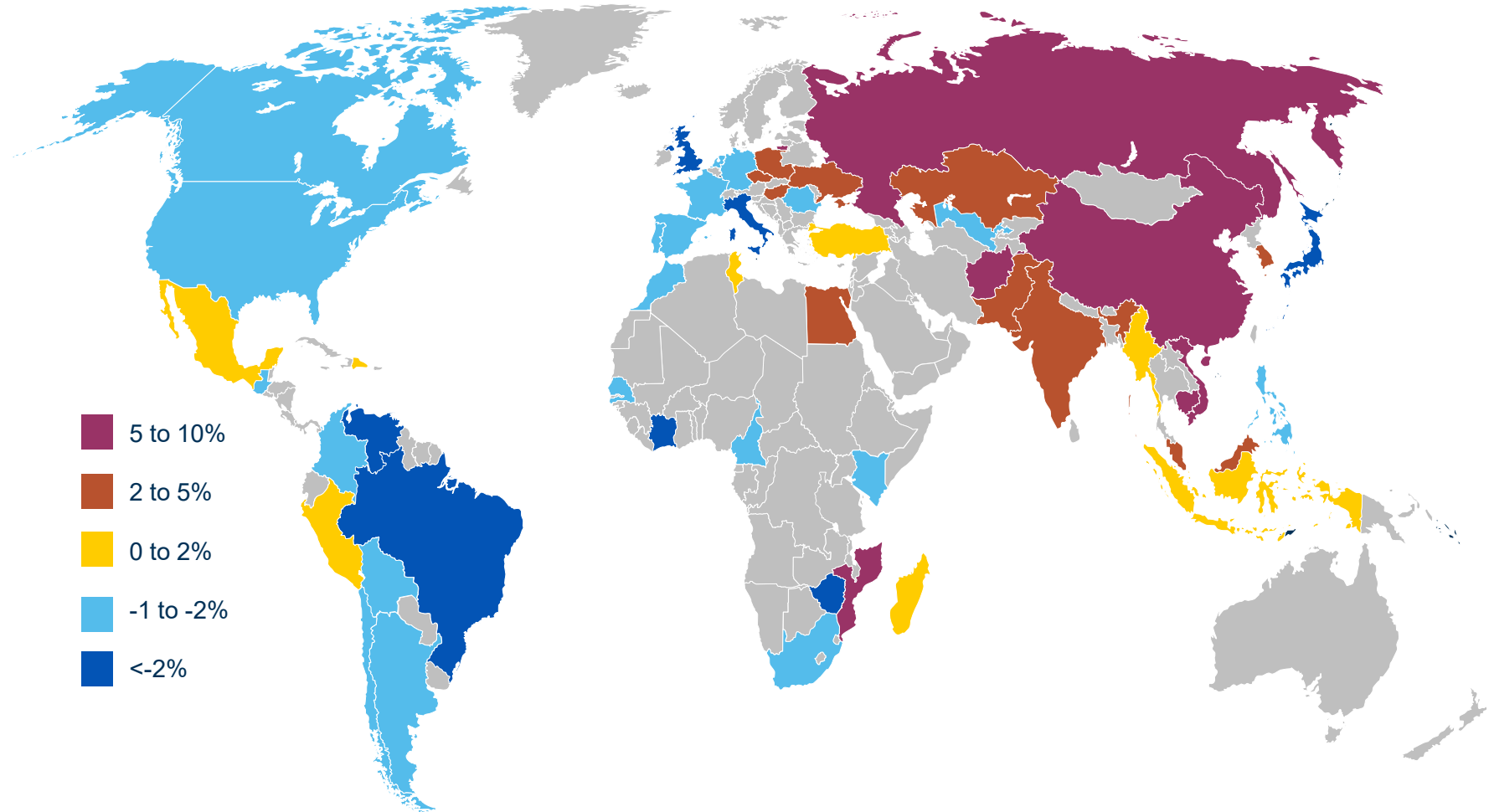
Source: Daniel Gros (2016), Clemens and Williamson (2004), WTO database

Matched by broad-based domestic deregulation



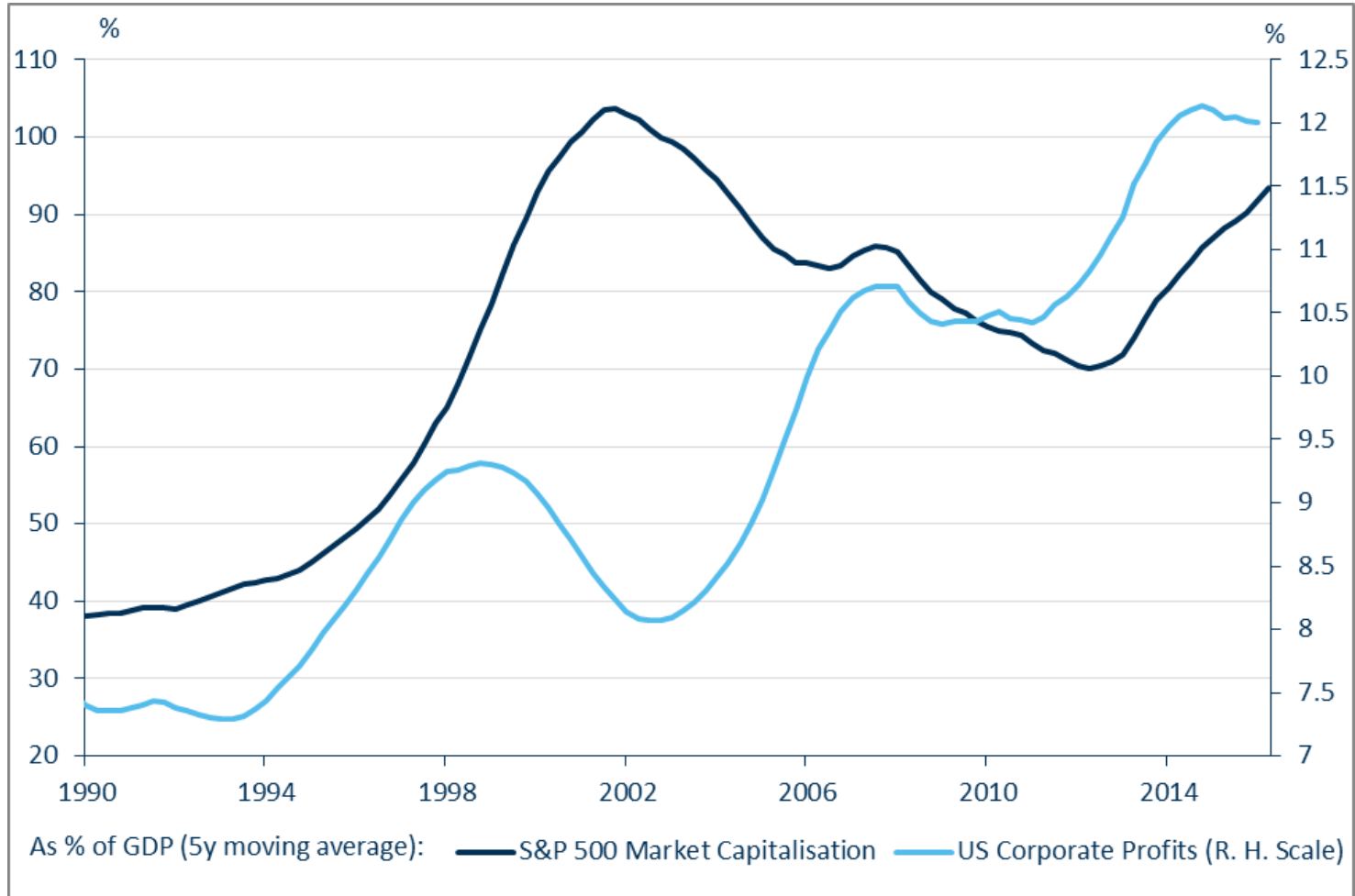
Source: OECD, 2016

A reorientation of global manufacturing activity



Annual manufacturing GDP growth relative to world average 1995 - 2007

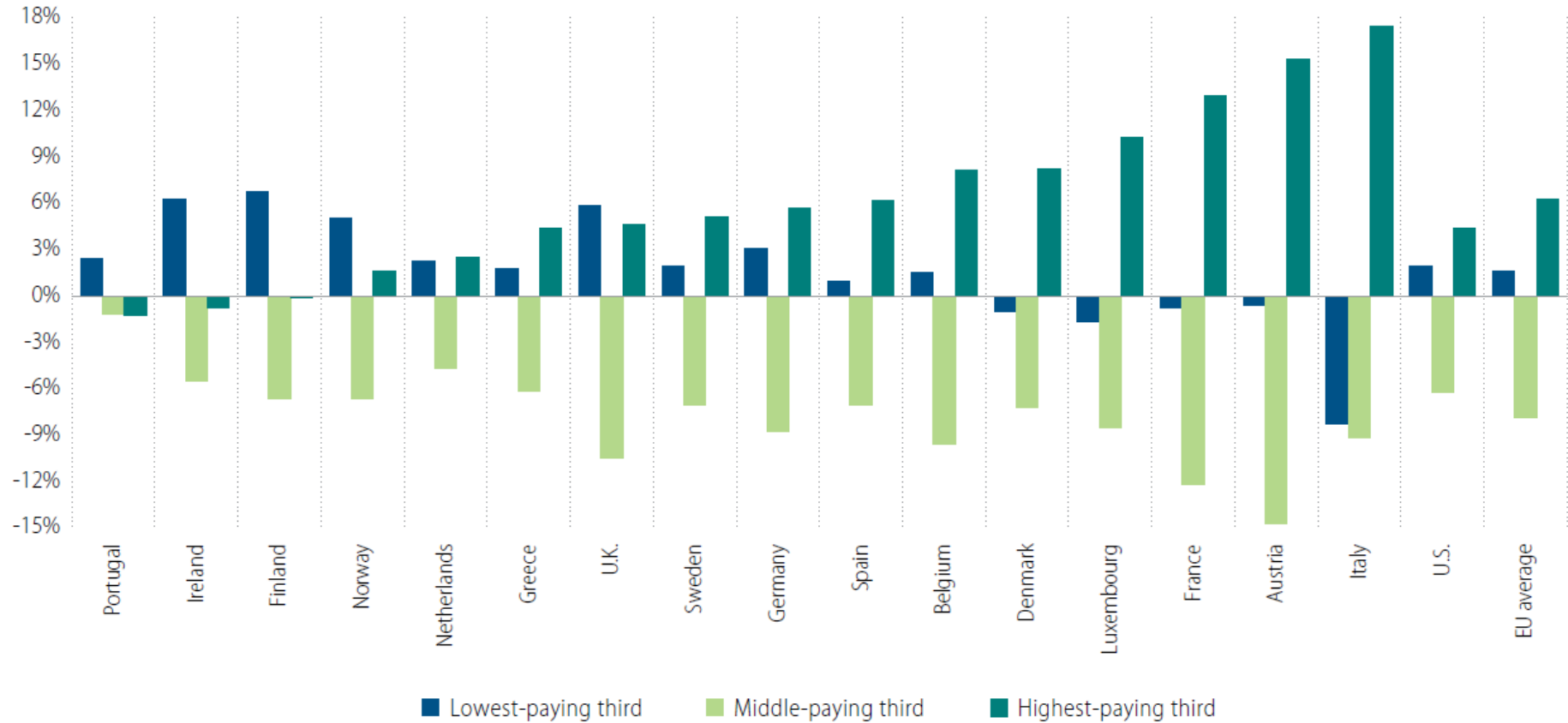
The danger for markets is clear?



Source: Aberdeen Standard Investments

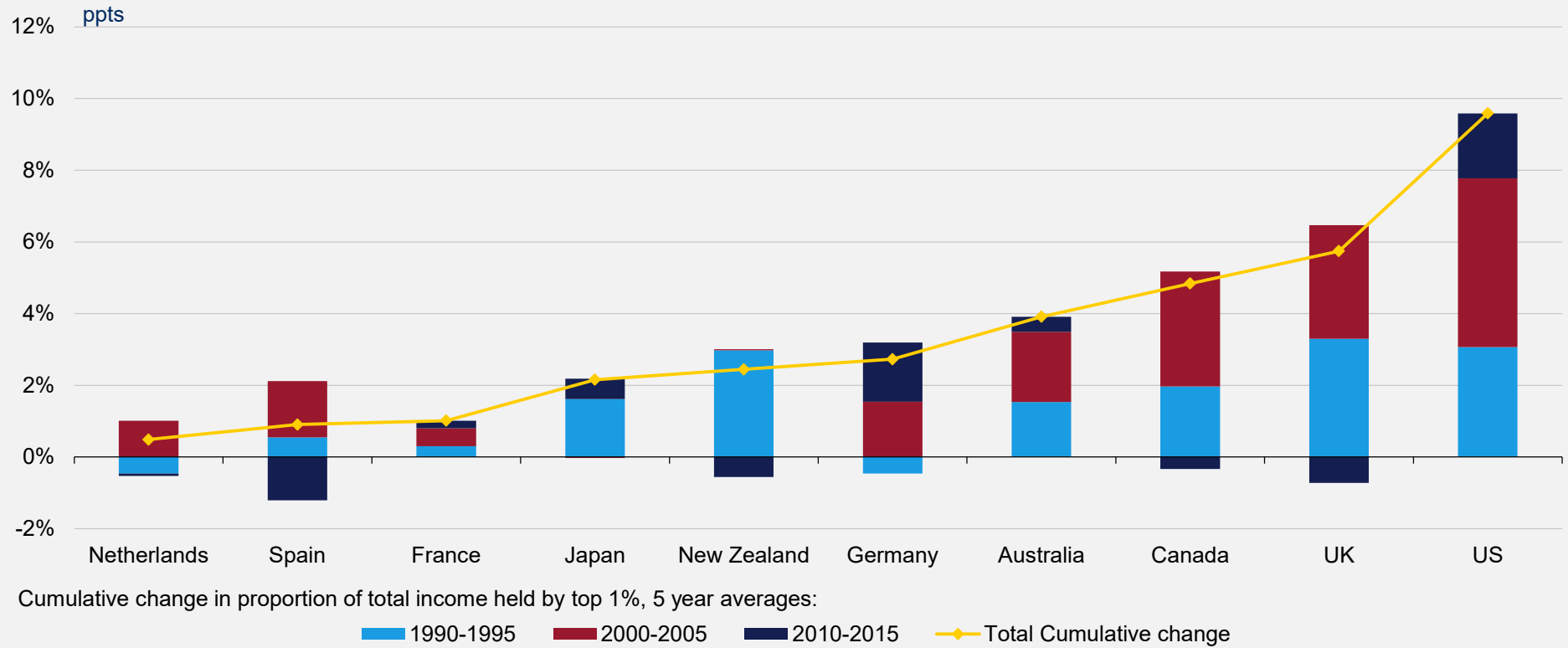
And the hollowing out of middle class jobs

Percentage change in employment shares



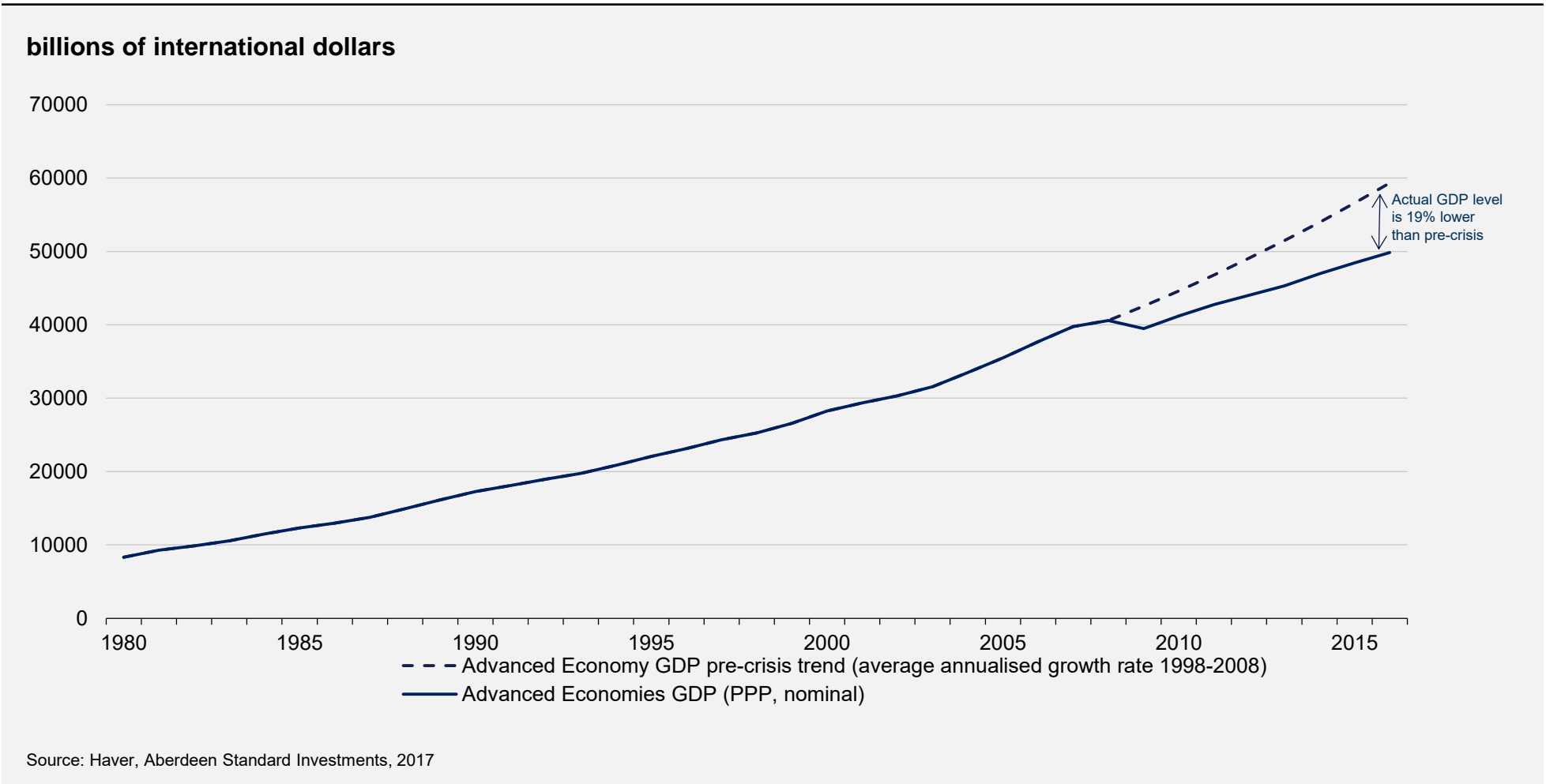
Change in employment shares by occupation. Occupations grouped by wage tercile. 1993-2006.
Source: Goos, Manning and Salomons, 2009a – referenced by Autor 2010

With top earners the biggest absolute and relative beneficiaries



Initial base years: 1980-1985. Source: OECD, 2016

Aggregate result of the Financial Crisis



A dismal future for globalization?

- Even before Trump's election global trade and capital market integration was slowing for both cyclical and structural reasons
- Though globalization has been good for growth and only one driver of inequality, it has become a scapegoat for broader economic and social pressures
- Populism will not work, but the West is unlikely to lead a new wave of globalization unless it can reconcile open markets with more stable and evenly distributed growth, as well as greater cross-border democratic accountability
- The best case scenario over the next five years is that globalization continues, albeit slowly, with China and other emerging markets taking the lead – Chinese non-tariff barriers to trade the biggest obstacle to progress
- The worse case scenario is that globalization reverses amidst a substantial rise in protectionism, removing another pillar supporting the global economy at a time when deteriorating demographic and productivity trends are already weighing on potential growth

Important Information

All sources within this presentation are Standard Life Investments as of March 31, 2018 unless otherwise stated.

The information shown relates to the past. Past performance is not a guide to the future. The value of investment can go down as well as up.

All information, opinions and estimates in this document are those of Standard Life Investments, and constitute our best judgement as of the date indicated and may be superseded by subsequent market events or other reasons.

This material is for informational purposes only and does not constitute an offer to sell, or solicitation of an offer to purchase any security, nor does it constitute investment advice or an endorsement with respect to any investment vehicle.

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All opinions and estimates in this presentation are those of Standard Life Investments, and constitute Standard Life Investments' best judgment as of the date indicated. The information in this material is only as current as the date indicated, and may be superseded by subsequent market events or for other reasons. Statements concerning market trends are based on current market conditions, which may fluctuate. References to future returns are not promises or even estimates of actual returns that Standard Life Investments may achieve, and should not be relied upon. The forecasts contained herein are for illustrative purposes only and are not to be relied upon as advice or interpreted as a recommendation. In addition, the forecasts are based upon subjective estimates and assumptions about circumstance and events that may not yet have taken place or may never do so.

Unless otherwise stated performance is shown gross of fees and expenses, and includes the reinvestment of dividends and capital gain distributions where applicable. The performance of the strategy will be reduced by advisory and other fees charged to the strategy. Many factors affect performance including changes in market conditions and interest rates and in response to other economic, political, or financial developments. Investment return and principal value of your investment will fluctuate, so that when your investment is sold, the amount you receive could be less than what you originally invested. Past performance is not a guide to or indicative of future results. Future returns are not guaranteed and a loss of principal may occur.

A schedule of fees is described in Part II of Form ADV, which is available upon request. To illustrate an account subject to an investment advisory fee of 1% per annum growing at an annual rate of 8.2% for a five year period would only produce a 7.1% annual return. The returns and fees experienced by a particular client will be different than the example shown. Investments are not insured by the FDIC (or any other state or federal agency), are not guaranteed by any bank, and may lose value.

Fees are also described in the Standard Life Investments (Corporate Fund) Ltd Form ADV Part II and may vary depending on, among other things, the applicable fee schedule and account size.

Standard Life Investments is engaged in a joint venture with HDFC owning 40% of HDFC Asset Management Company.

Standard Life Investments is engaged in a strategic alliance with Sumitomo Mitsui Trust Bank.

SL Capital Partners (US) Ltd is a subsidiary of Standard Life Investments. Standard Life Investments owns 60%.

No investment process is free of risk and there is no guarantee that the investment process described herein will be profitable. The strategy allocation percentages set forth herein are estimates and actual percentages may vary from time to time. The types of investments presented herein will not always have the same comparable risks and returns. Please see the private placement memorandum for a description of the investment, as well as the risks associated with that investment. Please note that the strategy may elect to invest assets in different investment sectors from those depicted herein, which may entail additional and/or different risks. The actual performance of the portfolio will depend on the Investment Manager's ability to identify and access appropriate investments, and balance assets to maximize return while minimizing risk. The actual investments in the portfolio may or may not be the same or in the same proportion as those shown herein.

Portfolios within the composite are benchmarked to an appropriate market index. The benchmark does not reflect any fees, brokerage commissions or other expenses and does not reflect the reinvestment of dividends.

The GARS representative account is the GARS Cayman Master portfolio. This account is available to US investors. Performance may differ based on factors which include exchange rate fluctuations, cash flows, fees, product structure differences, etc. The GARS sample account is the GARS £, Institutional Pooled Pension Portfolio. This account is not available to US investors.

The GFS Sample portfolio is the GFS institutional SICAV Portfolio. This strategy is available to US investors via a separate account

Important Information

The following benchmarks are broad based indices and are used for comparative/illustrative purposes only. Comparisons to benchmarks have limitations because benchmarks have volatility and other material characteristics that may differ from the portfolio. For example, investments made for the portfolio may differ significantly in terms of security holdings, industry weightings and asset allocation from those of the benchmark. Accordingly, investment results and volatility of the portfolio may differ from those of the benchmark. Also, the indices noted in this presentation are unmanaged, are not available for direct investment, and are not subject to management fees, transaction costs or other types of expenses that the portfolio may incur. In addition, the performance of the indices reflects reinvestment of dividends and, where applicable, capital gain distributions. Therefore, investors should carefully consider these limitations and differences when evaluating the comparative benchmark data performance.

1 Month USD LIBID

Standard 1 Month US LIBOR is sourced from Thomson Reuters DataStream on a 5 day calendar and converted to a 7 day calendar. The daily return of the 1 Month US LIBOR is calculated on the new 7 day calendar and converted to the 1 Month US LIBID by geometrically calculating 12.5 basis points over 365 days and removing this value(0.000342) from the daily return of the standard 1 Month US LIBOR.

6 Month LIBOR

One of the seven different maturities of a benchmark rate that some of the world's leading banks charge each other for short term loans. LIBOR (London Interbank Offered Rate) is administered by the Intercontinental Exchange Benchmark Administration and is based on five currencies which include US Dollar, Euro, Pound Sterling, Japanese Yen, and Swiss Franc.

MSCI World Index

MSCI World Index is a free float-adjusted market capitalization weighted index of over 1600 world stocks that is designed to measure the equity market performance of developed markets. The MSCI World Index consists of the following 23 developed market country indices: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the United Kingdom, and the United States

The US GARS composite is comprised of portfolios whose objective is to achieve a target of cash + 5% by investing in securities that perform over a 2-5 year time horizon. While the strategy's objective is to seek to provide consistent returns with 4-8% tracking error, it does not imply that this strategy shall share, or attempt to share, the same or similar characteristics of the benchmark or attempt to track the benchmark. Sub-advised and portfolios constrained by guidelines and restrictions are excluded from the composite. Standard Life Investments maintains a complete list and description of composites, which is available upon request.

An investment in the portfolio is speculative and involves certain risks. Prospective investors should ensure that they: (1) understand the nature of the investment and the extent of their exposure to risk; (2) have sufficient knowledge, experience and access to professional advisors to make their own legal, tax, accounting, and financial evaluation of the merits and risks of participating in an investment in the portfolio; and (3) consider the suitability of investing in the portfolio in light of their own circumstances and financial condition. The portfolio investment program is not suitable as the sole investment vehicle for an investor and should be part of an overall investment strategy.

Due to among other things, the volatile nature of the markets and the investment strategies discussed herein, they may only be suitable for certain investors. No investment strategy or risk management technique can guarantee return or eliminate risk in any market environment. Further, this information may be amended or revoked at any time without notice.

The strategy may use alternative investment techniques (such as leverage, short selling, and the use of derivatives) which carry additional risks. The low initial margin deposits normally required to establish a position in such instruments may permit a high degree of leverage. As a result, a relatively small movement in the price of a contract may result in a profit or loss that is high proportion to the amount of portfolios actually places as initial margin and may result in a disproportionate loss exceeding any margin deposited.

Transactions on over-the-counter derivatives may involve additional risk as there is no exchange on which to close out a position, only the original counterparty. Such transactions may therefore be difficult to liquidate, to value, or to assess the exposure.

The strategy may at times use certain types of investment derivatives, such as options, futures, forwards and swaps. These instruments involve risks different from, and in certain cases, greater than, the risks presented by more traditional investments.

Important Information

To the extent the portfolio invests in foreign securities, its performance will be influenced by political, social and economic factors affecting investments in foreign companies. Special risks associated with investments in foreign companies include exposure to currency fluctuations and controls, less liquidity, less developed or less efficient trading markets, less governmental supervisor and regulation, lack of comprehensive company information, political instability, greater market volatility, and differing auditing and legal standards.

Equity securities are generally subject to varying degrees of market factors, including but not limited to, market sector, market liquidity, issuer and investment style risk.

The foregoing list of certain factors does not claim to be a complete list or explanation of the risks involved in an investment in the portfolio. Investors should read the strategy's documents and consult with his/her own advisors before deciding to invest. In addition, as the investment markets and portfolio develop and change over time, an investment may be subject to additional and different risk factors. No assurance can be made that profits will be achieved or that substantial losses will not be incurred. Risks are also described in the Standard Life Investments (Corporate Fund) ADV Form Part II and may vary depending on the type of investment.

Any simulated or hypothetical performance results have certain inherent limitations. Unlike the results shown in an actual performance record, these results do not represent actual trading. Also, because these trades have not been actually executed, these results may have under- or over-compensated for the impact, if any, of certain market factors, such as lack of liquidity. Simulated or hypothetical trading programs in general are also subject to the fact that they are designed with the benefit of hindsight.

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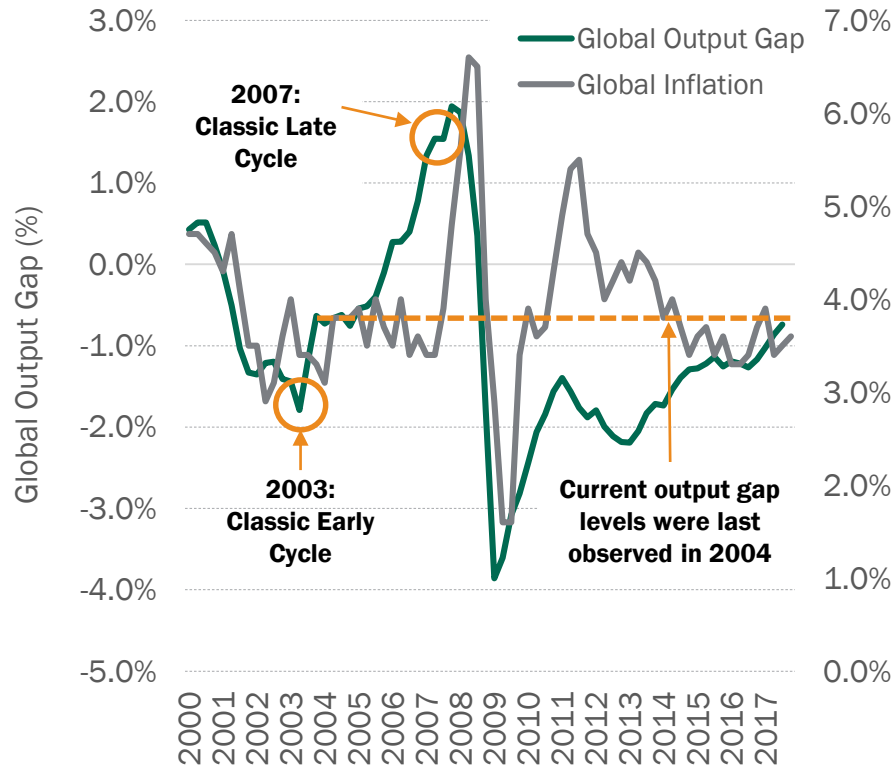
2018

The Case for Mid-Cycle, the Reflationary Regime, & Disruption

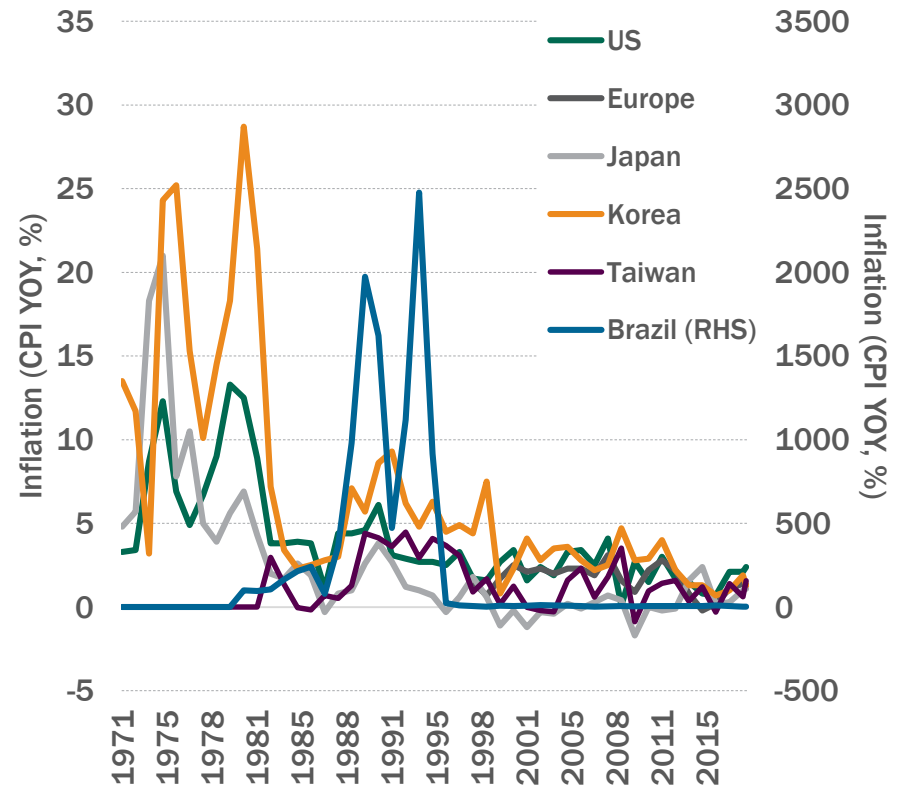
Where Are We in the Business Cycle?

Economic Indicators

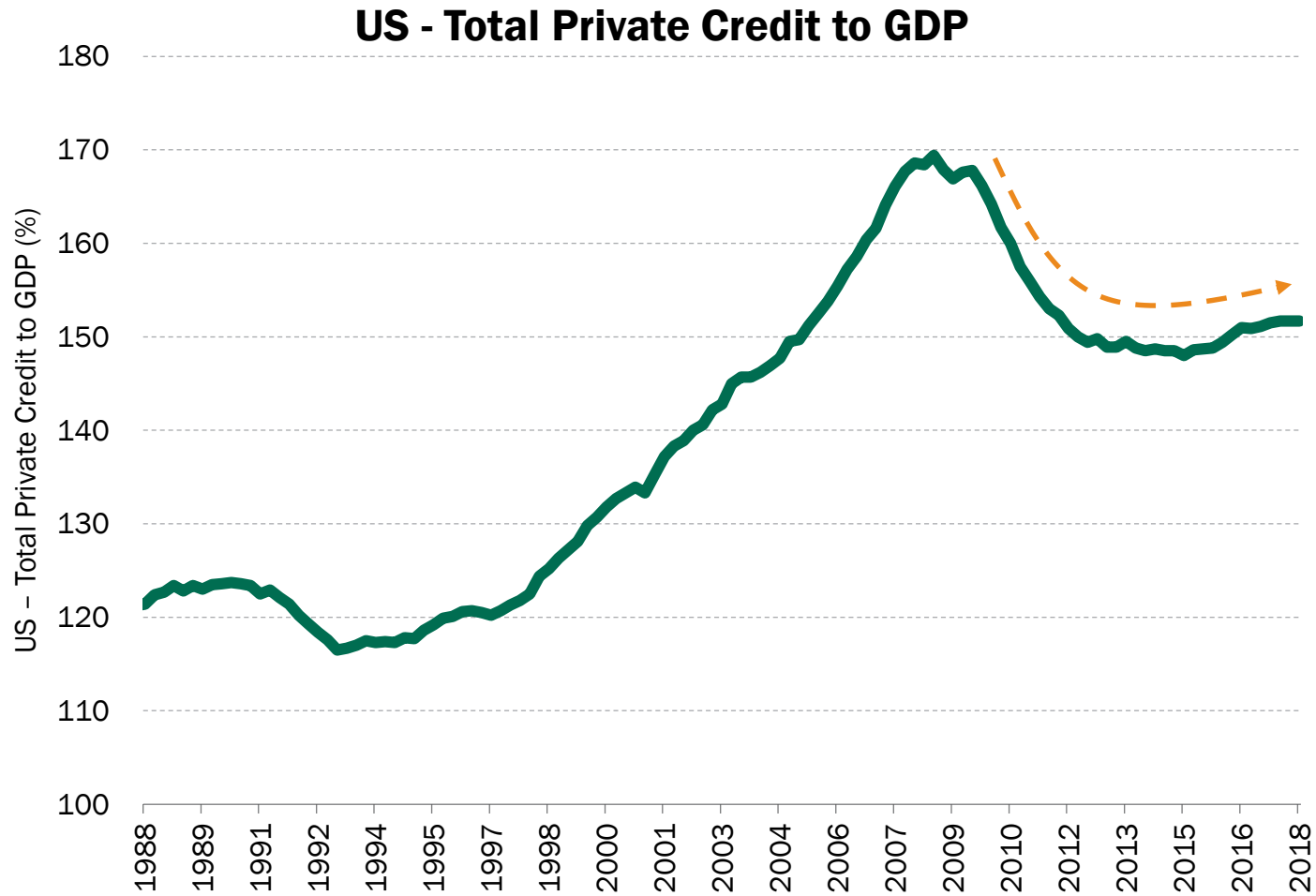
Global Output Gap & Inflation¹



Inflation (CPI YOY)²



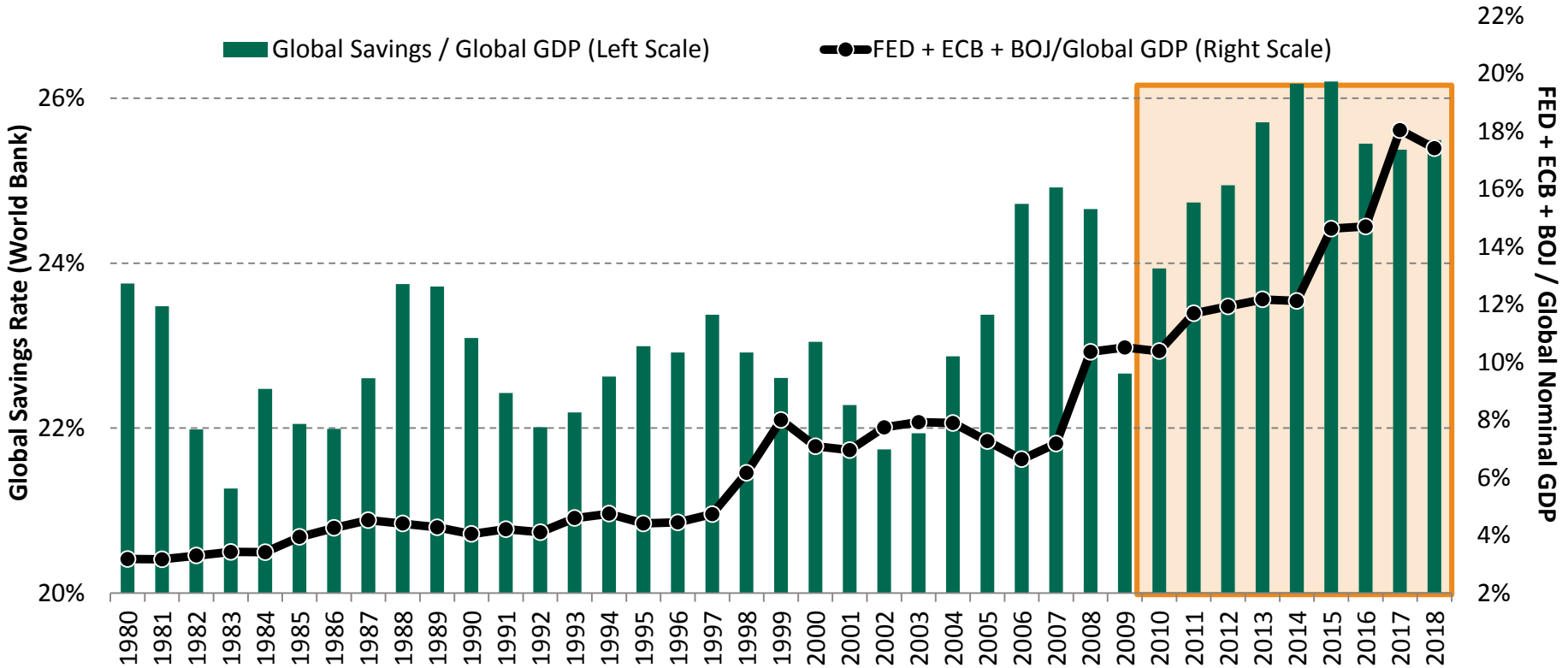
End of Private Sector De-Leveraging



Post-Crisis Liquidity Trap and Savings Glut

The post financial crisis regime saw a global liquidity trap and savings glut; consequently, low risk instruments outperformed high risk instruments.

Global Savings/Global GDP & FED+ECB+BoJ/Global GDP

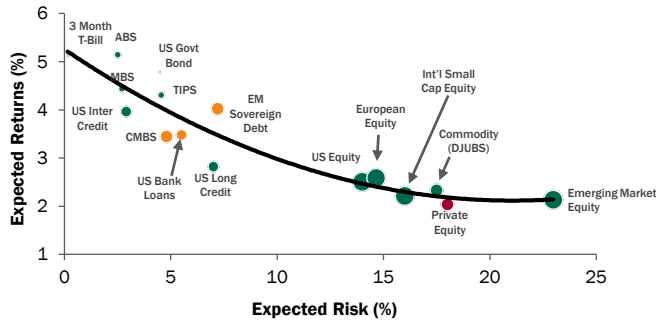


Evolving Capital Market Line Anchors

Our View on Fundamentals

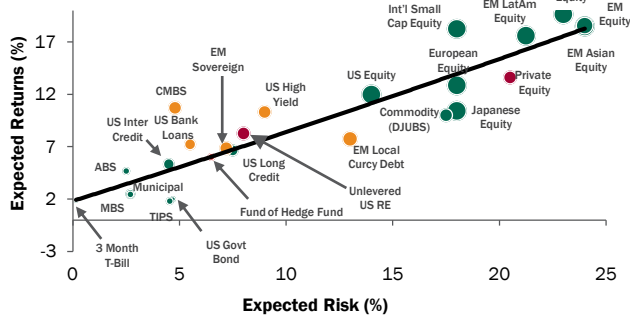
June 2007

Inverted with low dispersion



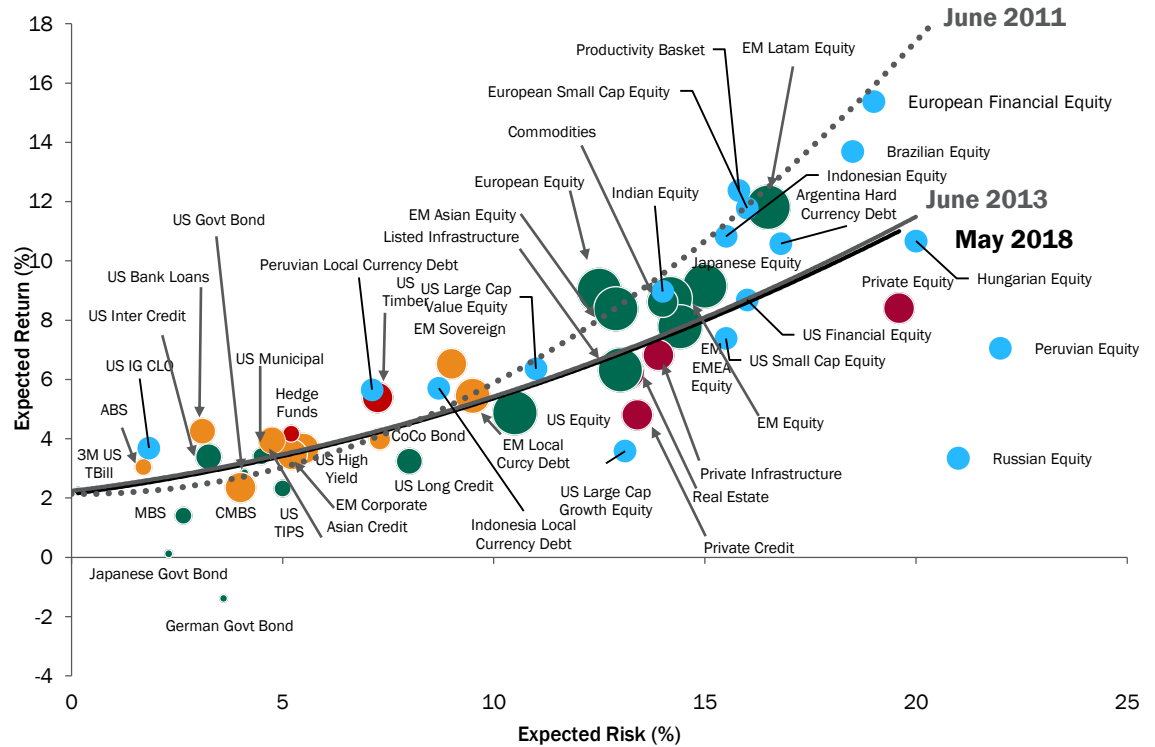
June 2009

Upward sloping with low dispersion

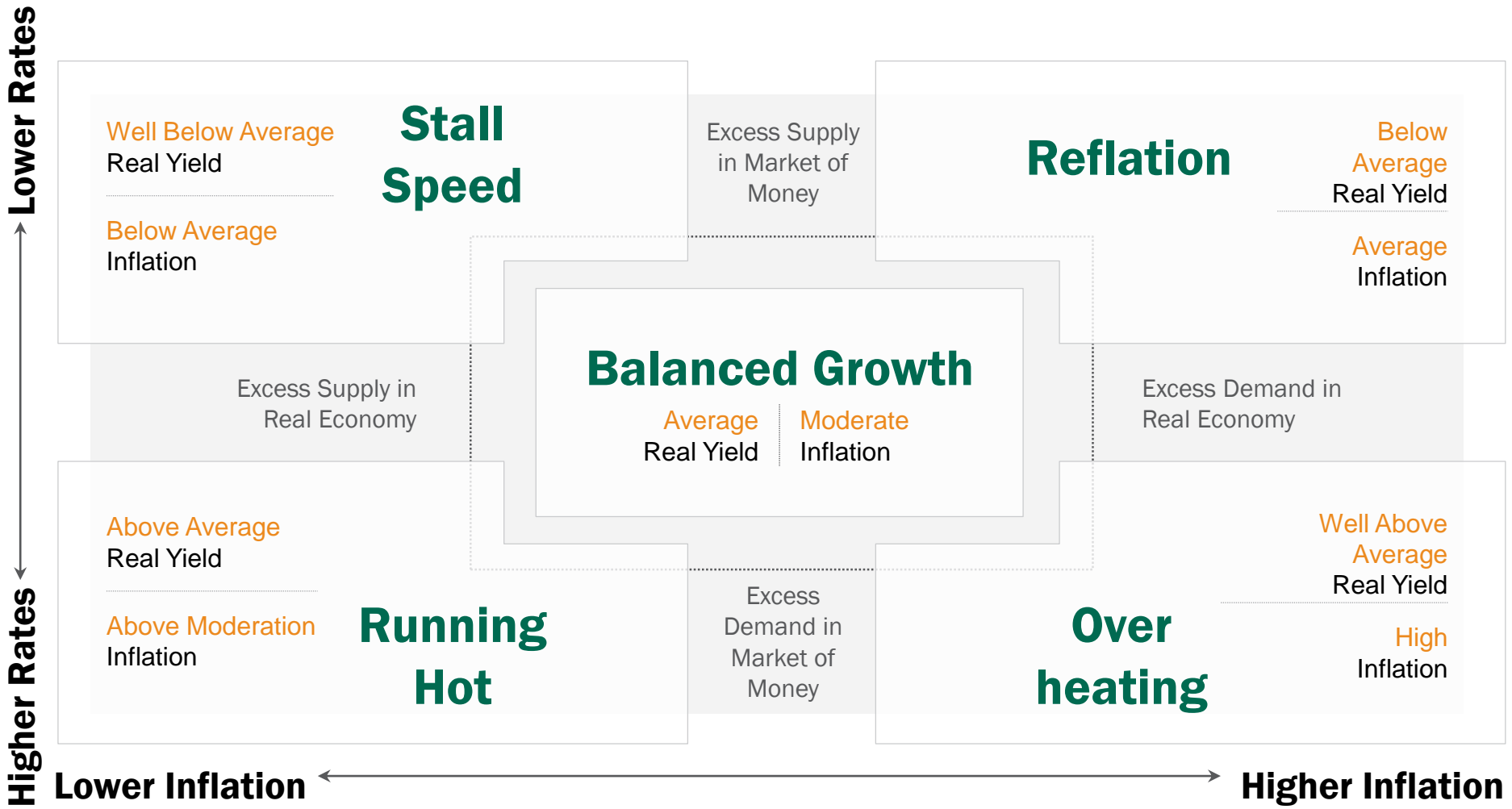


May 2018

Upward sloping line, yet flatter with high dispersion indicating selective opportunities



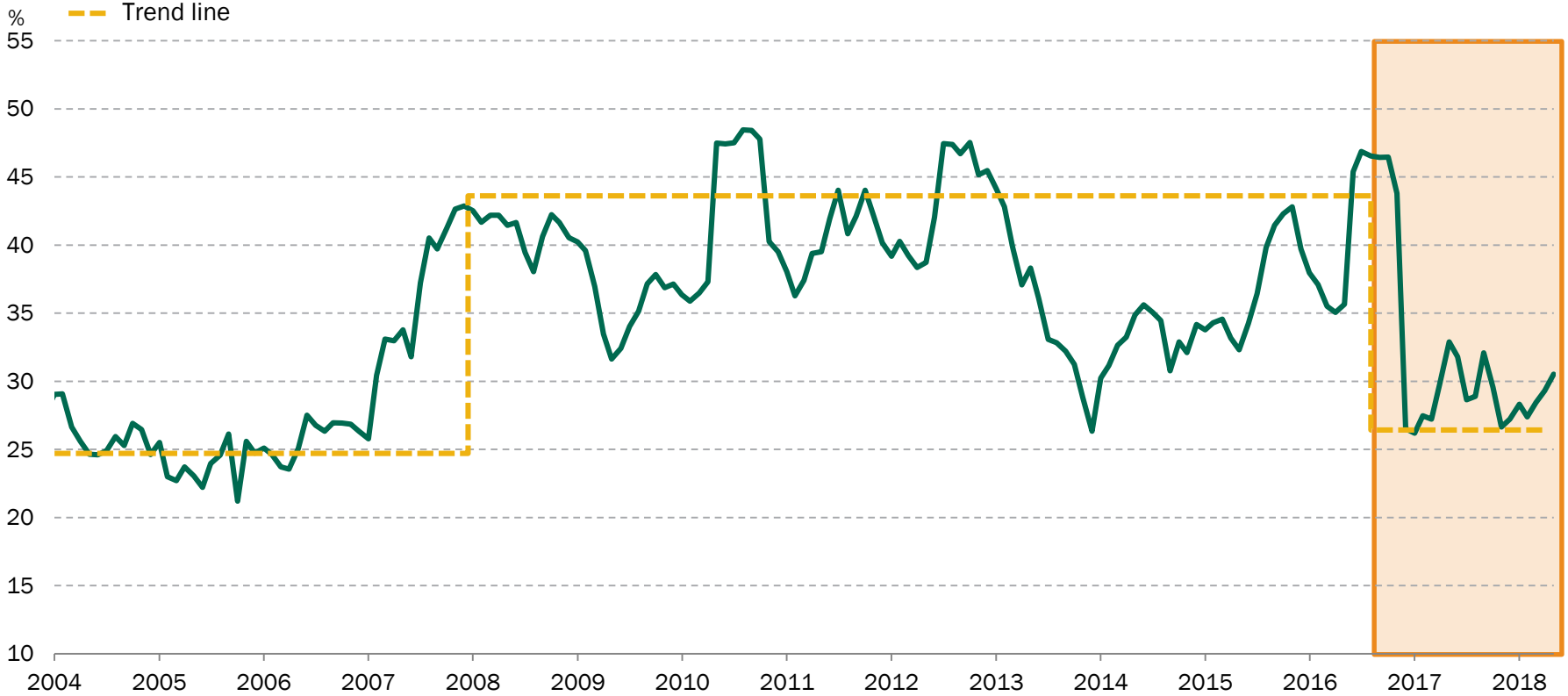
Regimes Are Not Permanent, Yet Protracted Adjustment Periods Within and Across Business Cycles



Cross Asset Correlations Have Broken Down Confirming Regime Shift And Are Persisting At Low Levels

The drop in cross-asset correlations is expected to persist, indicative of regime shift.

Morgan Stanley Global Correlation Index (6 Months)

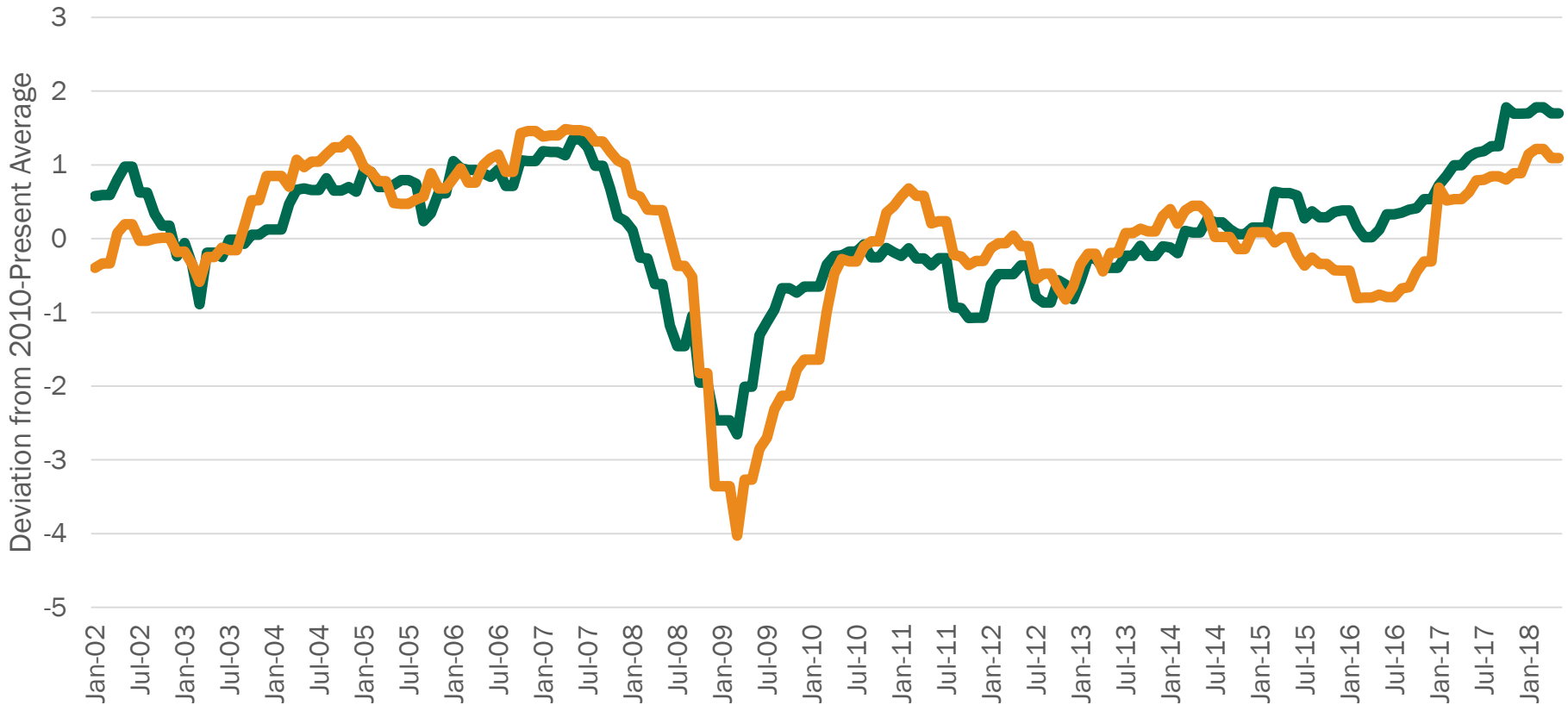


We're Likely Mid-Cycle

Global Confidence & Productivity Indicate Mid Cycle Phase

Global Confidence Began Rising in 2016

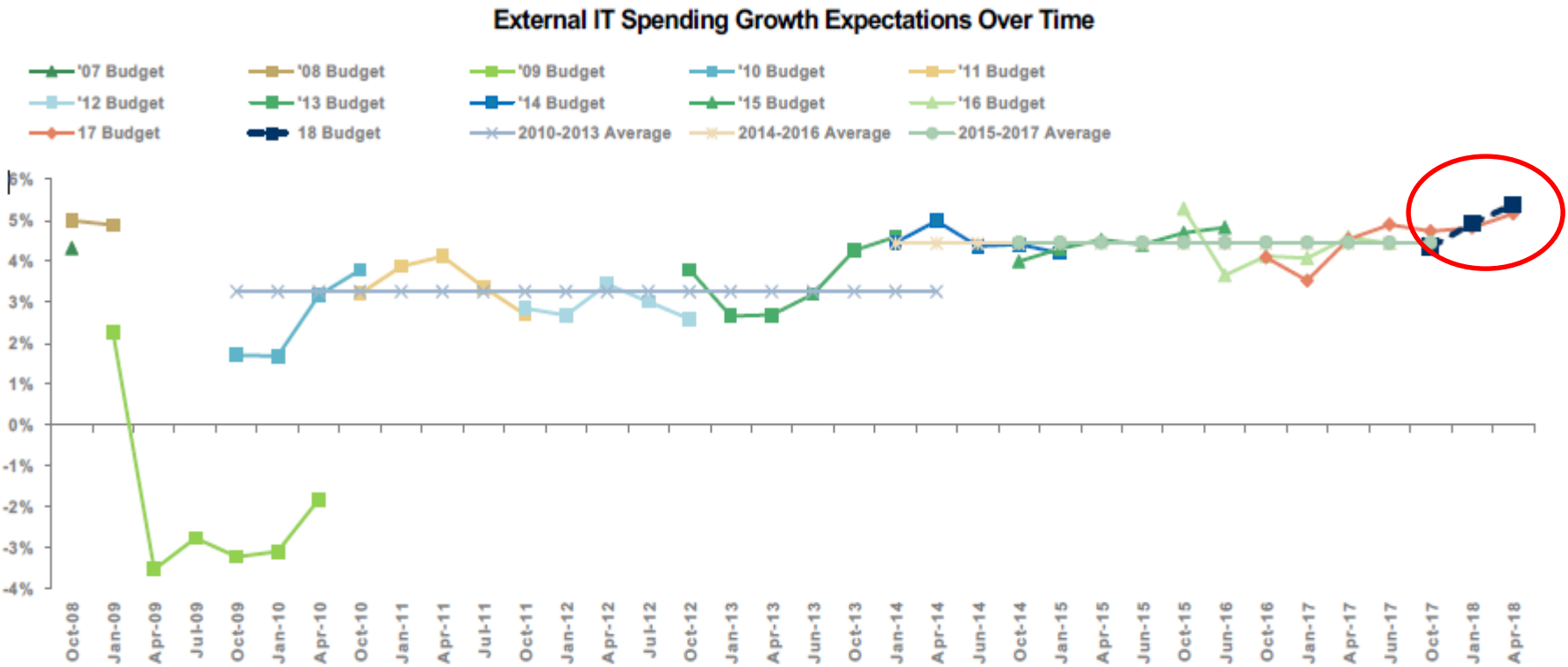
Consumer Confidence Industrial Confidence



The Capability Cycle Ahead

“CIO’s look for 5.4% growth in 2018 IT spending, up from 4.9% in January, the most bullish CIO growth expectation in 10 years” – Morgan Stanley Research¹.

External IT Budget Growth Expectations By Year (US & Europe)



New Technology Takes Awhile

Now is the 30 Years Later from Mid-Late 90's

Industrial Revolutions:

(All rules and solutions defined through human input whether physically or mentally)

- Factory System
- New Energy Revolution
- Internal Combustion Engine
- Manual Manipulation
- Human Resources – Division of Labor

Deterministic Rules Defined Capabilities*

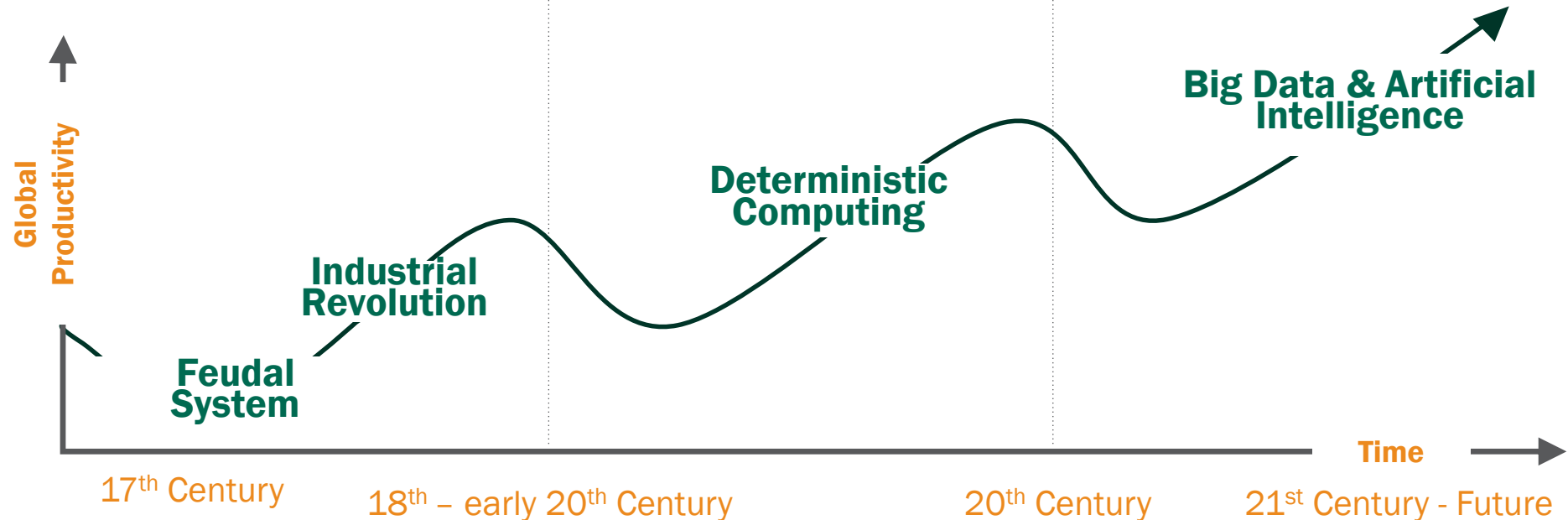
(Specify each step of the operation and any possible routs through computing power)

- Transactional Processes
- Digital Communications
- Data Storage
- Static Data Analysis

AI Solution Defined Capabilities*:

(Methodologies of Programming through machine learning, neural networks, search & optimization, and fuzzy logic)

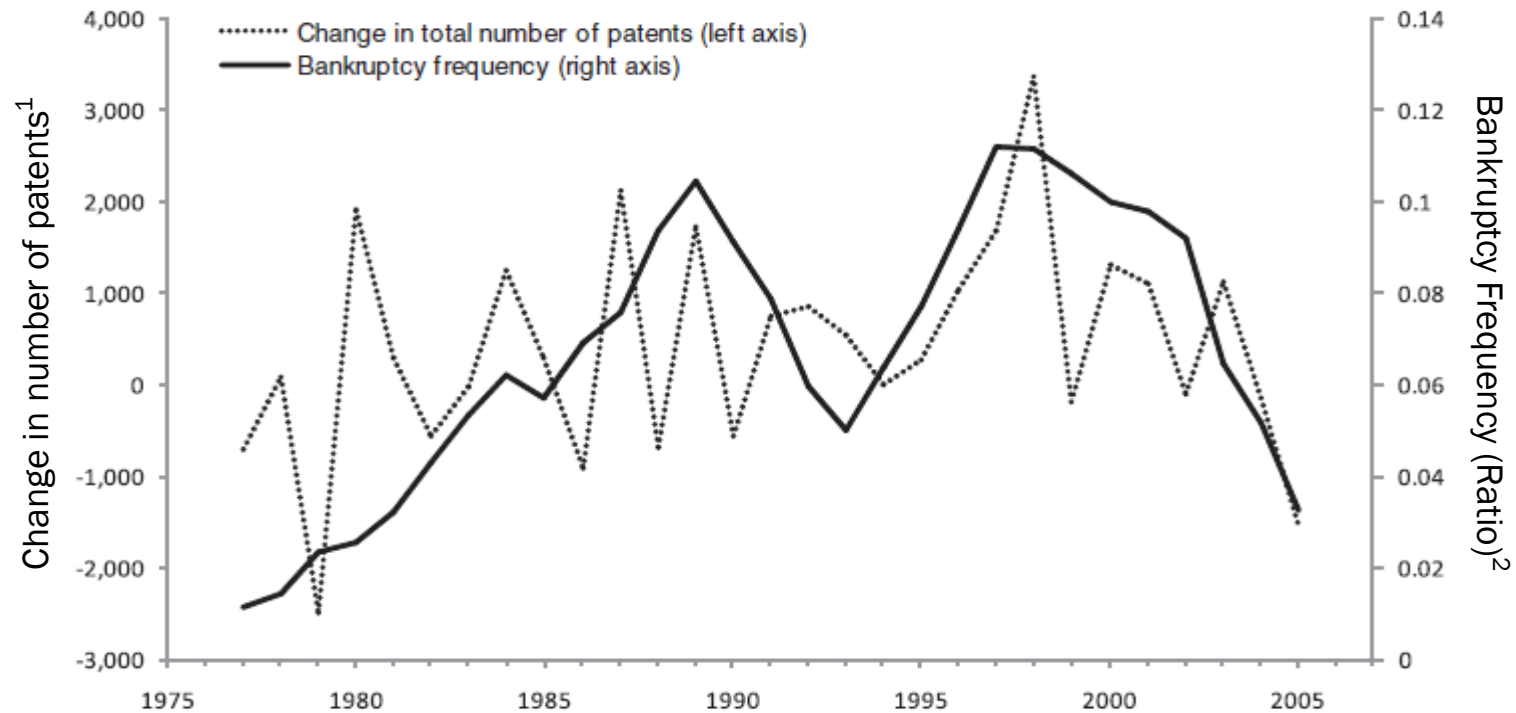
- Decision Making
- Pattern Recognition
- Natural Language Recognition
- Motion and Manipulation
- Pattern Recognition
- Visual and Voice Recognition



Surges in New Technologies and The Disruption They Bring Lead to Periods of Higher Default

Periods of high technological innovations and disruptions can bring periods of higher defaults, emphasizing an environment distinguishing between winners and losers.

Patents vs. Bankruptcies



Convictions for Managing Through Disruption

- Active is now a must. The herd is indexing to afford private investments where crowding is muting illiquidity premiums and where unforeseeable disruption will lead to locked in failure.
- The sweet spot for passive is behind when winners neglected investing to extend competitive advantage; indexing is “expensive” when more companies go to zero.
- Either future proof your private investments, or keep your powder dry (and liquid).
- Financials & Productivity are the leaders of Reflation.
- Markets do well as policy rates come off the floor to neutral, and poorly thereafter. Later cycle jitters to end when Fed pauses at neutral next Spring.

Disclosures

Multi-Asset Strategy Endnotes

BENCHMARK INFORMATION: Benchmarks are used for purposes of comparison and the comparison should not be understood to mean there would necessarily be a correlation between a fund or strategy's performance and any benchmark cited herein. An investor generally cannot invest in an index.

The MSCI All Country World Index (Net) USD Unhedged (MSCI ACWI) is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets. As of 3/31/2015 the MSCI ACWI consists of 46 country indexes comprising 23 developed and 23 emerging market country indexes. DM markets include Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the UK and the US. EM countries include: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Peru, Philippines, Poland, Russia, Qatar, South Africa, Taiwan, Thailand, Turkey and United Arab Emirates. MSCI makes no express or implied warranties or representations and shall have no liability whatsoever with respect to any MSCI data contained herein. The MSCI data may not be further redistributed or used as a basis for other indices or any securities or financial products. This document is not approved or produced by MSCI.

The Citigroup World Government Bond Index (WGBI) USD Unhedged measures the performance of fixed-rate, local currency, investment grade sovereign bonds. The WGBI is a widely used benchmark that currently comprises sovereign debt from over 20 countries, denominated in a variety of currencies, and has more than 25 years of history available. The WGBI provides a broad benchmark for the global sovereign fixed income market. Sub-indices are available in any combination of currency, maturity, or rating. Live data is available from 1 November 1986 to present and back dated from 31 December 1984 to 31 October 1986.

JP Morgan Global Bond Index EM (Global Diversified) Local Currency contains liquid, fixed rate government securities of emerging markets countries denominated in local currency, including Indonesia, Malaysia, Thailand, Hungary, Poland, Russia, Turkey, Brazil, Chile, Columbia, Mexico, Peru, Egypt and South Africa.

The Bloomberg Commodity Index is calculated on an excess return basis and reflects commodity futures price movements. The index rebalances annually weighted 2/3 by trading volume and 1/3 by world production and weight-caps are applied at the commodity, sector and group level for diversification. Roll period typically occurs from 6th-10th business day based on the roll schedule. The pricing history starts 2 January 1991.

CAPITAL MARKET LINE: The Capital Market Line ("CML") is a tool developed and maintained by PineBridge Investments' Global Multi-Asset team. It has served as the team's key decision support tool in the management of many of our asset allocation products. The CML is based on PineBridge's estimates of forward-looking 5-year returns and standard deviation. It is not intended to represent the return prospects of any PineBridge products, only the attractiveness of asset class indices compared across the capital markets. The CML quantifies several key fundamental judgments made by the Global Multi-Asset Team for each asset class, which when combined with current pricing, result in our annualized return forecast for each class over the next five years. The expected return

for each asset class, together with our view of the risk for each asset class as defined by volatility, forms our CML. Certain statements contained herein may constitute "projections," "forecasts" and/or other "forward-looking statements" which do not reflect actual results and are based primarily upon applying retroactively a simulated set of assumptions to certain historical asset class financial information. Any opinions, projections, forecasts or forward-looking statements presented herein are valid only as of the date of this document and are subject to change. There can be no assurance that the expected returns will be achieved over any particular time horizon. For illustrative purposes only. We are not soliciting or recommending any action based on this material.

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- They 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;
- They are speculative and involve a high degree of risk;
- Investors could lose all or a substantial amount of their investment;
- Interests may be illiquid and there may be significant restrictions in transfer. There is no secondary market for interests, and none is expected to develop;
- They may be leveraged, and their performance may be volatile;
- They have high fees and expenses that will reduce returns;
- They may involve complex tax structures;
- They may involve structures or strategies that may cause delays in important tax information being sent to investors;
- They and their managers/advisers may be subject to various conflicts of interest;
- They may hold concentrated positions with a limited number of investments;
- They, or their underlying fund investments, may invest a substantial portion of their assets in emerging markets, which could mean higher risk;
- The list set forth here is not a complete list of the risks and other important disclosures associated with such investments and is subject to the more complete risk and disclosures contained in the applicable confidential offering documents;
- The investment manager has total trading authority over fund investments. The use of a single adviser applying generally similar trading programs could mean lack of diversification and, consequently, higher risk.

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Market Outlook & Portfolio Positioning

Mark A Bavoso, Global Multi-Asset Team

June 15, 2018



Global Multi-Asset Investment Outlook

Global Macro Views

Global growth stable at high level (3.4%), significant regional divergences opening up:

- US accelerating, led by fiscal spending; expect current pace (2.8-3%) to be sustained for next 2-3 quarters
- Fed on track to hike, surprising market expectations and dampening growth outside the US
- China stabilizing for now as discretionary policy tightening on hold; headwinds?
- EM ex-China hit by mini-tantrum (USD, political turbulence in Turkey, Brazil; Argentina concerns)
- Eurozone weaker than expected on stronger Euro, softer EM growth
- Inflation readings tepid in G-3, but poised to rise with tighter labor markets, wage growth accelerating

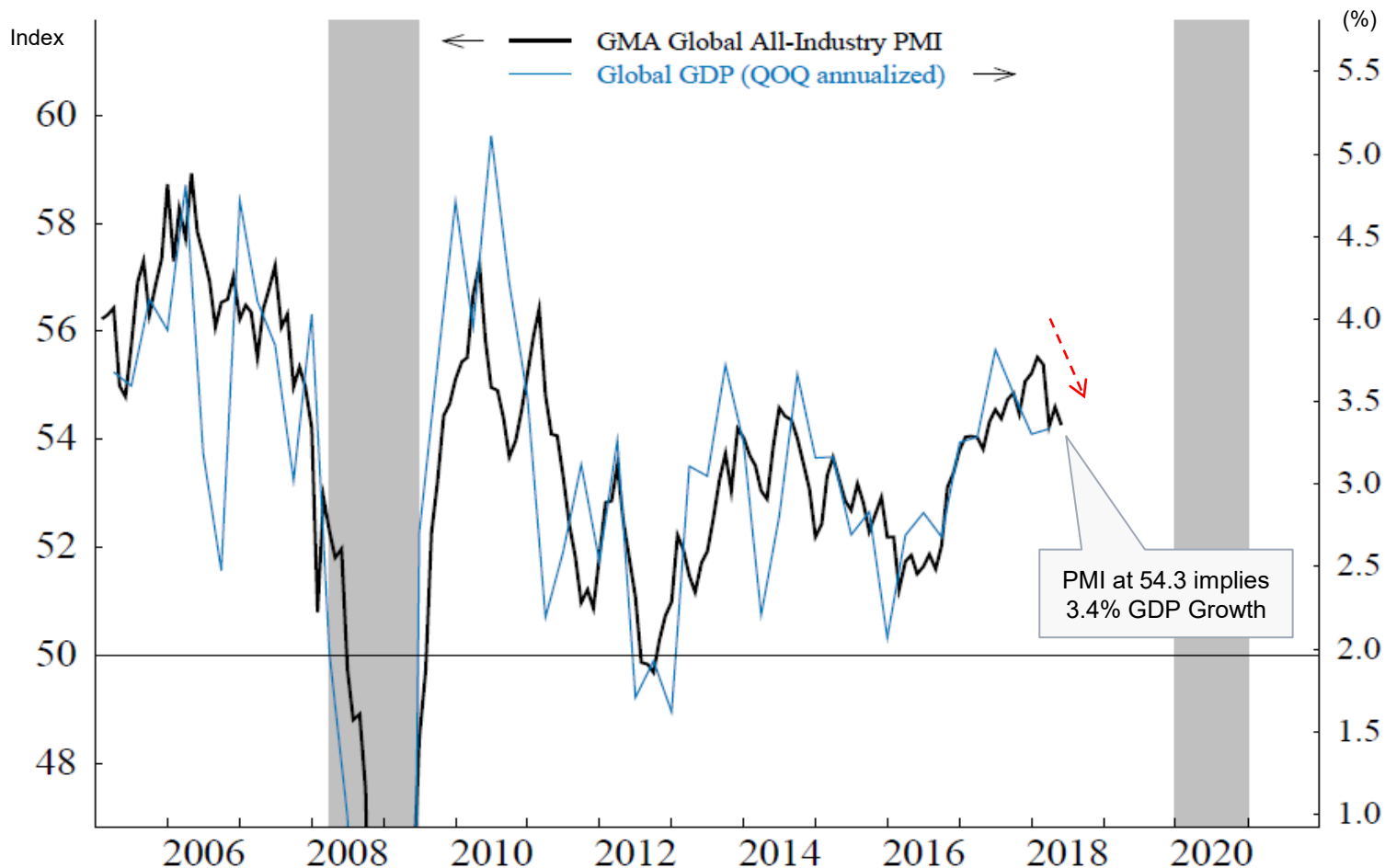
The End of Free Money to Impact US Valuations

Significant regime shift for financial asset valuations tied to removal of monetary accommodation:

- Corporate financial health: high leverage and rising interest expense to increase defaults and spreads
- Consumer spending to slow (after tax hike) as wealth effect moderates
- Asset valuations: free money pushed asset valuations to record highs – the end of free money should normalize asset valuations

Global Growth Stable, PMI Implies Some Slowing . . .

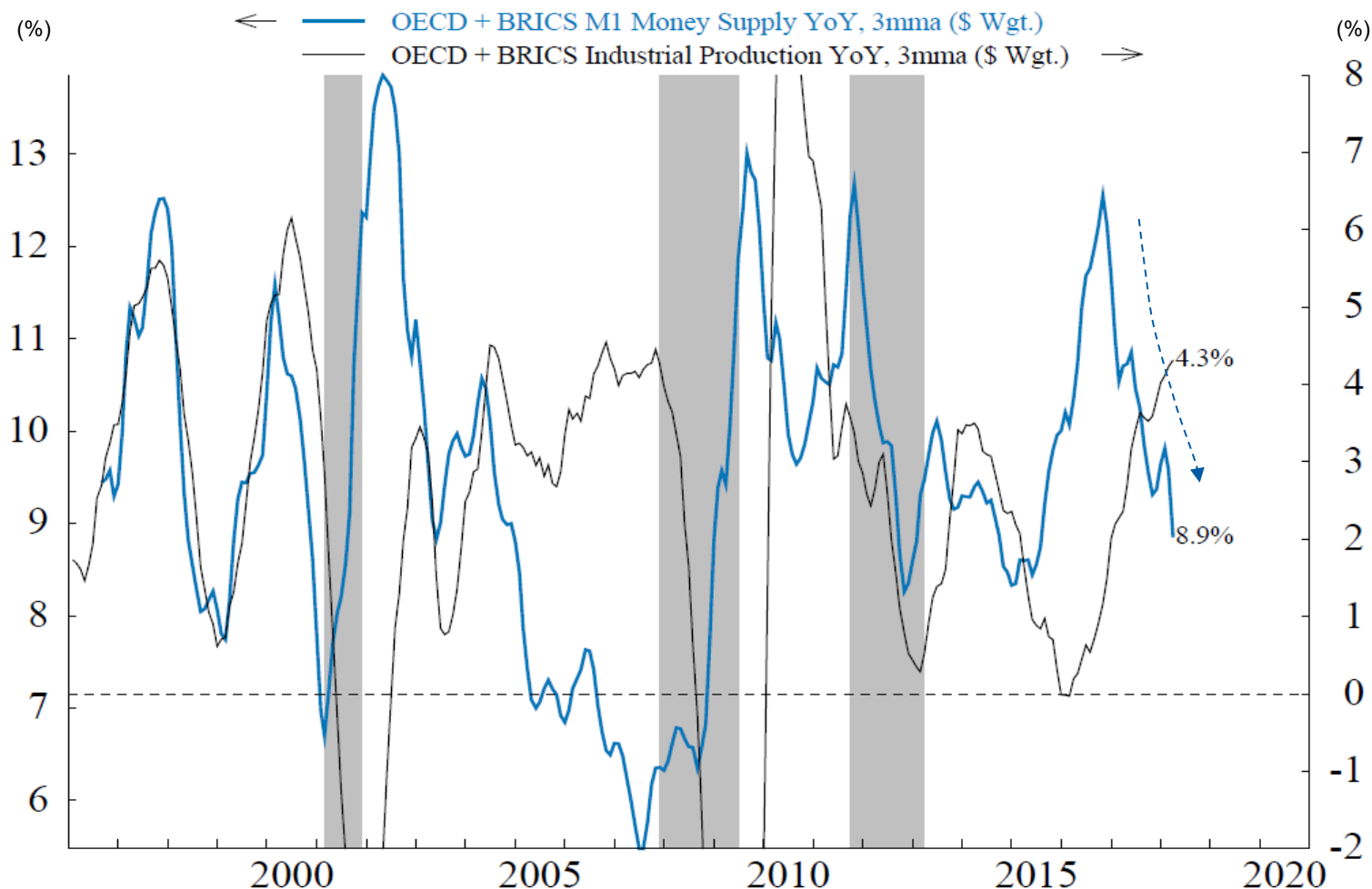
Global PMI vs. Global GDP (qoq % saar)



Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics, Goldman Sachs Research. Data as of June 6, 2018. Forecasts / estimates are based on current market conditions, subject to change, and may not necessarily come to pass.

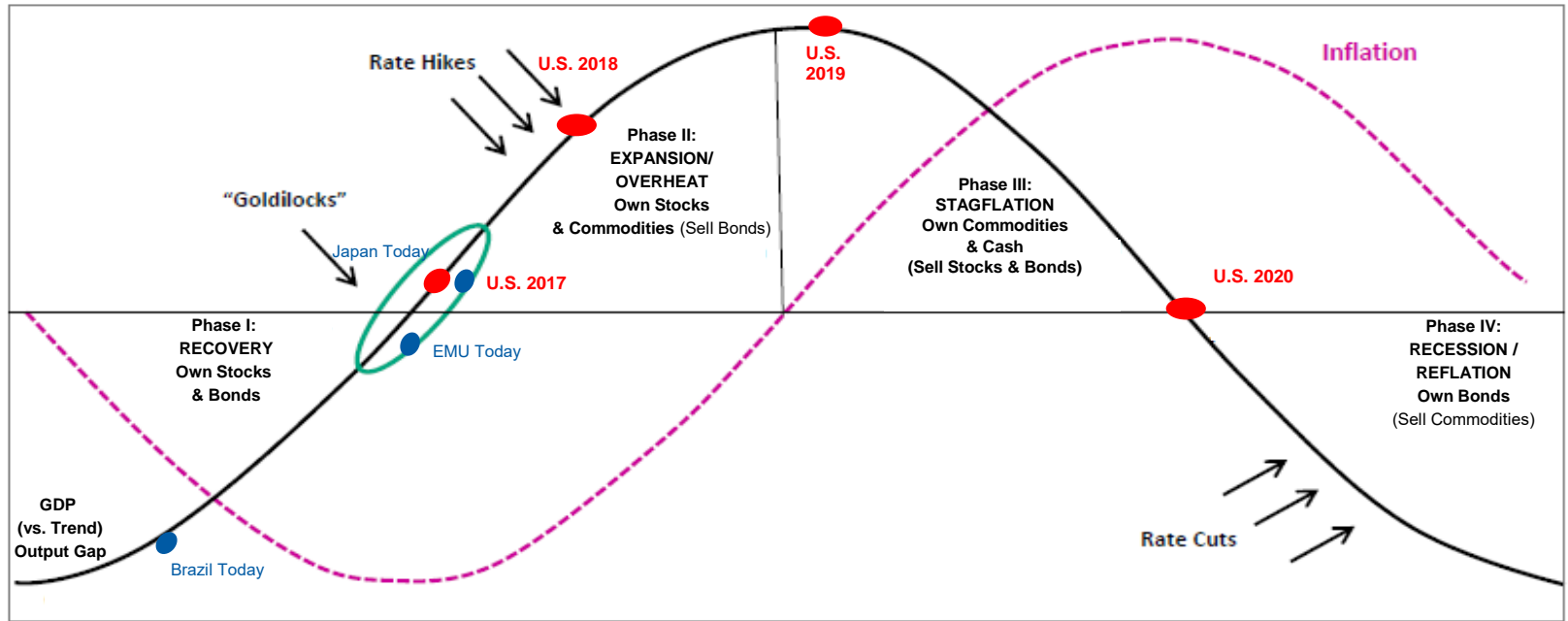
... Slower Money Growth to Dampen Global Economic Activity

OECD + BRICS Countries M1 Money Supply leads Industrial Production



Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics. Data as of June 5, 2018

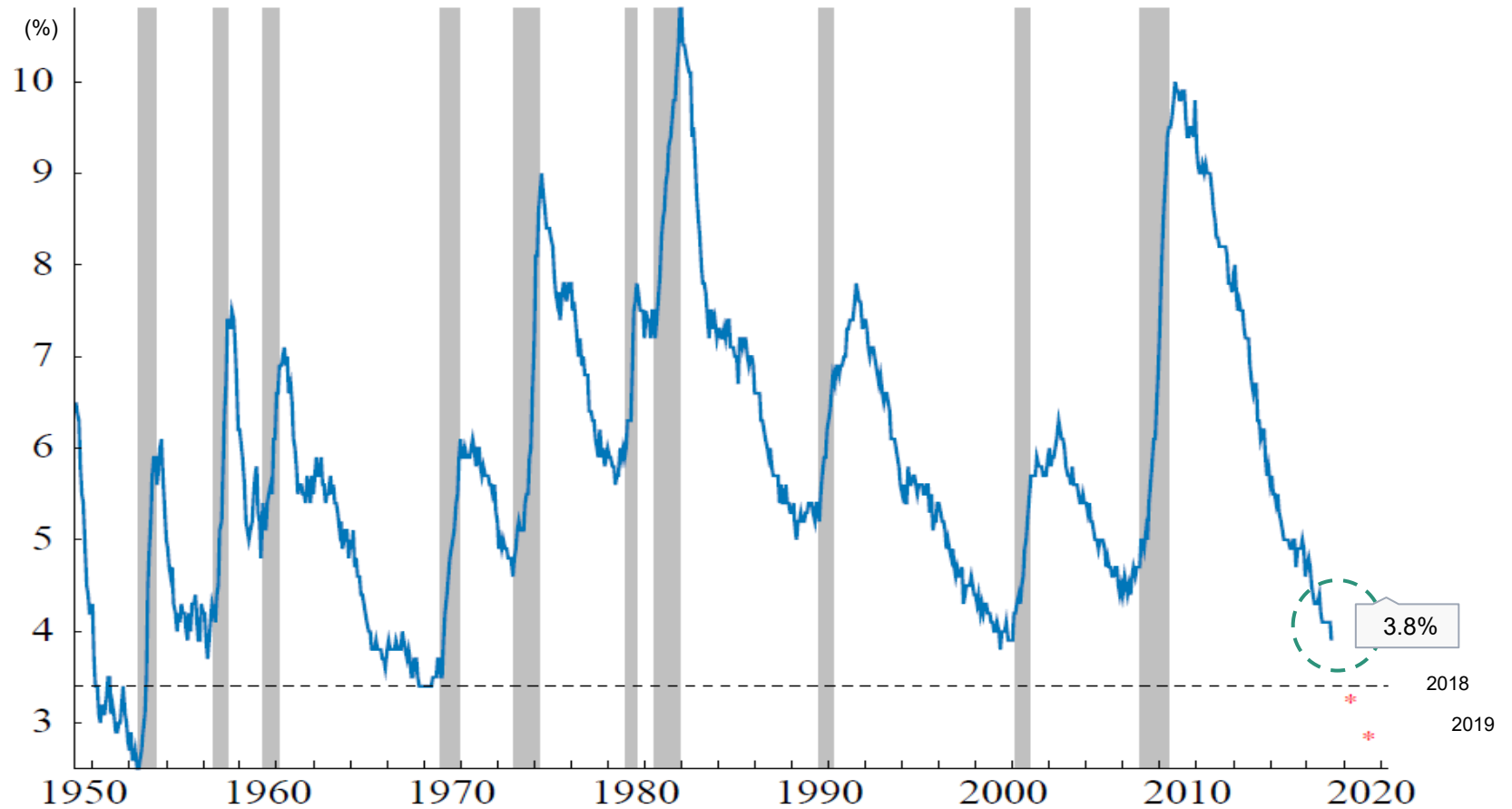
The Global Economic Cycle: US Late Cycle



	Phase I	Phase II	Phase III	Phase IV
Real Returns p.a.	Recovery	Expansion / Overheat	Stagflation	Recession/Reflation
US Stocks	16.8%	4.5%	-6.9%	4.3%
DM ex US Stocks	10.6%	5.7%	-10.4%	0.8%
EM (US\$)	12.4%	16.4%	-6.8%	2.1%
US Bonds	3.8%	0.4%	-5.2%	12.6%
IG	6.8%	0.4%	-5.8%	8.9%
HY	10.7%	2.1%	-7.5%	7.3%
Commodities	-0.9%	5.0%	8.2%	-3.7%
Cash	1.1%	0.3%	0.6%	2.0%
Characteristics	Growth above trend, Inflation falling	Growth above trend, Inflation rising	Growth below trend, Inflation rising	Growth below trend, Inflation falling

Source: MSIM Global Multi-Asset Team Analysis. Data as of January 26, 2018. * Note: Annualized real returns for each asset class. Based on 1961-2017 data. Global Multi-Asset team definition of Cycle Phases. US Stocks represented by S&P 500; Commodities: GSCI Index; Cash: US Treasury Bills; US Bonds: US 10 year; World Ex-U.S.: MSCI World ex US; EMF: MSCI Emerging Markets; HY: BAML US High Yield Index; IG: BAML US Corporate Index. This is for illustrative purposes only.

Overheating - U.S. Unemployment Rate Approaching 50-Year Lows ...

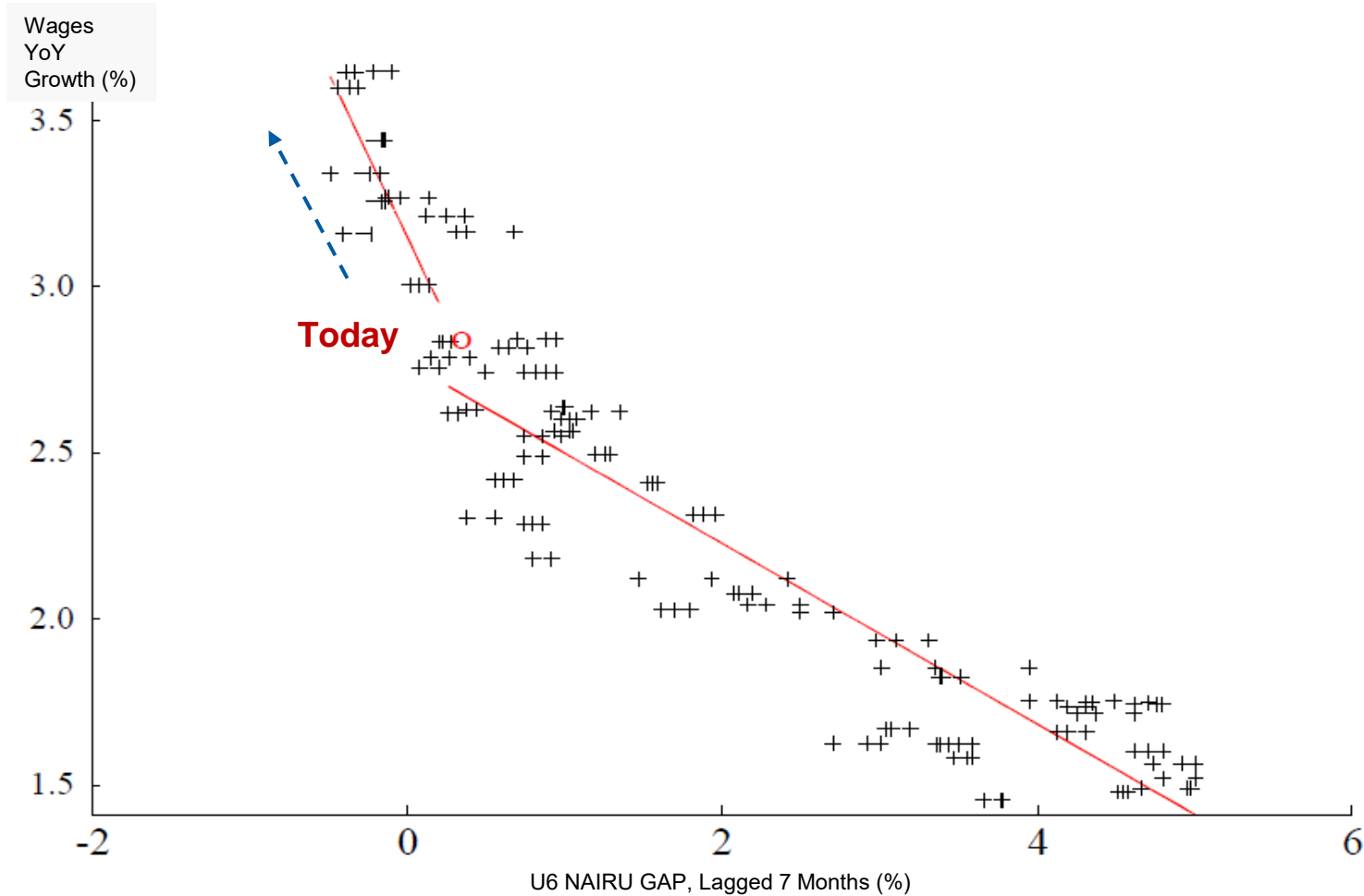


Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics. Data as of June 6, 2018..

Forecasts / estimates are based on current market conditions, subject to change, and may not necessarily come to pass.

... And US Labor Market at the Phillips Curve “Kink”

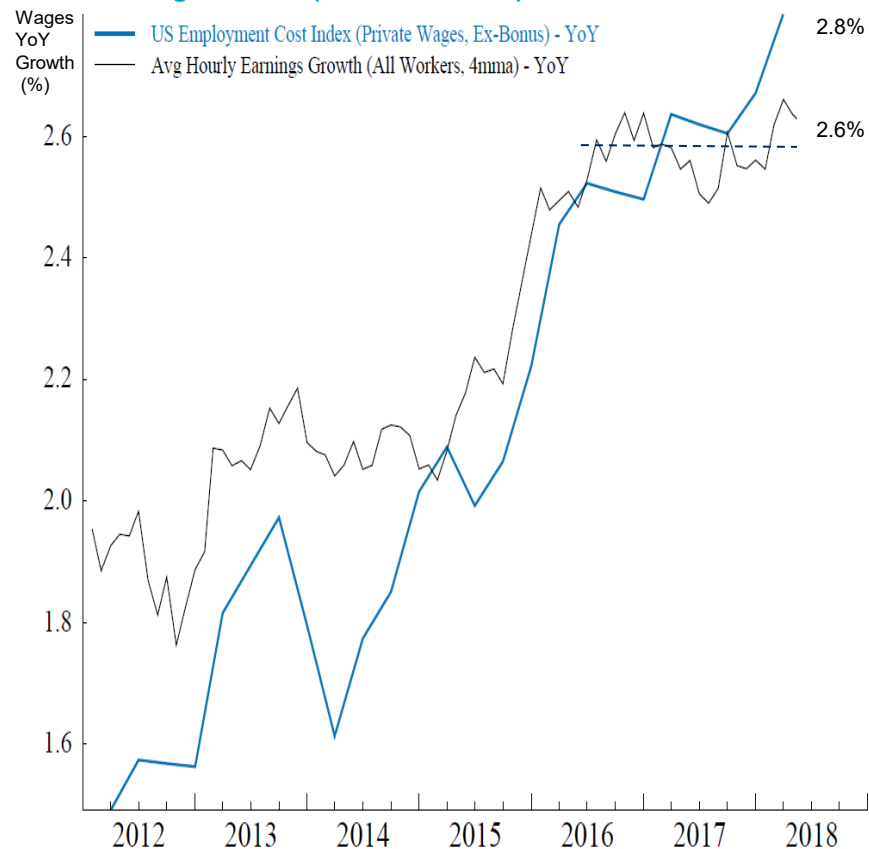
US Unemployment Gap vs. Growth in Wages* (2003 to 2018)



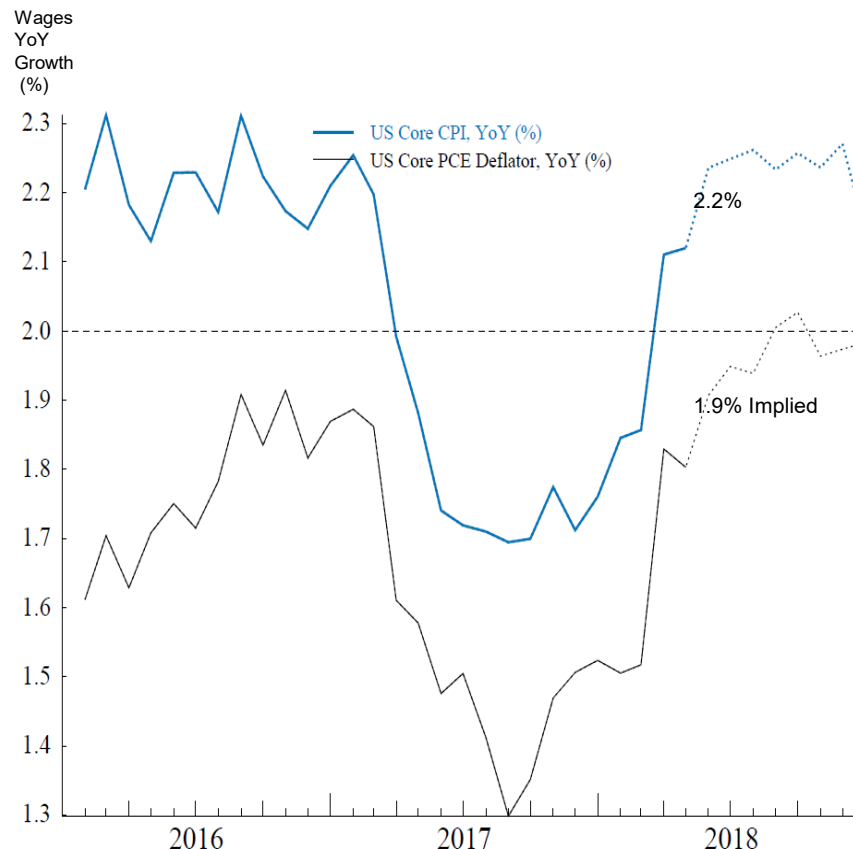
Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics. Data as of June 6, 2018; Forecasts / estimates are based on current market conditions, subject to change, and may not necessarily come to pass. * Wages: GMA composite wage trend based on principal component analysis of five wage indicators.

Wage Growth Finally Impacting Inflation in the US?

US Wage Growth (2011 to Present)

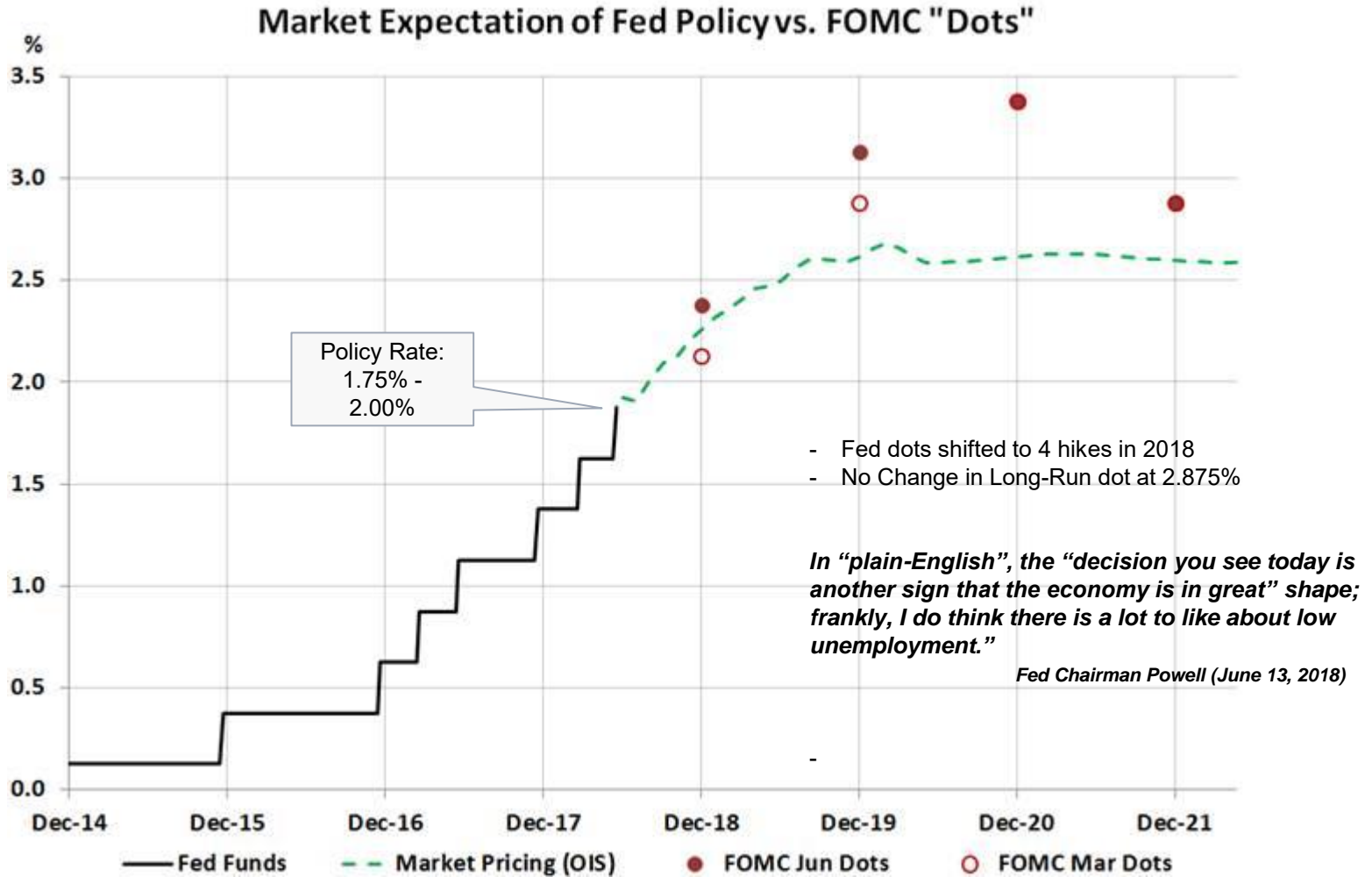


US Core CPI and PCE Deflator



Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics. Data as of June 12, 2018; Forecasts / estimates are based on current market conditions, subject to change, and may not necessarily come to pass.

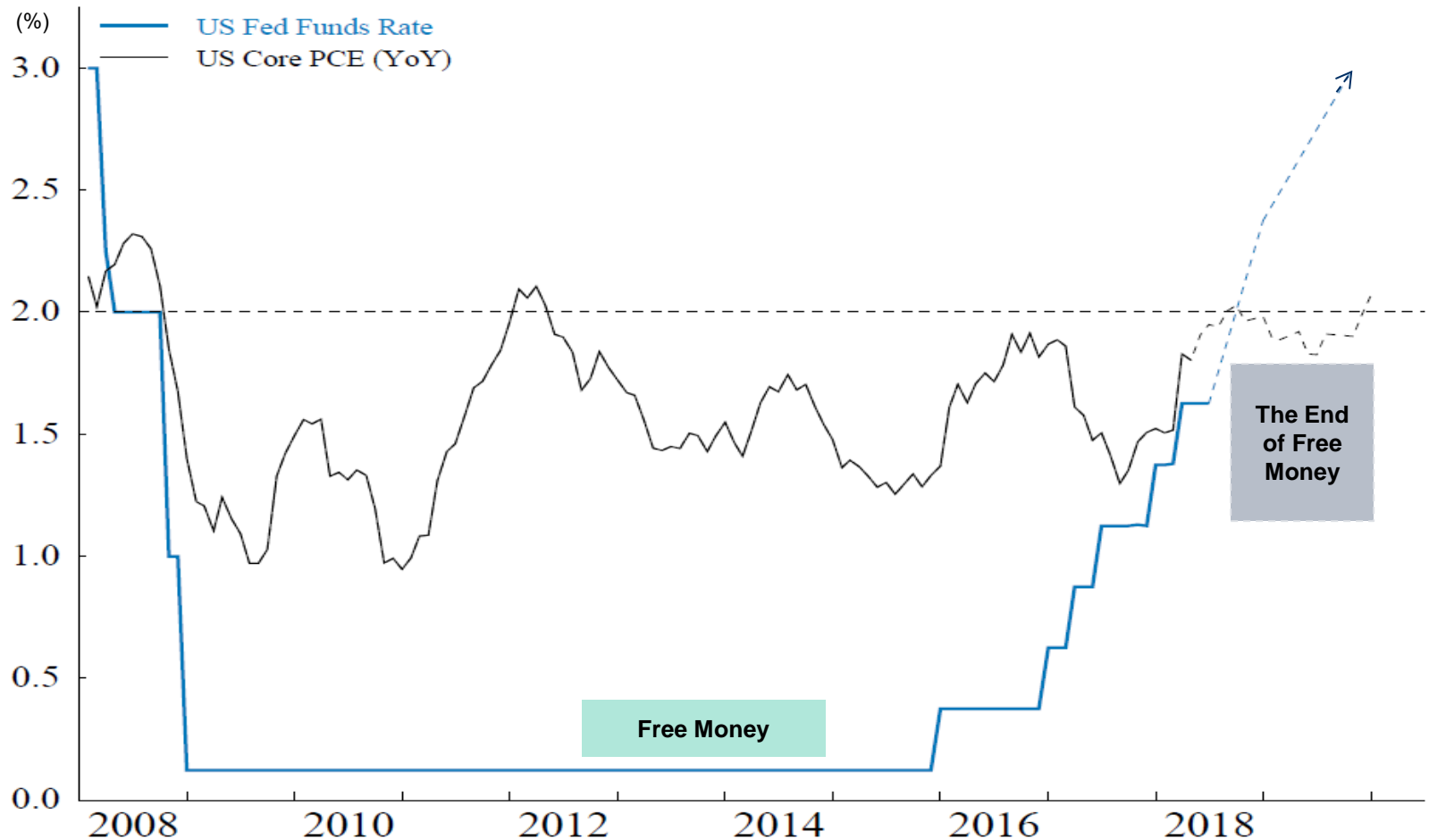
Fed Believes: More Hawkish Tone



Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics. Data as of June 13, 2018; Forecasts / estimates are based on current market conditions, subject to change, and may not necessarily come to pass.

Why the End of Free Money Matters

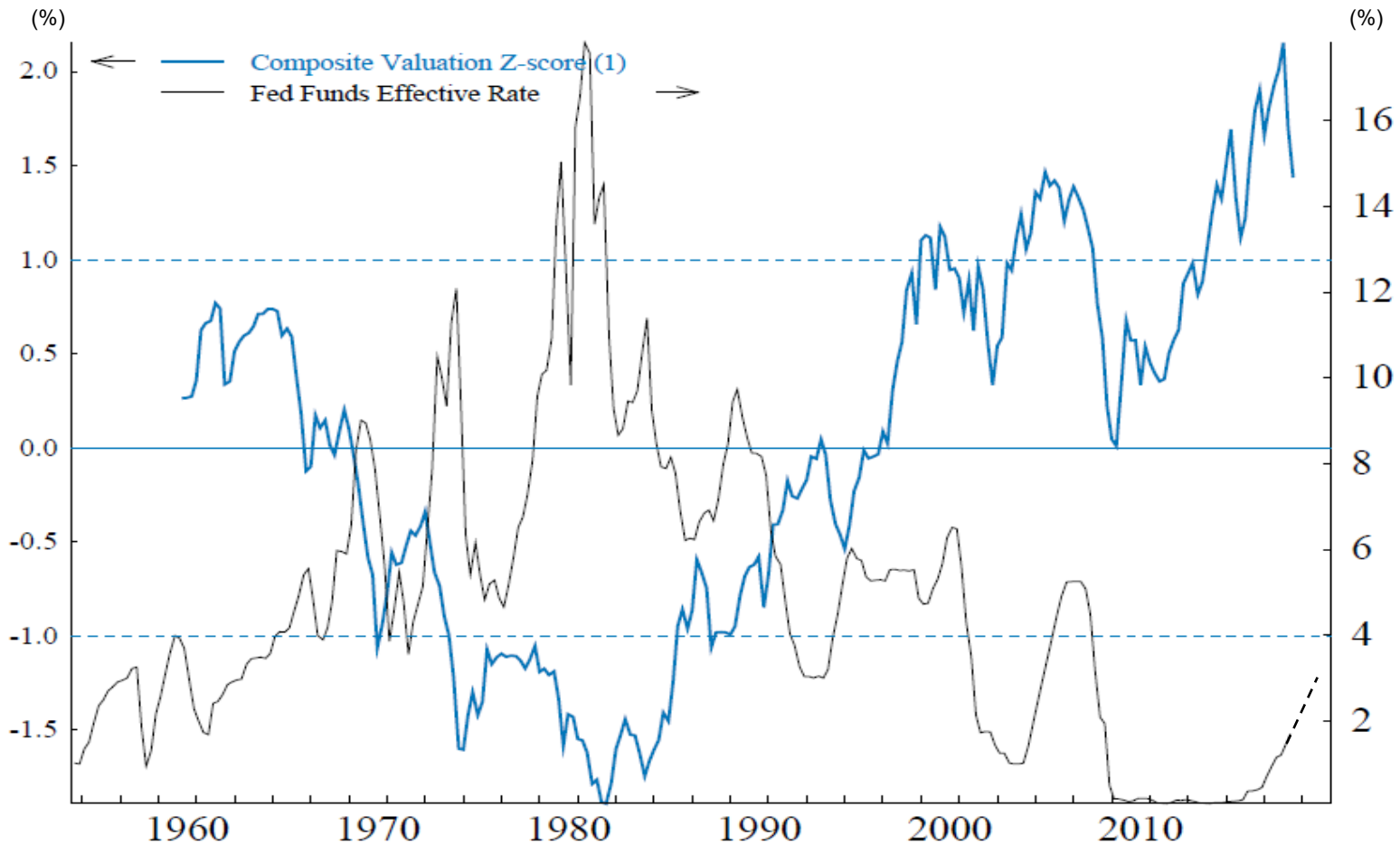
Fed Funds Rate vs. Core PCE



Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics. Data as of June 6, 2018. Forecasts / estimates are based on current market conditions, subject to change, and may not necessarily come to pass.

Overvaluation Everywhere

Composite Valuation of US Stocks, Corporate Bonds and Residential Housing



Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics. Data as of June 6, 2018.
 (1) S&P 500 Forward P/E, Moody's BBB Yield, US Residential Housing Rental Yield Equal Weighted Z-score.

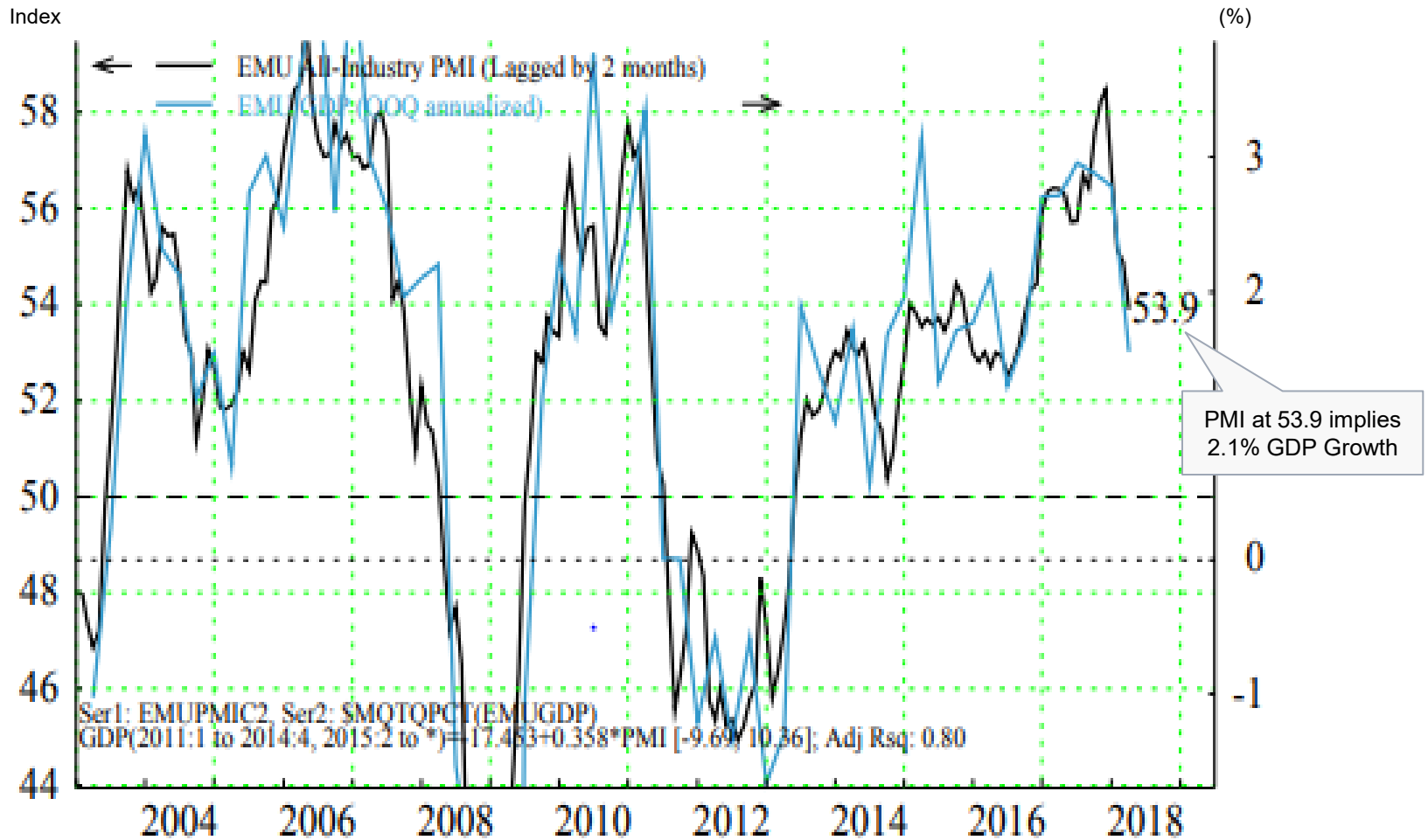
Improving US Relative Growth Supporting the Dollar



Source: MSIM Global Multi-Asset Team Analysis, Markit, Haver Analytics. Data as of June 6, 2018.

EMU Growth Surprisingly Soft

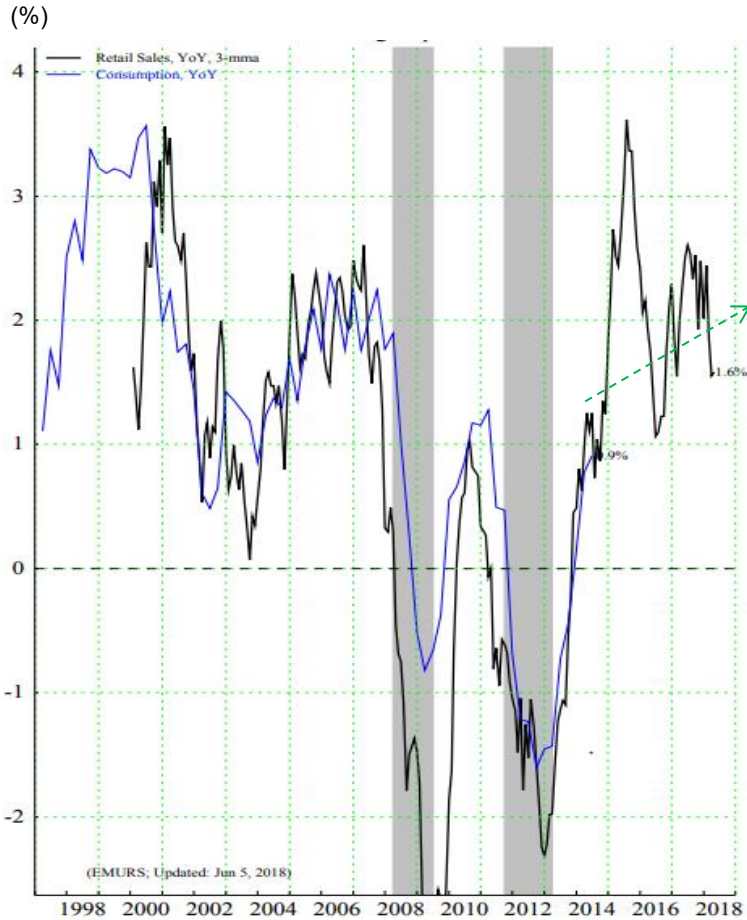
EMU GDP vs. EMU PMI



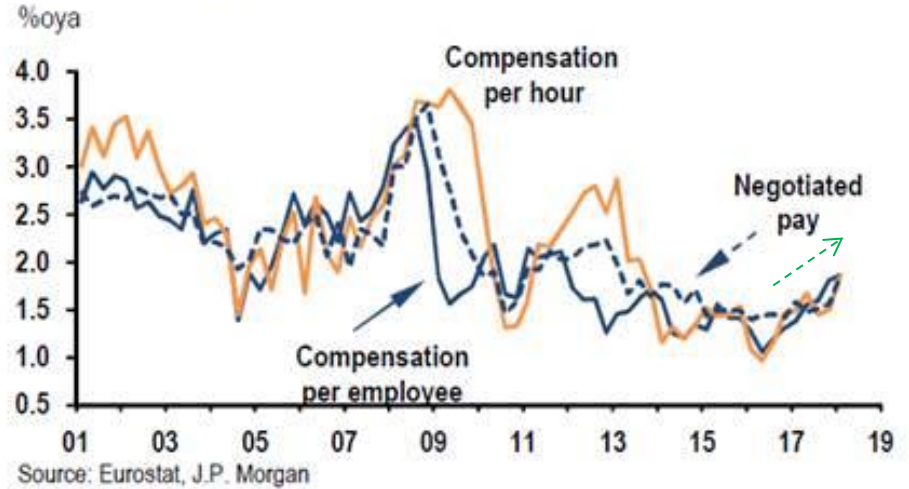
Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics, Goldman Sachs Research. Data as of June 6, 2018. Forecasts / estimates are based on current market conditions, subject to change, and may not necessarily come to pass.

EMU: Positive Signs for the Optimist

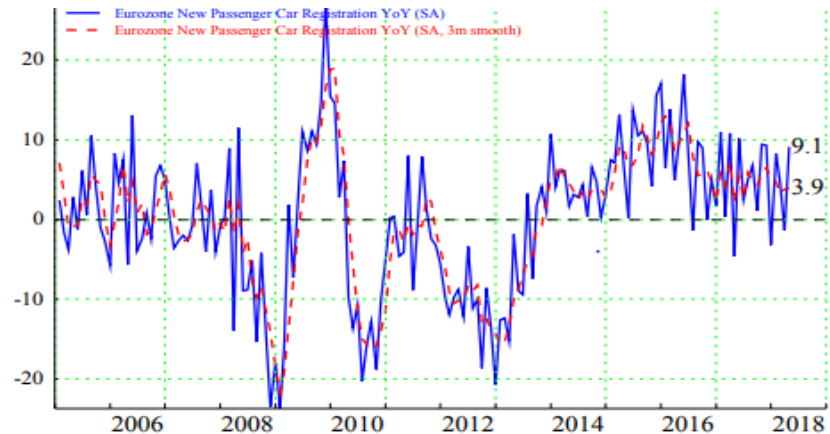
Retail Sales



Euro Area Wage Growth



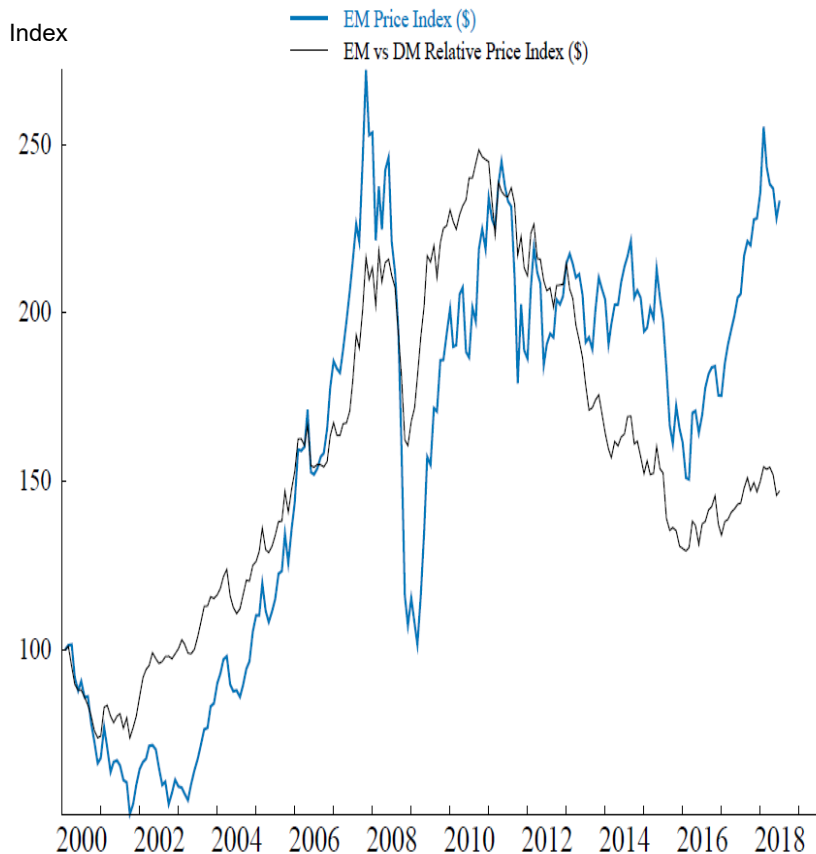
Eurozone New Passenger Car Registrations



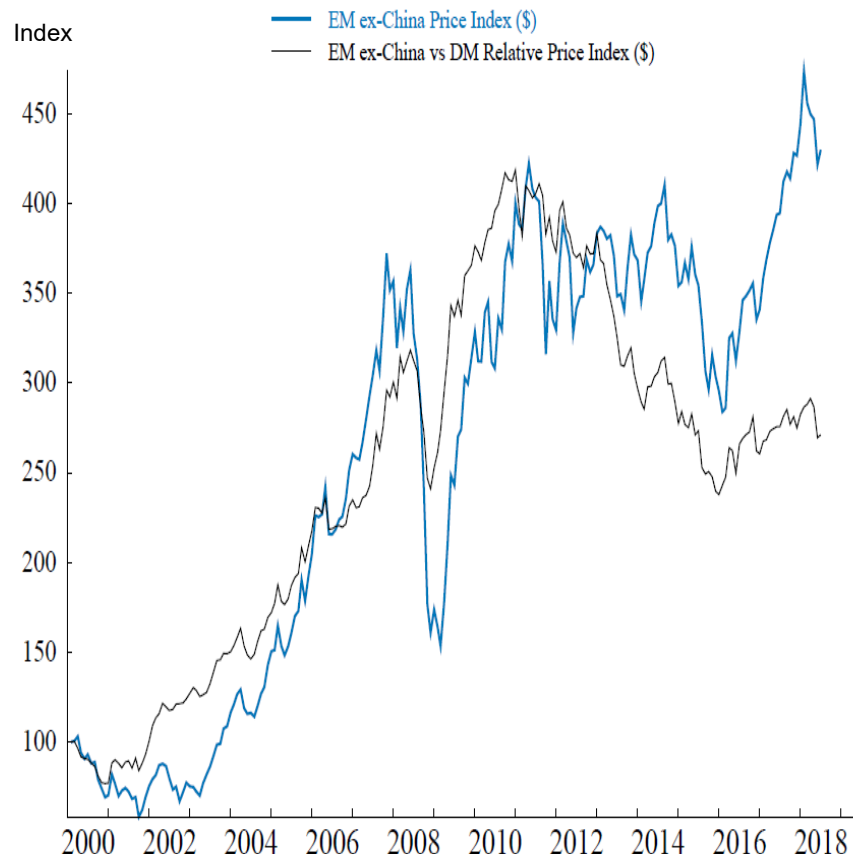
Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics, JP Morgan Research. Data as of June 5, 2018. Forecasts / estimates are based on current market conditions, subject to change, and may not necessarily come to pass.

EM Equities Rebound Since Early 2016

EM Performance

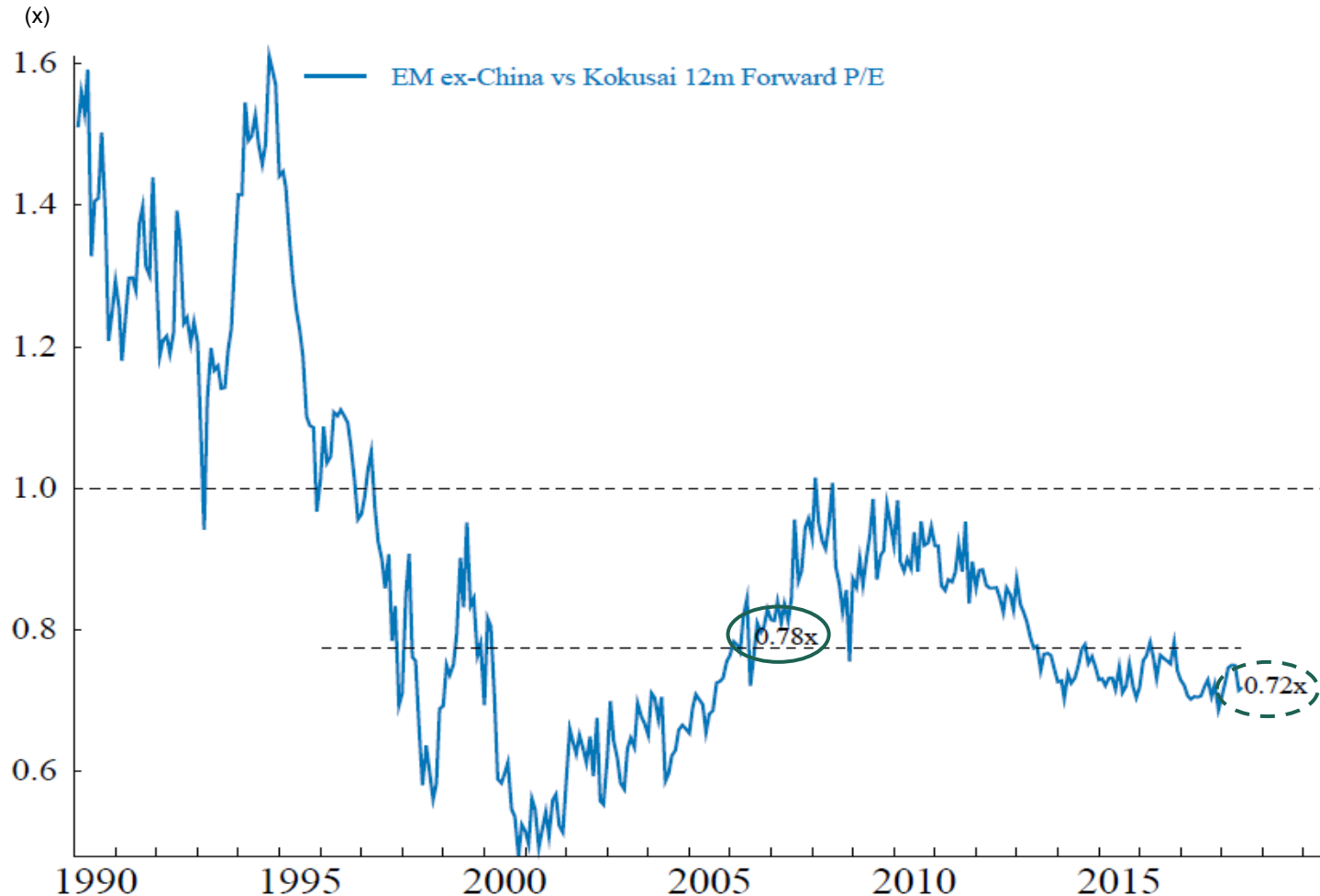


EM ex-China Performance



Source: MSIM Global Multi-Asset Team Analysis, Bloomberg, Factset, MSCI. Data as of June 5, 2018.

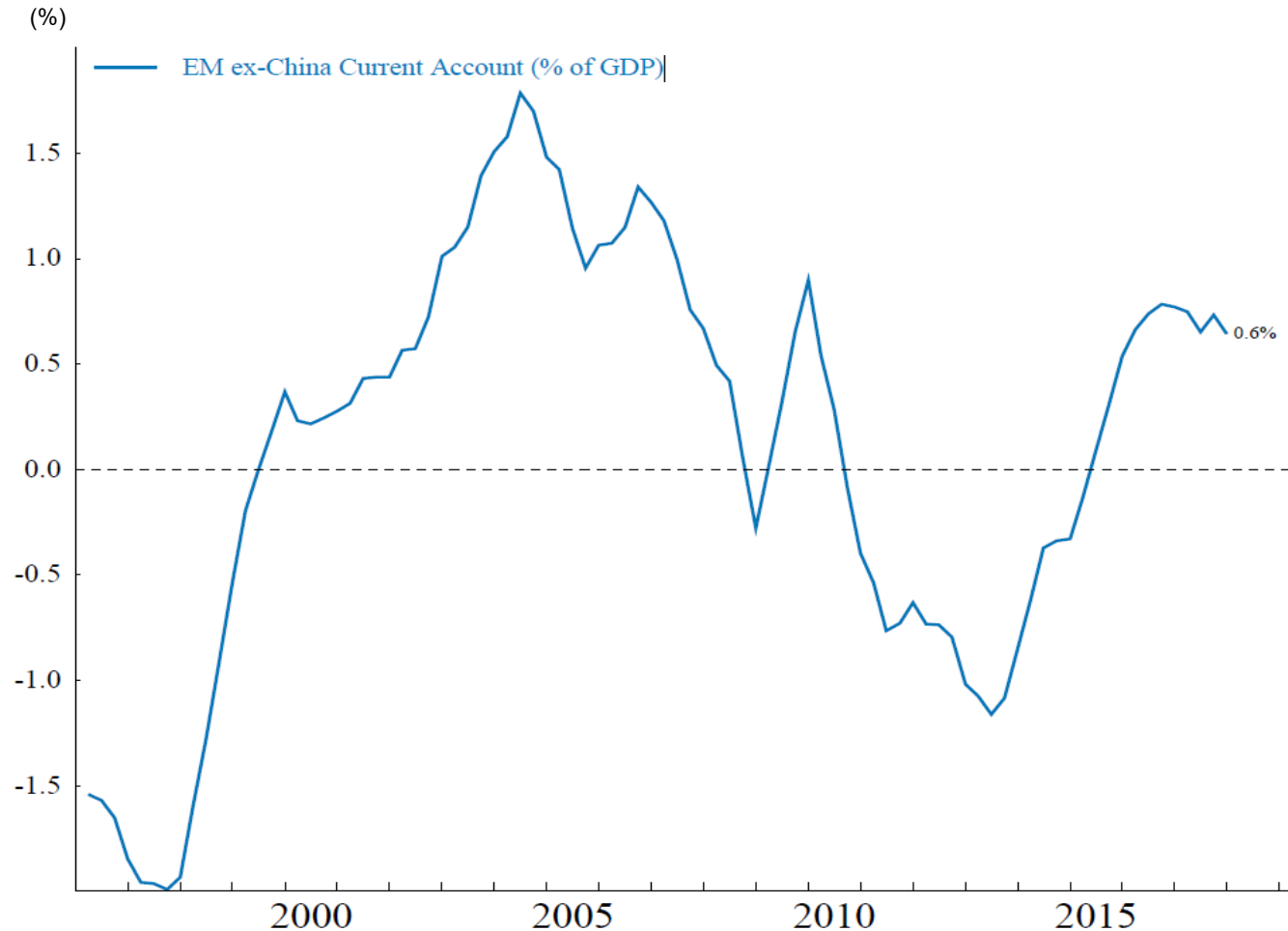
EM ex-China Equities Marginally Cheap



Source: MSIM Global Multi-Asset Team Analysis, Bloomberg, Factset, MSCI. Data as of June 5, 2018.

EM ex-China Fundamentals Have Improved (I)

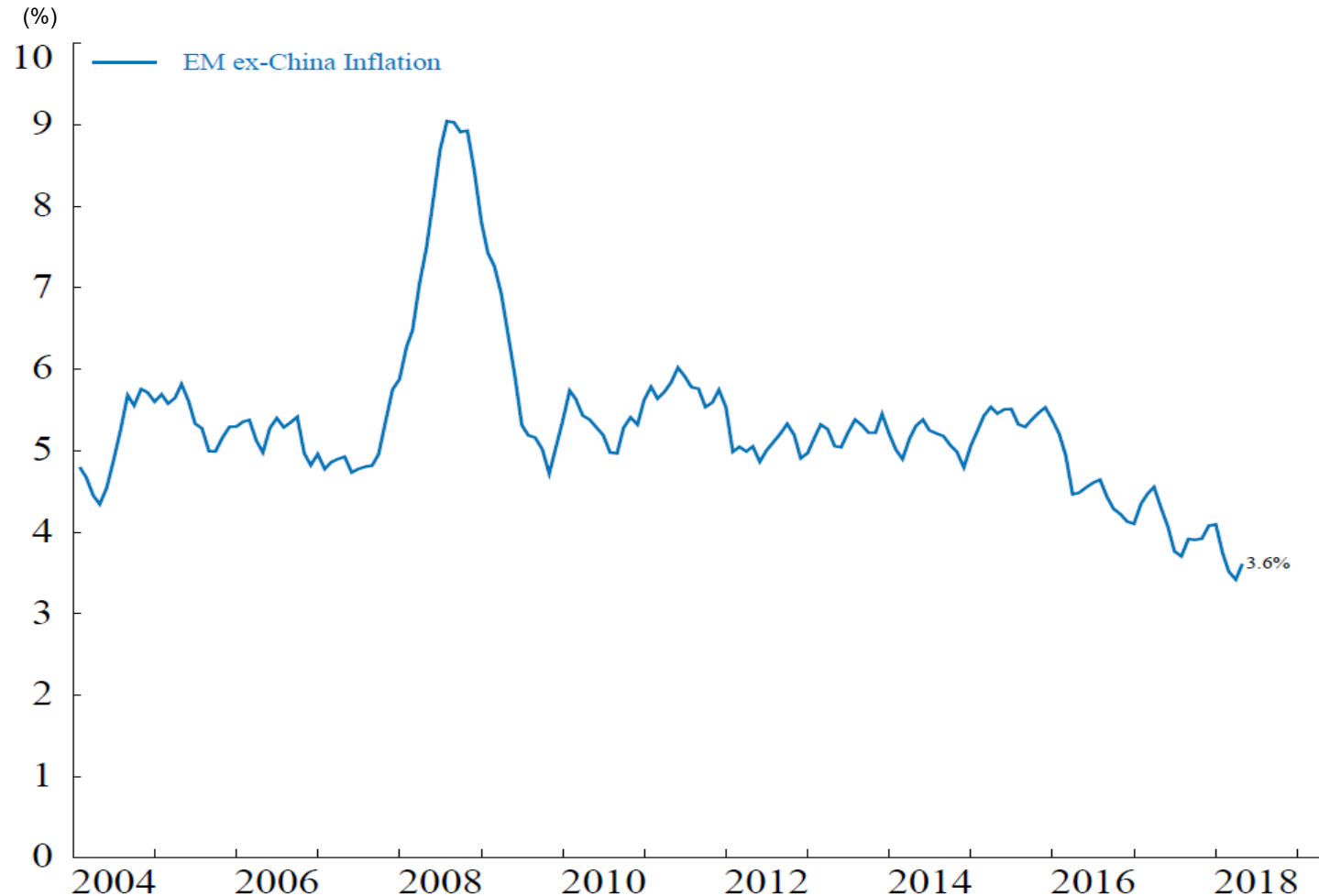
EM ex-China Current Account (% of GDP)



Source: MSIM Global Multi-Asset Team Analysis, J.P. Morgan, Bloomberg. Data as of June 5, 2018.

EM ex-China Fundamentals Have Improved (II)

EM ex-China Inflation Has Come Down



Source: MSIM Global Multi-Asset Team Analysis, J.P. Morgan, Bloomberg. Data as of June 5, 2018.

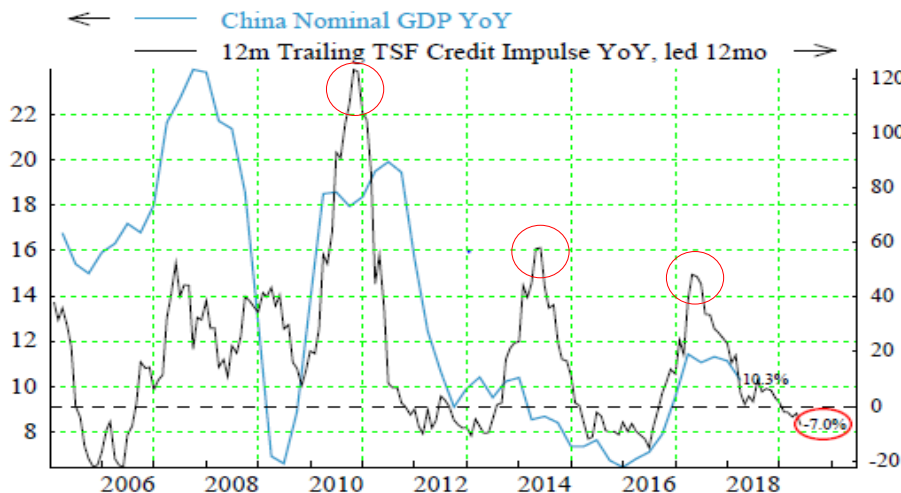
China's Economy Stable, Expected to Slow

- Real GDP has held at 6.5%
- Nominal GDP has slowed from 13% to 10% . . .
- . . . As Credit Impulse declines
- Residential property sales contracting at 5%
- Industrial Profits have rolled over

China Nominal GDP vs M1 Money Supply



China Nominal GDP vs TSF Credit Impulse



China Nominal GDP vs Industrial Profits



Source: MSIM Global Multi-Asset Team Analysis, NBS, Haver Analytics. Data as of June 12, 2018

China's Credit / Monetary Policy: Still Maintaining Tightening Bias

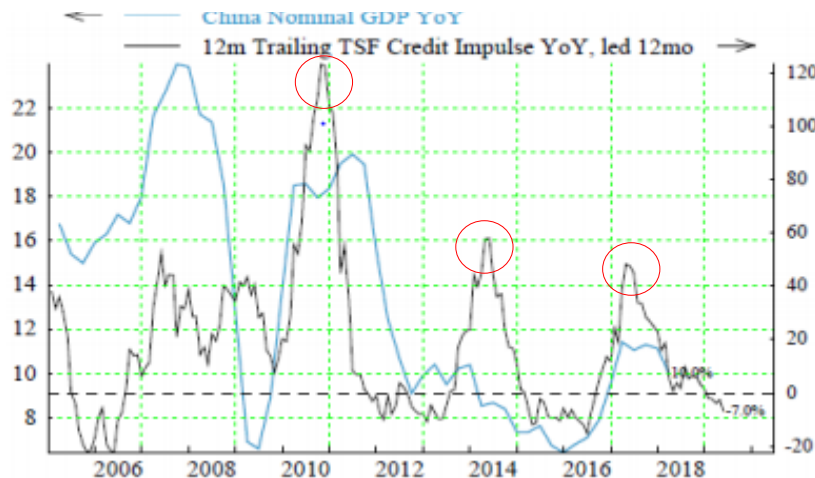
Balancing liquidity support from the PBoC with regulatory tightening

- New TSF credit is still contracting YoY on shadow bank deleveraging and stable bank loan growth
- PBoC liquidity injections helped reinvigorate bond issuance in March/April, but May fell back
- High volume of debt defaults in May

China Shadow Credit Flow



China Nominal GDP vs TSF Credit Impulse



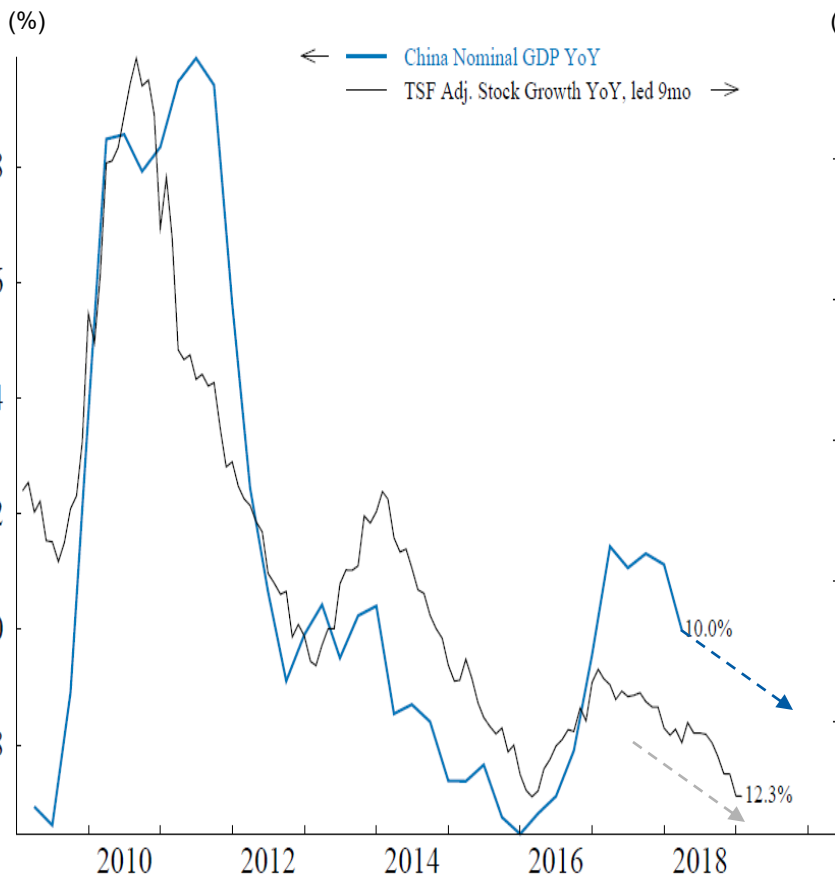
China Nominal GDP vs Industrial Profits



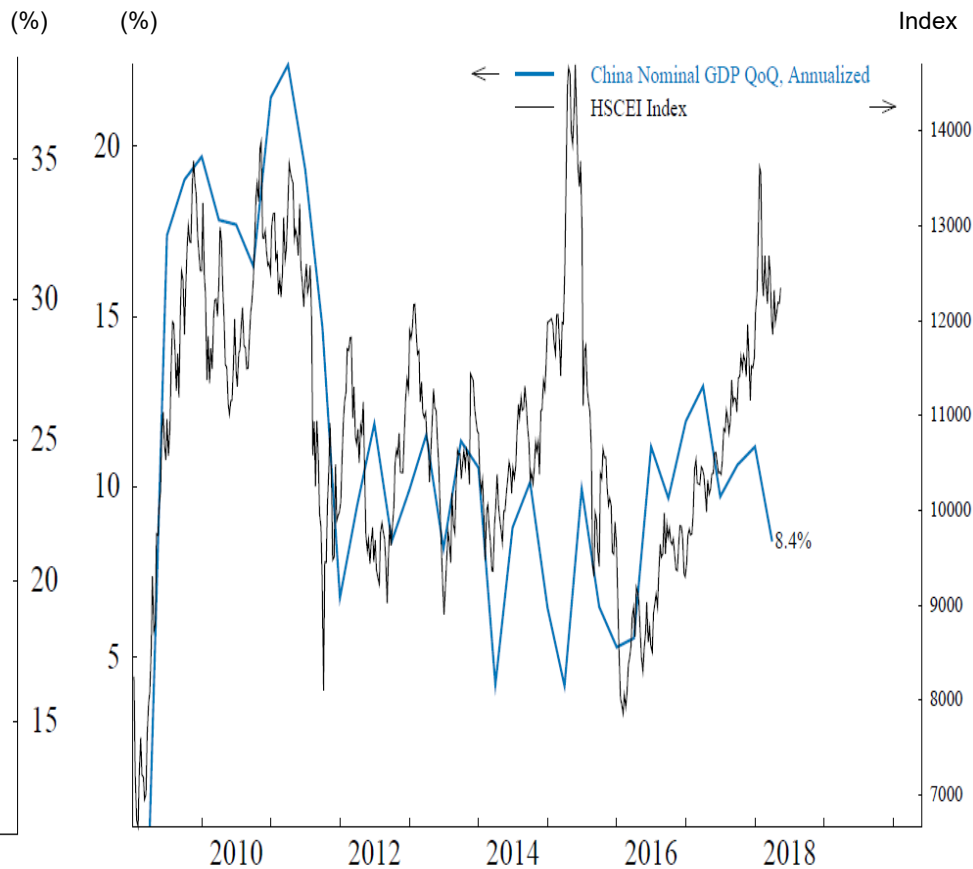
Source: MSIM Global Multi-Asset Team Analysis, NBS, Haver Analytics. Data as of June 12, 2018

Credit Drives China Nominal GDP and Nominal GDP Drives China Plays

China Nominal GDP vs Credit (TSF Stock) Growth



China Nominal GDP vs H-Shares



Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics, Markit, MSCI. Data as of June 5, 2018.

Morgan Stanley

INVESTMENT MANAGEMENT

Portfolio Positioning

Global Multi-Asset Positioning

Positioning

- Neutral global equities as growth / inflation trade-off deteriorates.
- Tactically long in US Treasuries (mostly TIPS)
- Strong US dollar bias (vs. Yen, Australian dollar, Canadian dollar, Euro)
- Overweight Japan and Eurozone equities relative to the US (valuation, sentiment)
- Housing bubbles in Canada and Australia deflating – short banks and currencies
- Select opportunities in Deep Value EM FX (Mexico, Turkey) and local rates (Brazil, Mexico)

Upside Risks

- US: Continued impact from stimulus offsets rate hike impact on corporates; higher post-tax profits also enable corporates to withstand higher rates
- Fed focus on inflation symmetry around target implies higher inflation but lower real rates
- Short rates climb 300bps but 10yr yields at 3.0% not high enough to impact stocks, bonds and real estate valuations
- USD stabilizes, political risks pass with limited policy / legislative changes
- OPEC drops quotas, oil prices reverse based on supply, not demand

Panther Fund Allocation

As of June 8, 2018

Asset Class	Portfolio	Benchmark	Active
Global Public Equity	49.7%	50.6%	-0.8%
US Equity	23.3%	26.8%	-3.5%
International Developed Equity	29.9%	17.8%	12.0%
Emerging Markets Equity	-3.4%	5.9%	-9.3%
Other	0.0%	0.0%	0.0%
Equity Replacement (BXM)	7.3%	6.9%	0.4%
Below Investment Grade Credit	8.2%	8.0%	0.2%
High Yield	4.1%	4.0%	0.1%
Bank Loans	4.1%	4.0%	0.1%
Emerging Market Debt	34.7%	6.9%	27.8%
EM Hard Currency	3.4%	3.5%	-0.1%
EM Local Currency	31.3%	3.4%	27.8%
Real Assets	6.2%	5.0%	1.2%
REITs	2.6%	2.5%	0.1%
Listed Infrastructure	2.4%	2.5%	0.0%
Core Fixed Income	34.4%	19.7%	14.7%
US Gov't	17.5%	7.4%	10.1%
Non-US Gov't	-0.6%	0.1%	-0.7%
US IG	3.9%	4.2%	-0.3%
Non US IG	1.5%	0.8%	0.7%
Inflation	9.4%	0.0%	9.4%
Agency RMBS	5.6%	5.5%	0.1%
Other	-2.9%	1.7%	-4.6%
Commodities	-3.3%	0.0%	-3.3%
Copper	-3.2%	0.0%	-3.2%
FX	2.3%	0.0%	2.3%
Total Cash	-39.5%	3.0%	-42.5%
Physical Cash	3.0%	0.0%	3.0%
Synthetic Cash	-42.5%	0.0%	-42.5%
Total	100.0%	100.0%	0.0%

Equity Thematic Pair Trades (%)	Gross OW	Gross UW	Net
OW U.S. Consumer Finance / UW U.S. Equities (Long 10-Yr Treasury Hedge 1.0x)	7.8	-7.8	0.0
UW U.S. Cyclicals / OW U.S. Defensives Equities	3.8	-3.8	0.0
UW Global Machinery / OW Developed Market Equities	2.3	-2.3	0.0
OW U.S. Energy MLPs / UW US Equities	1.2	-1.2	0.0
UW Canadian Banks / OW Global Equities	2.7	-2.7	0.0
OW Eurozone Domestic Basket / UW U.S. Equities	6.8	-6.8	0.0
OW Japanese Equities / UW U.S. Equities	4.5	-4.5	0.0
UW China Mid-Sized Banks / OW Global Equities	1.7	-1.7	0.0
UW Emerging Market / Developed Market Equities	2.0	-2.0	0.0
UW China H-Shares / OW Global Equities	6.8	-6.8	0.0
UW Luxury Goods Manufacturers / OW Global Equities	2.5	-2.5	0.0
UW Elevator Manufacturers / OW Global Equities	0.6	-0.6	0.0

Fixed Income Positions (%)	Gross OW	Gross UW	Net
OW Mexican 10-Year Swaps	7.6	0.0	7.6
OW Brazil 5-Year Bonds	9.9	0.0	9.9
OW U.S. 10-Year Tips	9.3	0.0	9.3
OW U.S. 30-Year Treasuries	1.5	0.0	1.5
OW South Africa 25-Year Bonds	10.5	0.0	-10.5
OW Portuguese 10-Year Bonds / UW German 10-Year Bunds	3.8	-3.8	0.0
OW Greek 10-Year Bonds / UW German 10-Year Bonds	2.9	-2.9	0.0

Currency Positions (%)			
EUR vs. CZK	-13.9	AUD vs. G4	-9.5
RUB vs. CAD	+3.9	JPY vs. USD	-2.9
MXN vs. EM Currencies	+3.4	GBP vs. EUR	+10.0
TRY vs. EM Currencies	+7.4	SEK vs. EUR	+2.6
Total EM	+20.2	EUR vs. USD	-1.8
		Total USD	+9.5
		Total EUR	-25.9

Notes: Holdings and weightings are subject to change daily. Portfolio compositions may change depending on market conditions and objectives. Provided for informational purposes only and should not be deemed as a recommendation to buy or sell securities in the regions or asset classes referenced. "OW" denotes an overweight position relative to the benchmark, while "UW" denotes an underweight position. All active equity and fixed income positions in the demonstration portfolio are unhedged.

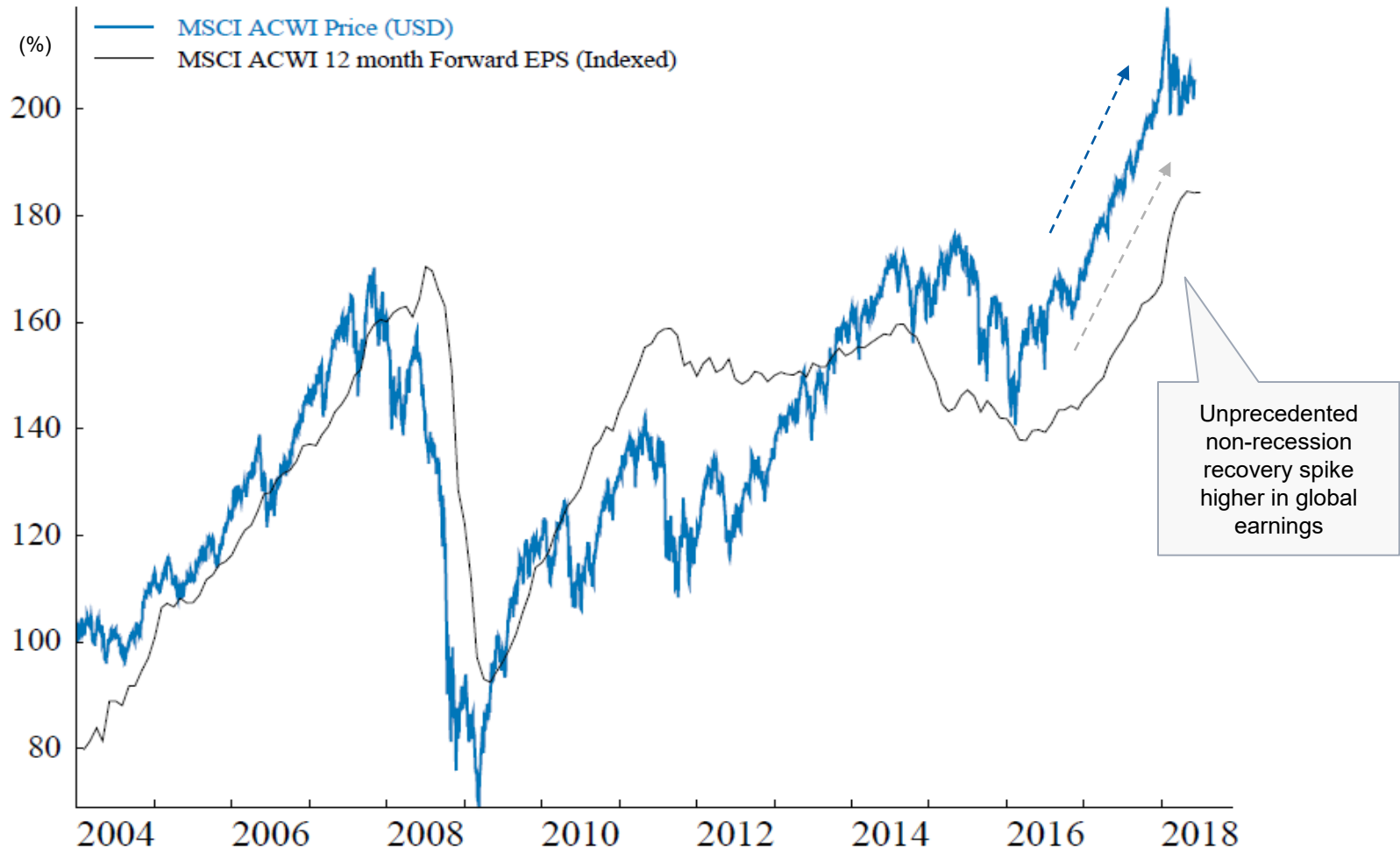
Morgan Stanley

INVESTMENT MANAGEMENT

Reference Slides

Global Stocks Loved Goldilocks and the US Tax Cut!

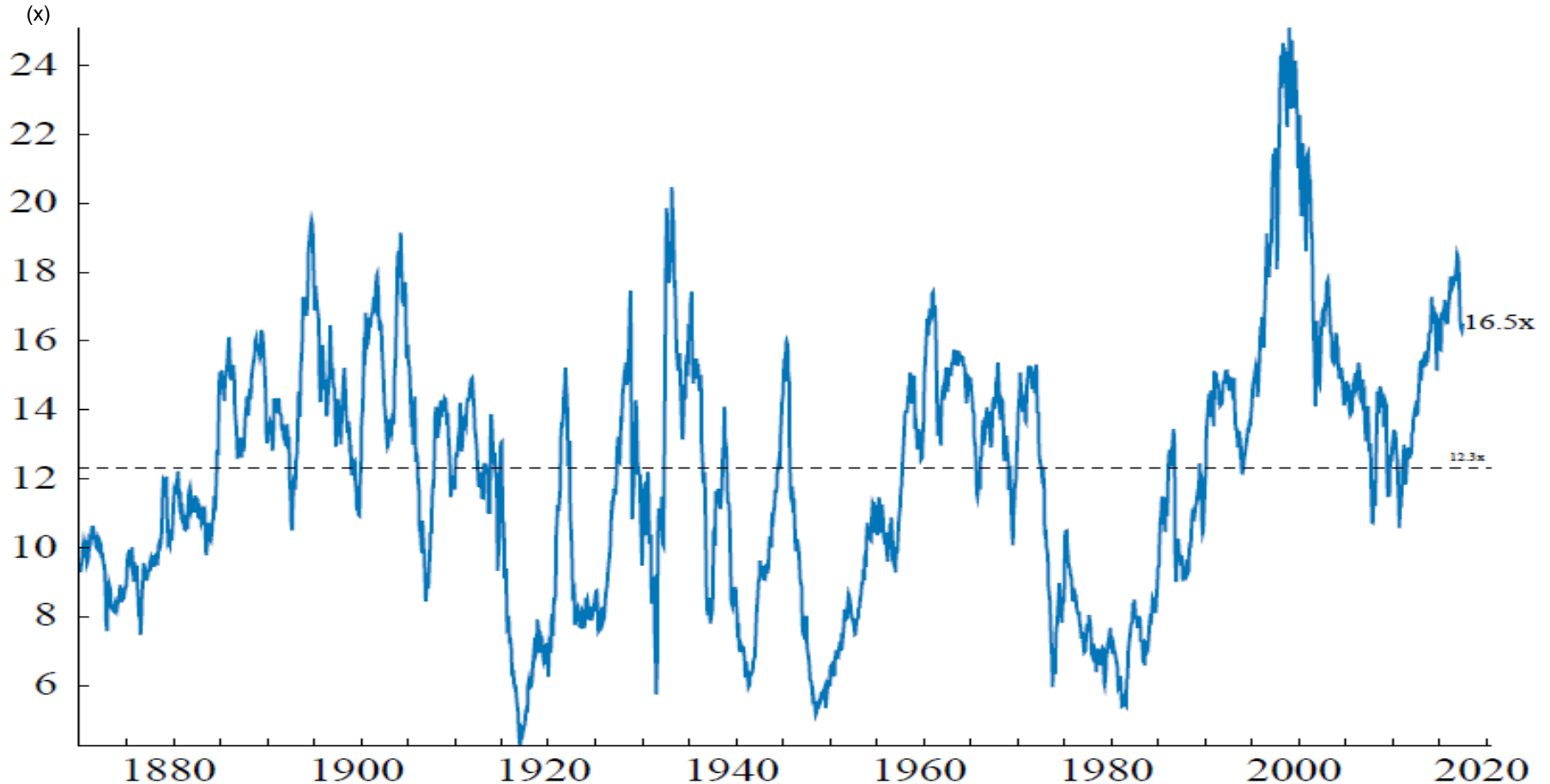
ACWI Performance vs. Forward EPS



Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics. Data as of June 6, 2018. Forecasts / estimates are based on current market conditions, subject to change, and may not necessarily come to pass.

S&P Trading at 34% Premium to Historical Average

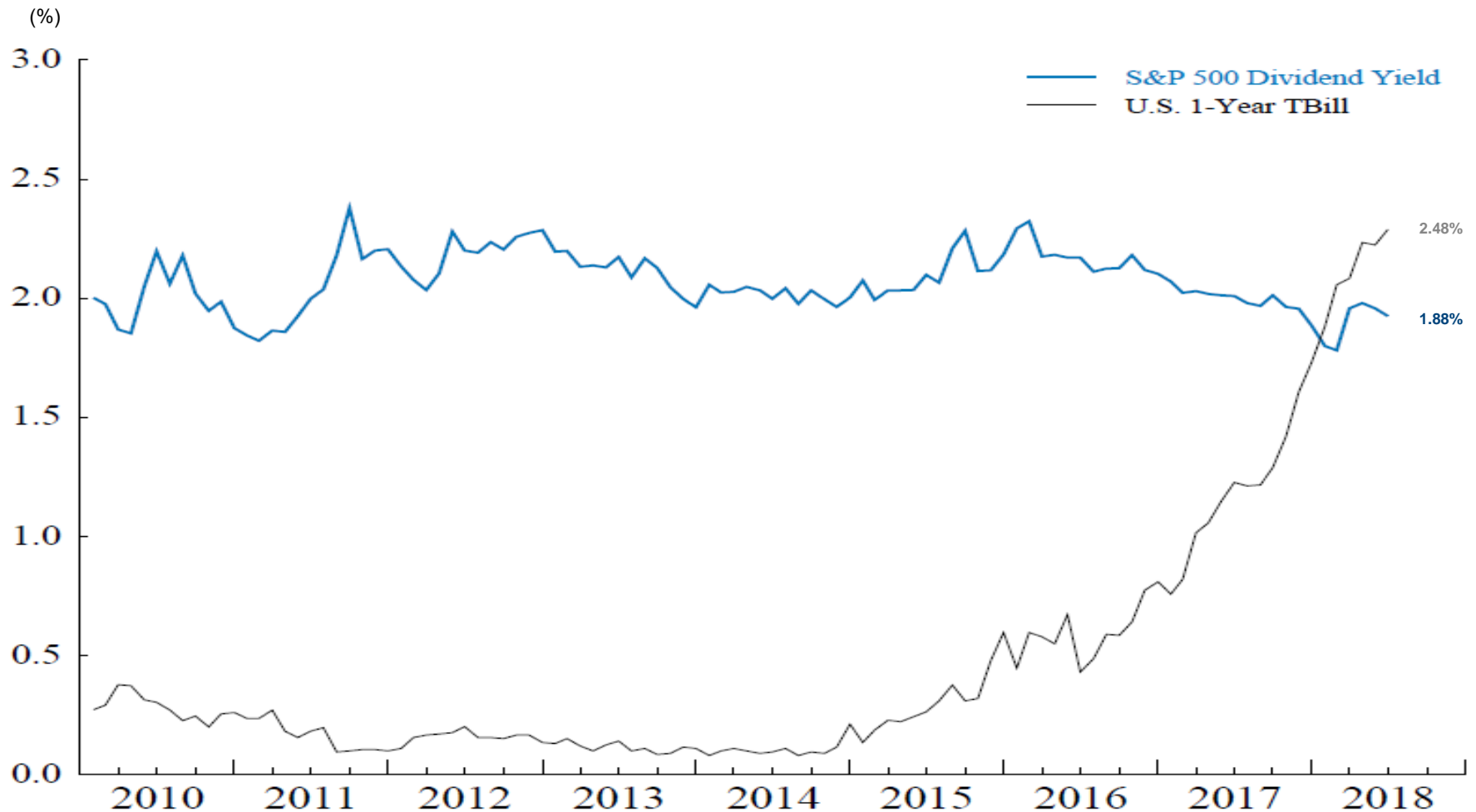
US 12mth Forward P/E



Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics. Data as of June 6, 2018.

The End of Free Carry

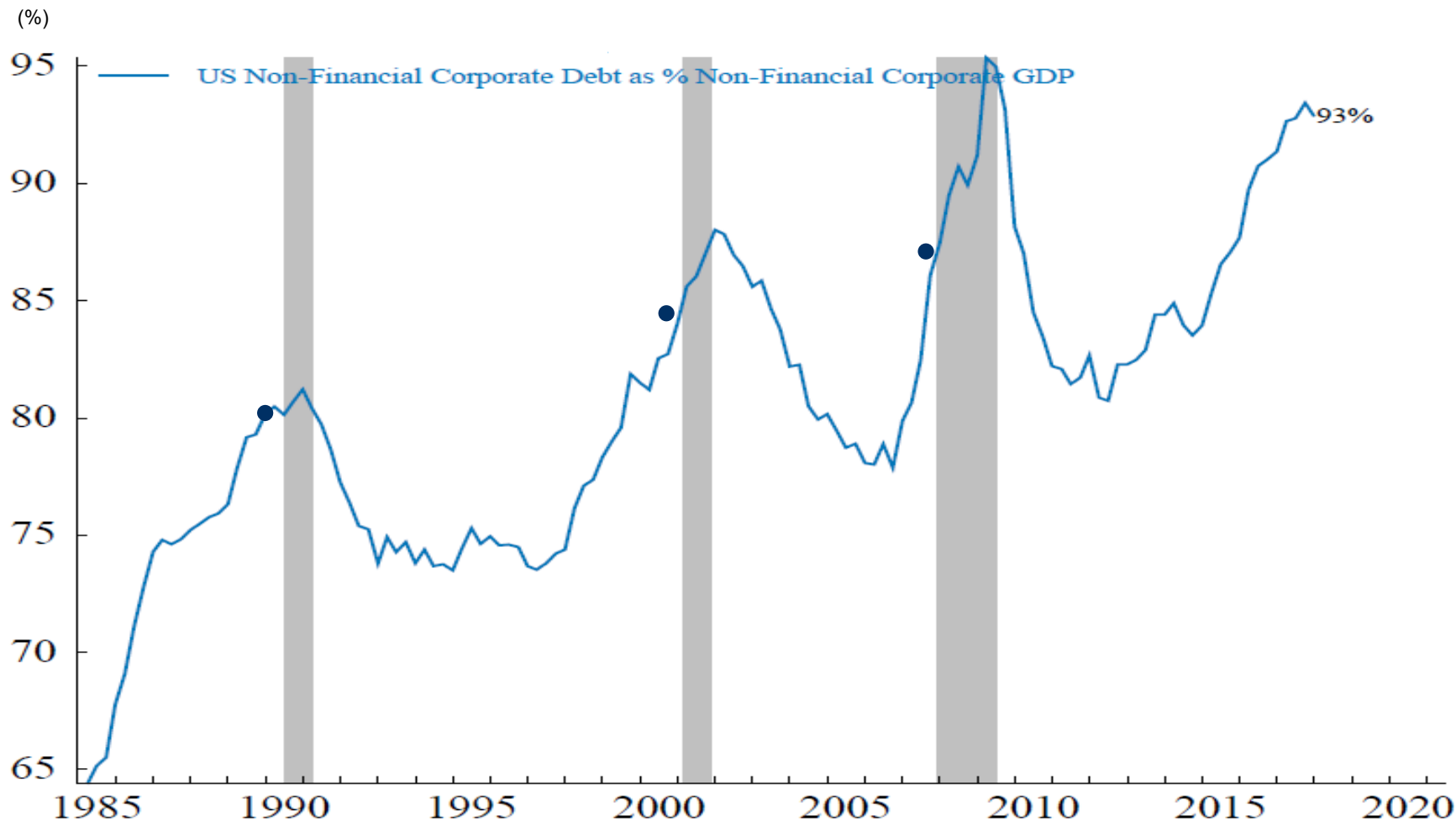
Cash Back to Paying More Than Stocks



Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics. Data as of June 6, 2018.

Spurred by Free Money, Corporate Debt Near Record Highs

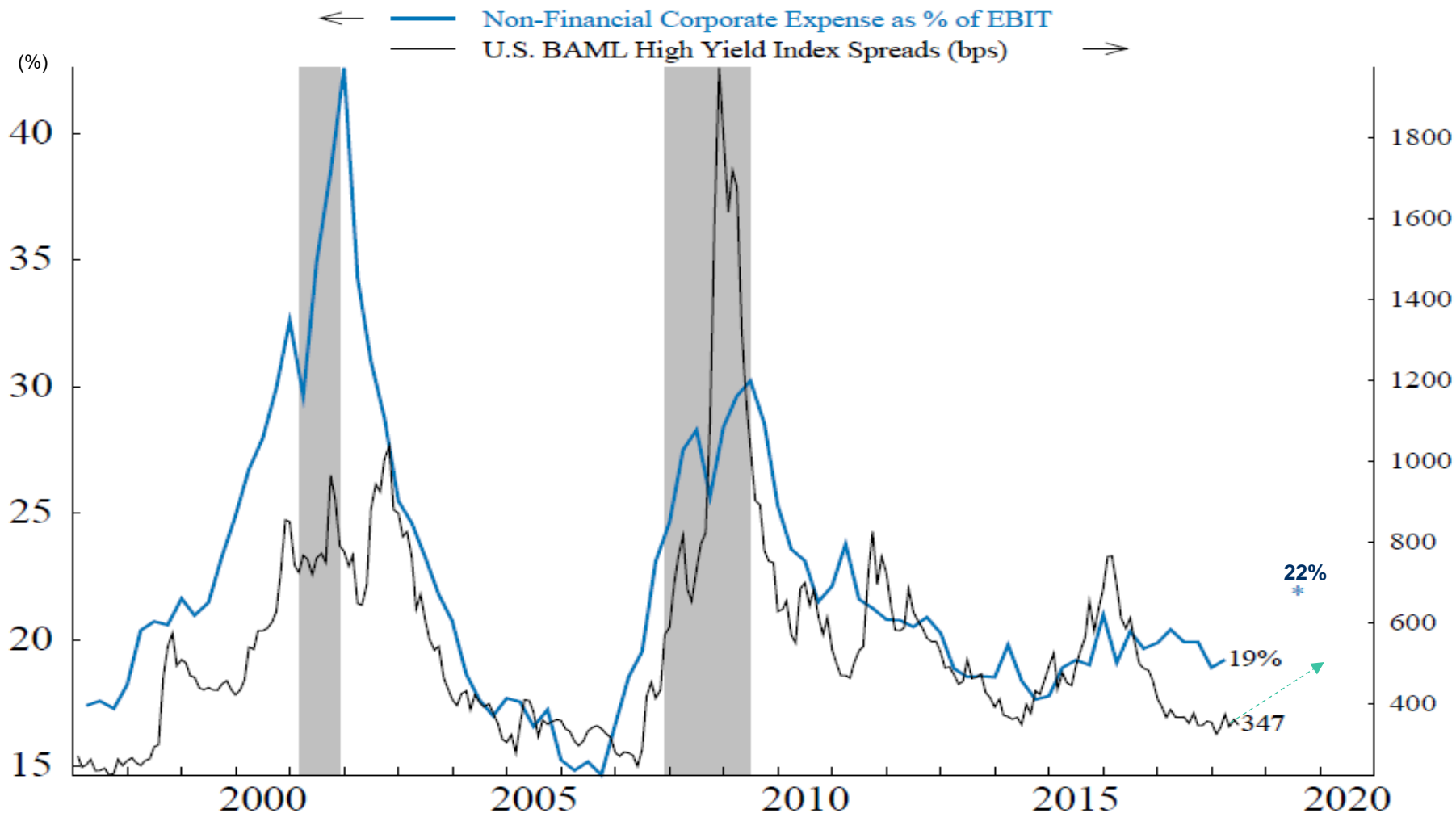
US Non-Financial Corporate Debt to GDP



Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics. Data as of June 6, 2018.

Interest Expense to Rise to 22% of EBIT

Inverted U.S. Net Interest Coverage Ratio vs. High Yield Spread

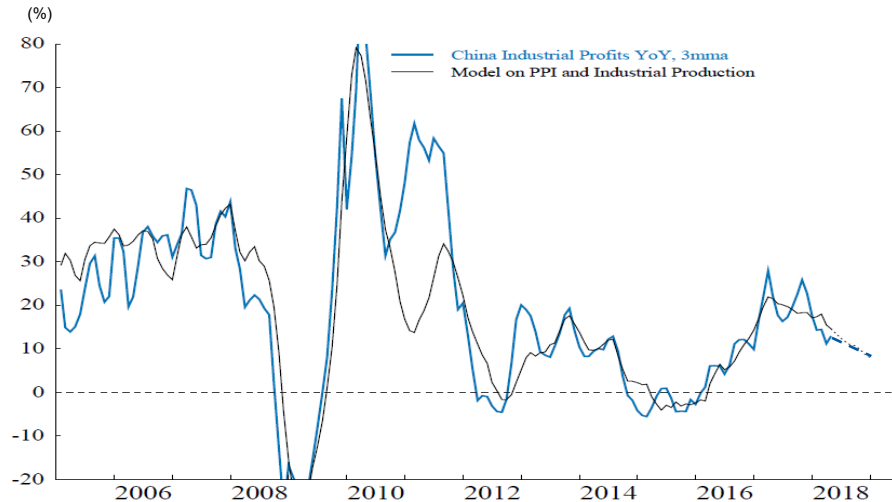


Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics. Data as of June 5, 2018

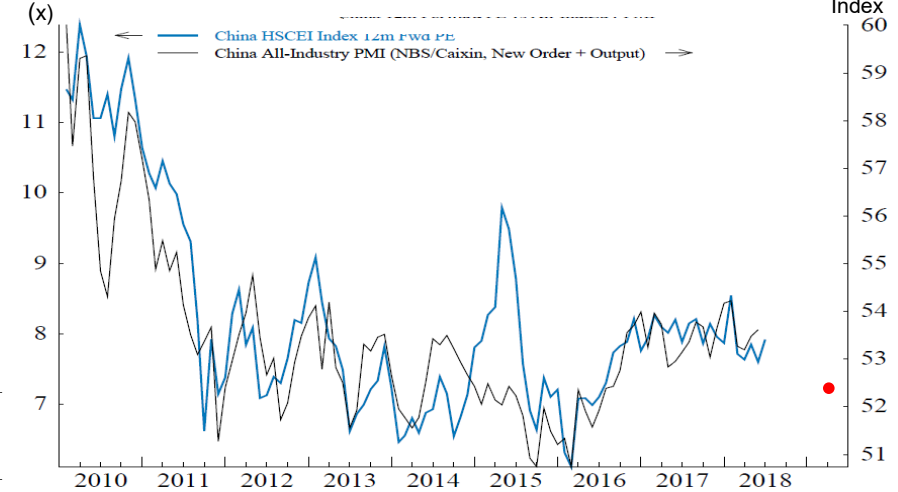
UW China H-Shares vs Global Equities

Slowing Chinese Nominal Growth to Put Pressure on Prospective Returns

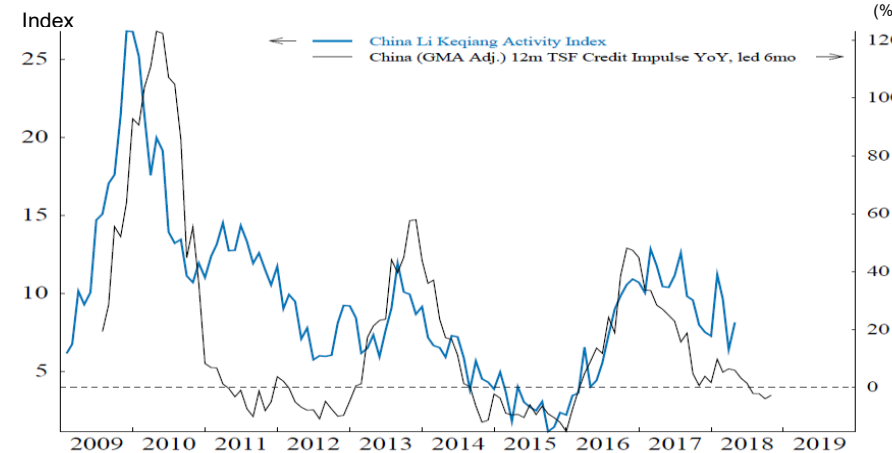
China Industrial Profitability to Worsen as Nominal Growth Slows



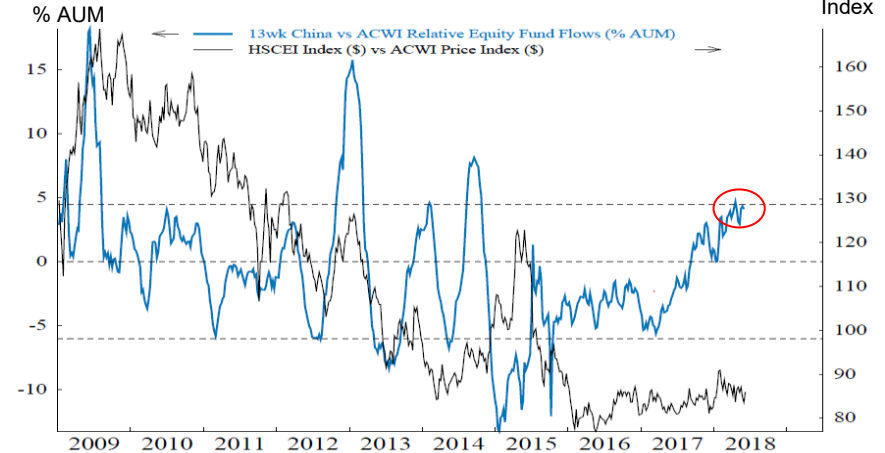
Slower Growth To Put Downward Pressure on Valuation



Commitment to Shadow Bank Deleveraging is Weighing on Activity



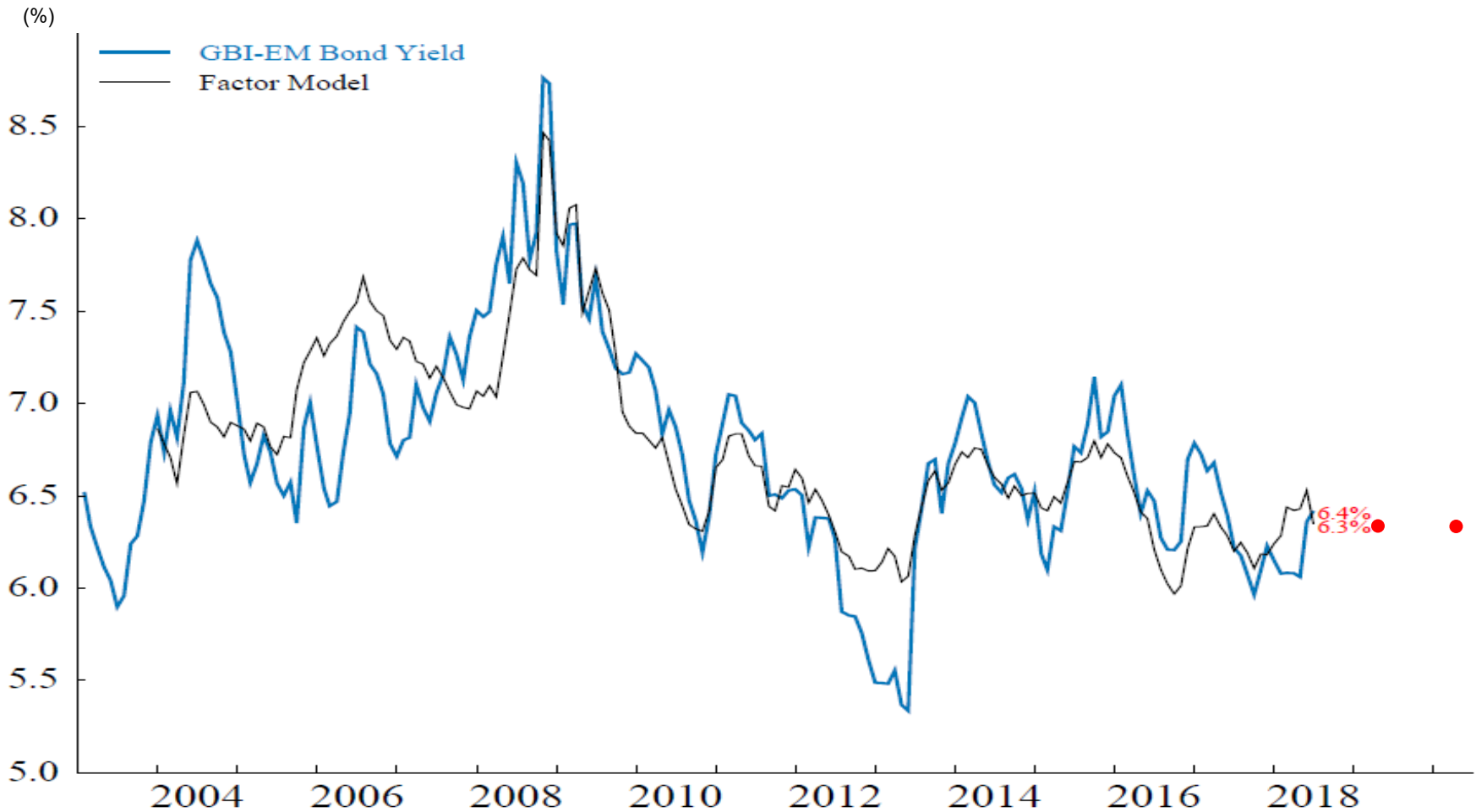
13wk Trailing Relative Fund Flows are at Extremes



Source: MSIM Global Multi-Asset Team Analysis, NBS, Haver Analytics, Bloomberg, MSCI, Factset. Data as of June 5, 2018.

EM Local Bonds Near Fair Value

EM Local Bond Yield vs. Fair Value

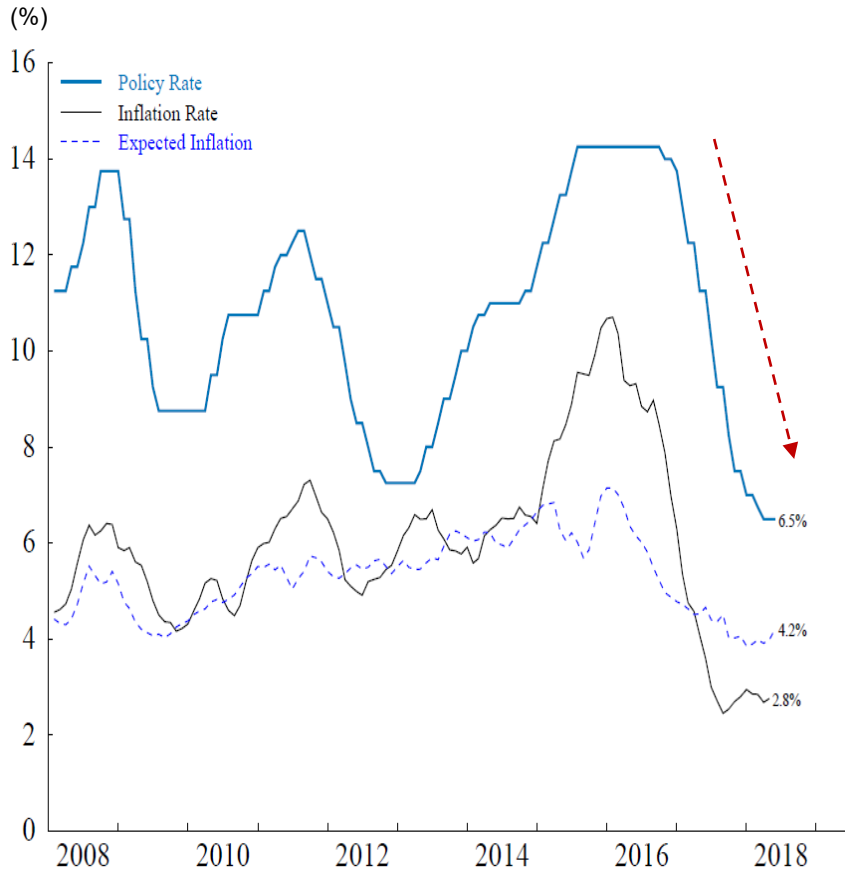


Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics, J.P. Morgan, Bloomberg. Data as of June 5, 2018. Factor model is based on US yield, EM GDP growth expectations, and EM FX REER.

OW Brazil Local Bonds

Brazil Disinflation Leading to Lower Interest Rates

Brazil Policy Rate, Inflation Rate and Expected Inflation



Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics, Bloomberg.
Data as of June 5, 2018

Brazil Core Inflation vs. 3 Year Bond Yield

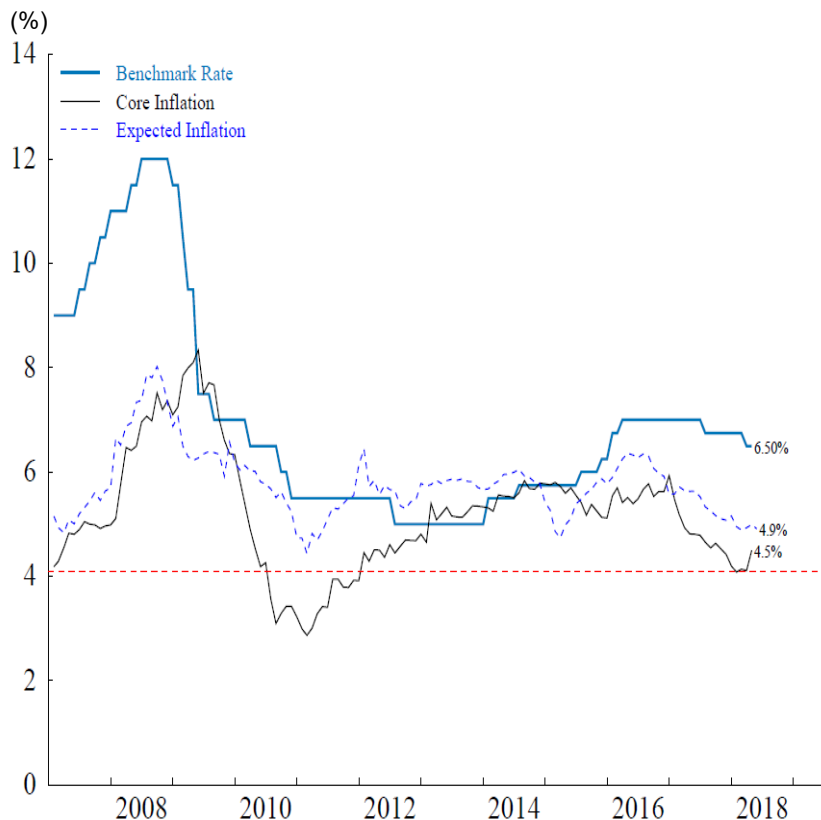


Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics, Bloomberg.
Data as of June 5, 2018.

OW South Africa Local Bonds

Disinflation and Strong Currency to Drive Rates Lower

South Africa Benchmark Rate, Core Inflation and Expected Inflation



Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics, Bloomberg. Data as of June 5, 2018.

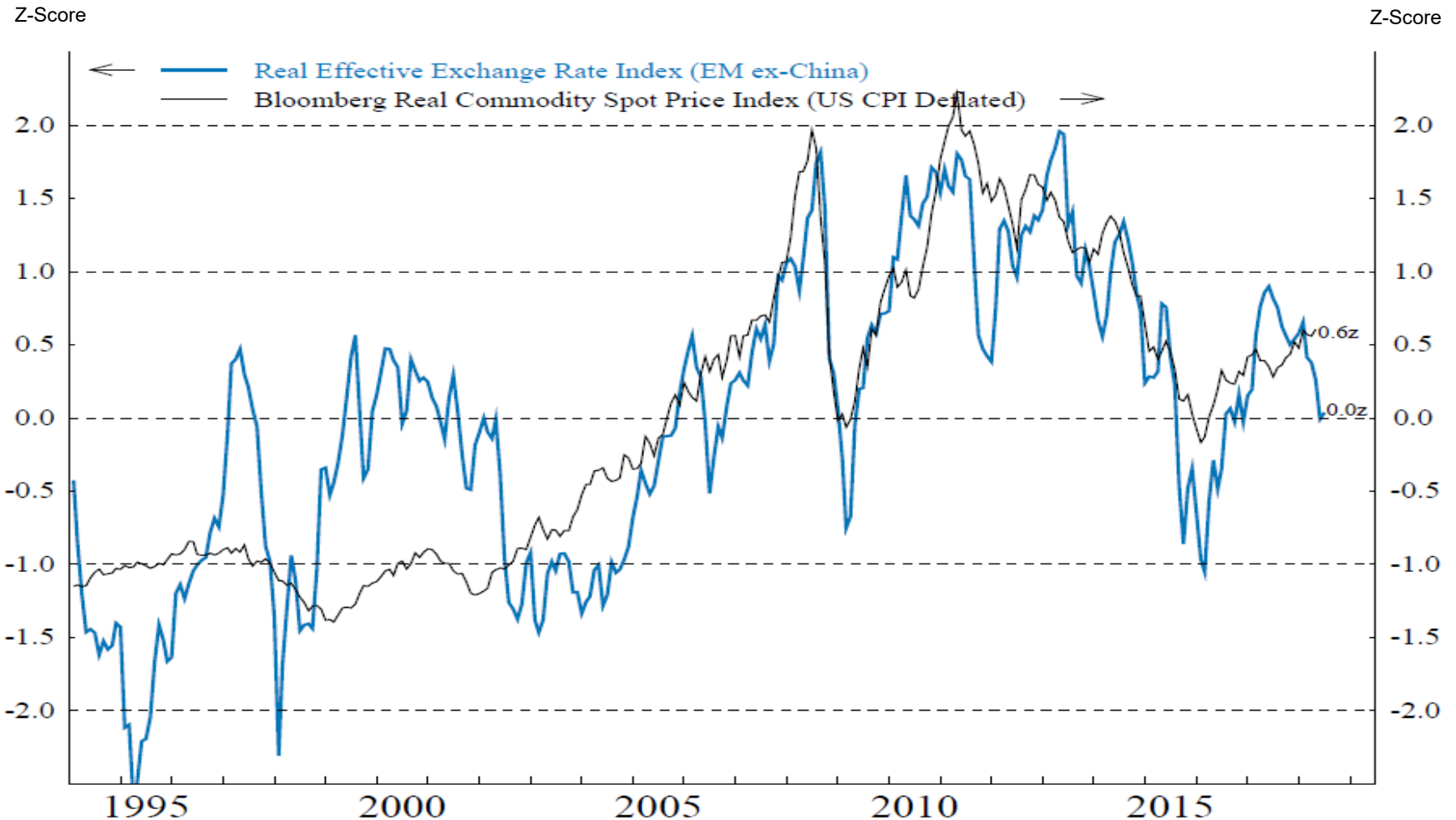
South Africa Core Inflation vs. 10 Year Bond Yield



Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics, Bloomberg. Data as of June 5, 2018.

EM FX Big Rally Behind Us But EM FX Fairly Valued

EM ex-China Real Effective Exchange Rate vs. Commodity Prices



Source: MSIM Global Multi-Asset Team Analysis, J.P. Morgan, Bloomberg. Data as of June 5, 2018.

OW Mexican Peso

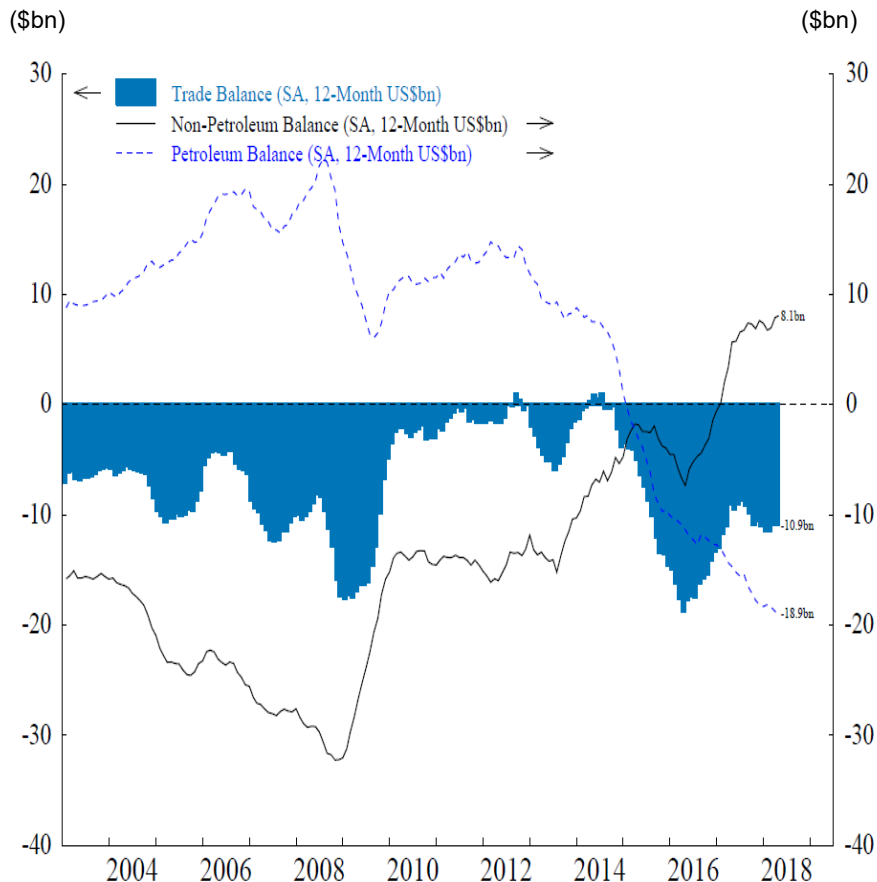
Undervalued Currency Boosting Non-Oil Net Exports

MXN REER Deviation from Historical Mean



Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics, Bloomberg. Data as of June 5, 2018.

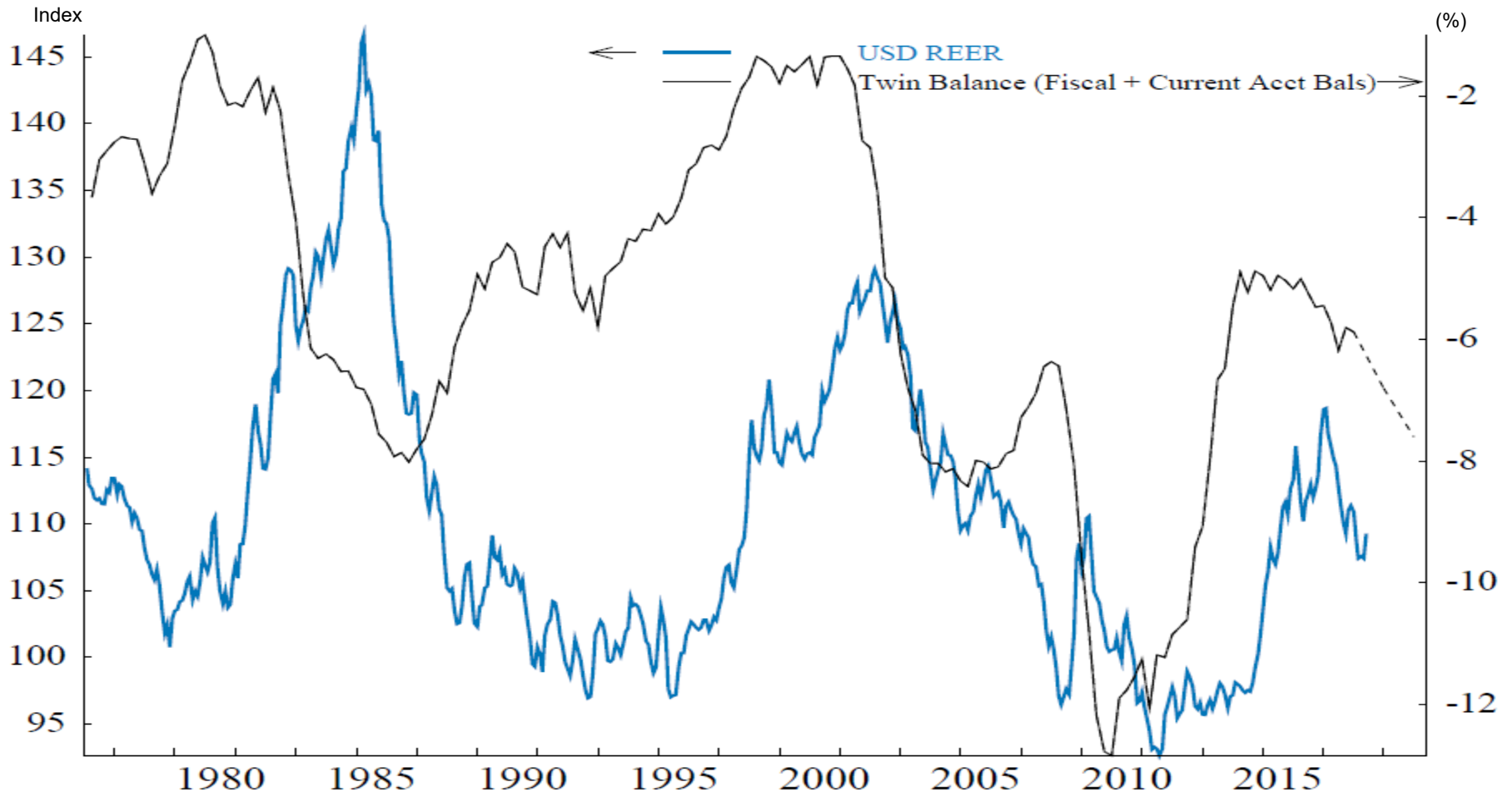
Mexico Trade Balance



Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics, Bloomberg. Data as of June 5, 2018.

US Twin Deficits Expected to Deteriorate and Pressure USD

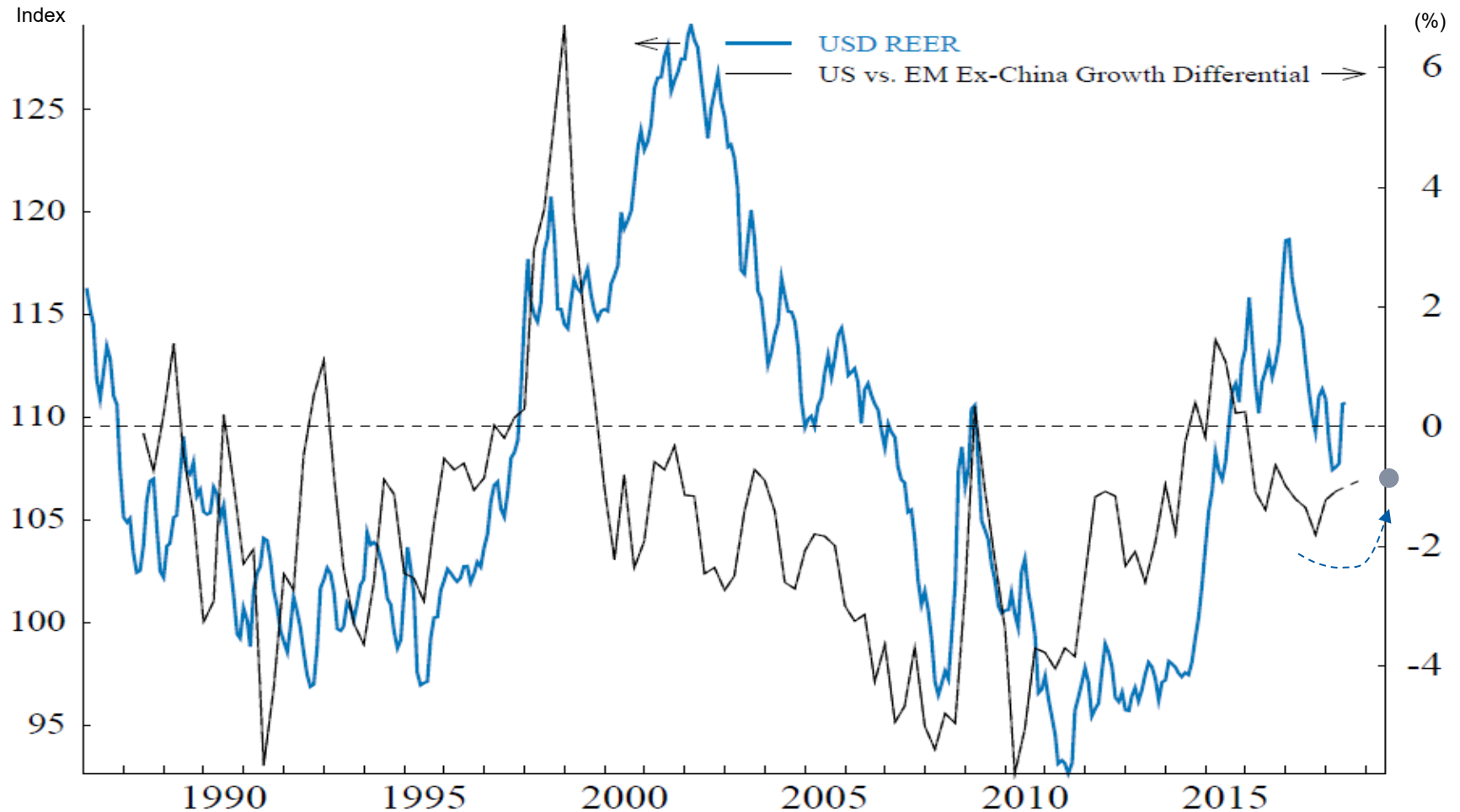
USD REER vs. US Twin Deficits



Source: MSIM Global Multi-Asset Team Analysis, Haver Analytics. Data as of May 16, 2018.

... But Accelerating US Growth Relative to Emerging Markets Bullish for USD

US Dollar (DXY Index) vs. Growth Differentials



Source: MSIM Global Multi-Asset Team Analysis, JP Morgan, Haver Analytics. Data as of June 5, 2018.

Risk Allocation by Theme and Position

As of June 8, 2018

Annualized

Forecasted Tracking Error (10 Year)¹ 4.5%

¹ Source: Bloomberg LP, Global Multi-Asset Team Analysis. Based on ten years of equally-weighted weekly data

Summary by Theme	Undiversified Risk Units*
China Slowdown	3.6
Europe Recovery	2.3
Global Growth Peaking	2.2
U.S. Consumer Finance	2.0
Latin American Rates	1.9
South Africa Turnaround	1.8
Australia Slowdown	1.4
Japan Reflation	1.3
Brexit Worries Overstated	1.1
Deep Value EM FX	1.1
Czech Republic Reflation	0.9
Russia Recovery / Disinflation	0.9
Portugal Sovereign Credit	0.8
Canada Slowdown	0.5
U.S. Dollar Rebound	0.2
Deep Value MLPs	0.2
Swedish Reflation	0.2

	Undiversified Risk Units*	Target Position Weight	Diversified Tracking Error Contribution
UW China H-Shares / OW Global Equities	1.5	-6.4%	0.52%
UW Copper	0.9	-3.0%	0.21%
UW China Mid-Sized Banks / OW Global Equities	0.5	-1.6%	0.15%
UW Luxury Goods Manufacturers / OW Global Equities	0.4	-2.4%	0.07%
UW Emerging Market Equities / OW Developed Market Equities	0.3	-2.0%	0.06%
UW Elevator Manufacturers / OW Global Equities	0.1	-0.6%	0.02%
China Slowdown	3.6	-15.9%	1.02%
OW Greek 10-Year Bonds / UW German 10-Year Bunds	1.2	3.0%	0.29%
OW Eurozone Domestic Equities / UW U.S. Equities	1.1	6.8%	0.23%
Europe Recovery	2.3	9.8%	0.53%
OW U.S. 10-Year TIPS	1.1	12.9%	0.06%
UW U.S. Cyclical / OW U.S. Defensives	0.6	-3.8%	0.02%
UW Global Machinery / OW Global Equities	0.3	-2.3%	0.07%
OW U.S. 30-Year Treasuries	0.2	1.6%	0.00%
Global Growth Peaking	2.2	8.3%	1.15%
OW U.S. Consumer Finance / UW U.S. Equities	2.0	7.8%	1.07%
U.S. Consumer Finance	2.0	7.8%	1.07%
OW Mexico 2-Year Swap (Receiver) / UW Mexico 10-Year Swap (Payer)	1.0	61.2%	0.05%
OW Brazil Bond 3-Year Bonds	1.0	17.4%	0.06%
Latin American Rates	1.9	78.6%	0.11%
OW South Africa 25-year Bonds	1.8	14.6%	0.27%
South Africa Turnaround	1.8	14.6%	0.27%
UW Australian Dollar / OW (1/2 U.S. Dollar 1/2 Euro)	0.8	-6.4%	0.12%
UW Australian Dollar / OW U.S. Dollar	0.4	-2.6%	0.08%
UW Australian Dollar / OW G-4 FX	0.2	-1.5%	0.03%
Australia Slowdown	1.4	-10.5%	0.23%
OW Japanese Equities / UW U.S. Equities	0.9	4.5%	0.16%
UW Japanese Yen / OW U.S. Dollar	0.3	-2.9%	0.05%
Japan Reflation	1.3	1.6%	0.21%
OW British Pound / UW Euro	1.1	9.9%	0.24%
Brexit Worries Overstated	1.1	9.9%	0.24%
OW Turkish Lira / UW EM Currencies (Broad 15)	0.7	7.3%	0.14%
OW Mexican Peso / UW EM Currencies (Broad 15)	0.3	3.4%	0.05%
Deep Value EM FX	1.1	10.7%	0.20%
UW Euro / OW Czech Koruna	0.9	-13.7%	0.15%
Czech Republic Reflation	0.9	-13.7%	0.15%
OW Russian Ruble / UW Canadian Dollar	0.9	4.5%	0.15%
Russia Recovery / Disinflation	0.9	4.5%	0.15%
OW Portugal 10-Year Bonds / UW German 10-Year Bunds	0.8	3.8%	0.20%
Portugal Sovereign Credit	0.8	3.8%	0.20%
UW Canadian Banks / OW Global Equities	0.5	-2.7%	-0.03%
Canada Slowdown	0.5	-2.7%	-0.03%
UW Euro / OW U.S. Dollar	0.2	-1.8%	0.04%
U.S. Dollar Rebound	0.2	-1.8%	0.04%
OW U.S. MLPs / UW U.S. Equities	0.2	1.1%	0.00%
Deep Value MLPs	0.2	1.1%	0.00%
OW Swedish Krona / UW Euro	0.2	2.6%	0.01%
Swedish Reflation	0.2	2.6%	0.01%
Total (ex Diversification)	22.4		20.0%
Total Portfolio	5.3		4.54%

*Risk Units = Actual position weight x (S&P 500 volatility / position volatility) / 5.2%. Based on ten years of equally-weighted weekly data. Source: Bloomberg LP, Global Multi-Asset Team Analysis. Holdings and weightings are subject to change daily. Portfolio compositions may change depending on market conditions and objectives. Provided for informational purposes only and should not be deemed as a recommendation to buy or sell securities in the regions or asset classes referenced.

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The rep account has employed the investment strategy in a similar manner to that employed in the team's separately managed accounts

("SMAs") and other investment vehicles, i.e., they were generally operated in a consistent manner. However, portfolio management decisions made for such rep account may differ (i.e., with respect to liquidity or diversification) from the decisions the portfolio management team would make for SMAs and other investment vehicles. In addition, the holdings and portfolio activity in the rep account may not be representative of some SMAs managed under this strategy due to differing investment guidelines or client restrictions. Actual fees and expenses for SMAs and other investment vehicles will differ from those of the rep account, which would cause their performance to differ.

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South Carolina Retirement System Investment Commission

JUNE 15, 2018

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We are a
leading global
investor and operator
of real assets

Global Presence

~\$285B

ASSETS UNDER
MANAGEMENT

80,000+

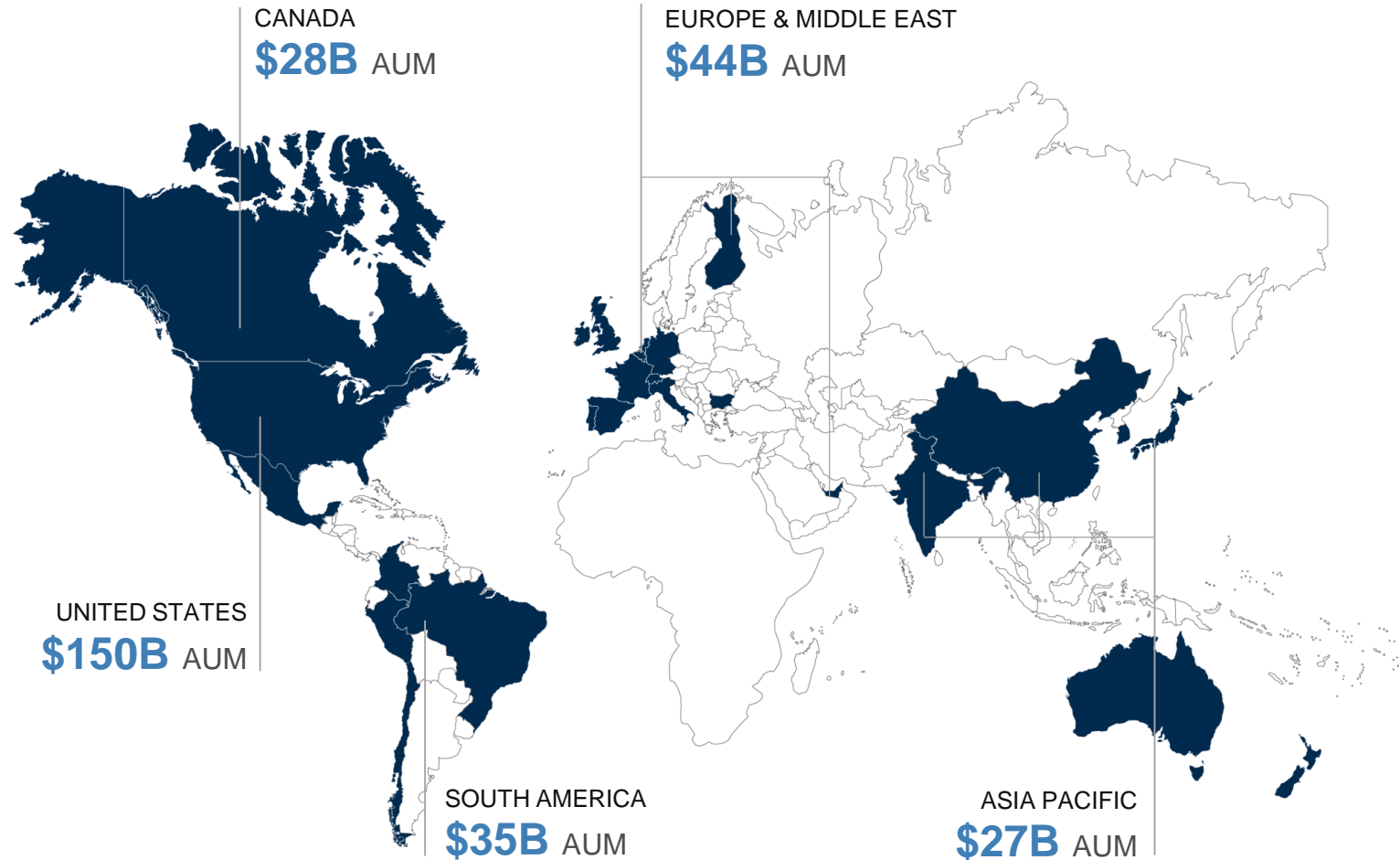
OPERATING
EMPLOYEES¹

750

INVESTMENT
PROFESSIONALS¹

30+

COUNTRIES



1) As of March 31, 2018. Covers investment professionals and operating employees across all of Brookfield's business lines (e.g., private funds, listed entities, and public securities vehicles) and investment sectors (e.g., real estate, infrastructure, and private equity), including related operating businesses and portfolio companies. Investment professionals include all personnel involved in the capital allocation process, including research, investment analysis, risk analysis, performance measurement analysis, and other personnel.

Our Focus

We focus on sectors in which our in-depth operating experience gives us a competitive advantage

Real Estate

\$159 billion

AUM



Office, Retail, Multifamily,
Industrial, Hospitality

Infrastructure

\$76 billion

AUM



Utilities, Transport, Energy,
Communications Infrastructure,
Sustainable Resources,
Hydroelectric, Wind, Solar

Private Equity

\$28 billion

AUM



Business Services, Industrial
Operations and Residential
Development

Note: AUM above excludes public securities managed by Brookfield Investment Management Inc. (the "Public Securities Group" or "PSG") totaling ~\$18 billion and excludes cash, financial assets and other assets totaling ~\$2 billion

Brookfield's Perspective: The Opportunity in Private Markets

1) Private Equity

- Long-run outperformance over public equity¹

2) Private Credit

- Importance of lending as an owner

3) Real Estate

- Finding value using operational expertise

4) Infrastructure

- Constraints in public financing provide opportunity for private sector investors

1) Source: Cambridge Associates, June 2018

Private Markets Outperformance

Hamilton Lane Private Markets Index						
Strategy		Annualized Time-Weighted Return (as of 12/31/17)				
		1 Year	3 Year	5 Year	10 Year	15 Year
All Private Markets ¹		16.5%	10.5%	12.0%	7.8%	12.6%
Private Equity	All Equity Strategies	20.3%	12.9%	14.5%	9.6%	13.7%
	Developed Markets Buyout	22.3%	14.2%	14.7%	9.9%	15.4%
	Developed Markets Venture / Growth	15.4%	10.9%	16.3%	10.4%	10.2%
	Rest of World Equity ²	20.7%	11.0%	10.6%	6.3%	9.7%
Public Equities	Global Equity Public Benchmark (MSCI World) ⁴	22.4%	9.3%	11.6%	5.0%	8.9%

Source: Hamilton Lane Data via Cobalt (May 2018). Return figures are geometric averages of USD time-weighted returns. Returns longer than one year are annualized.

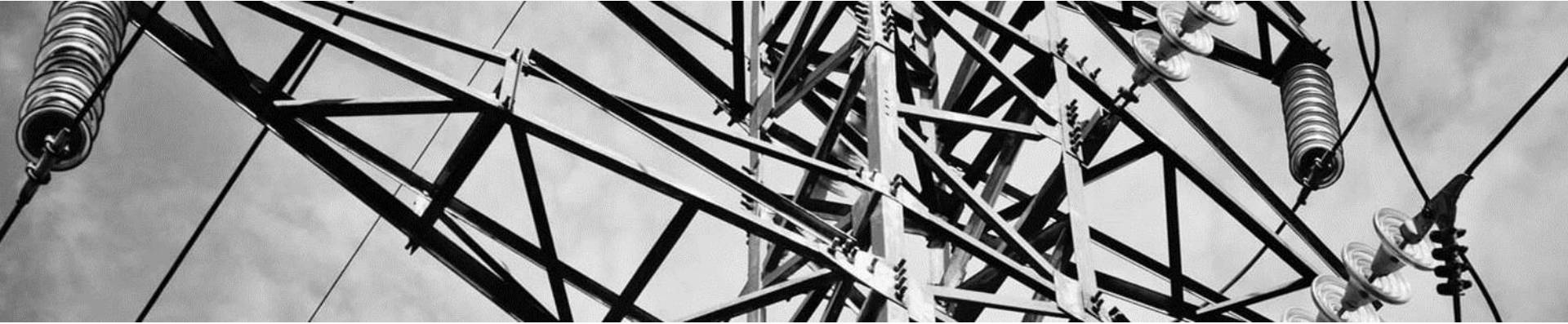
¹ Includes Private Equity, Private Credit, and Private Real Assets strategies

² Includes buyout, growth, venture capital and co-investment focused funds

³ MSCI World USD, net reinvested dividends

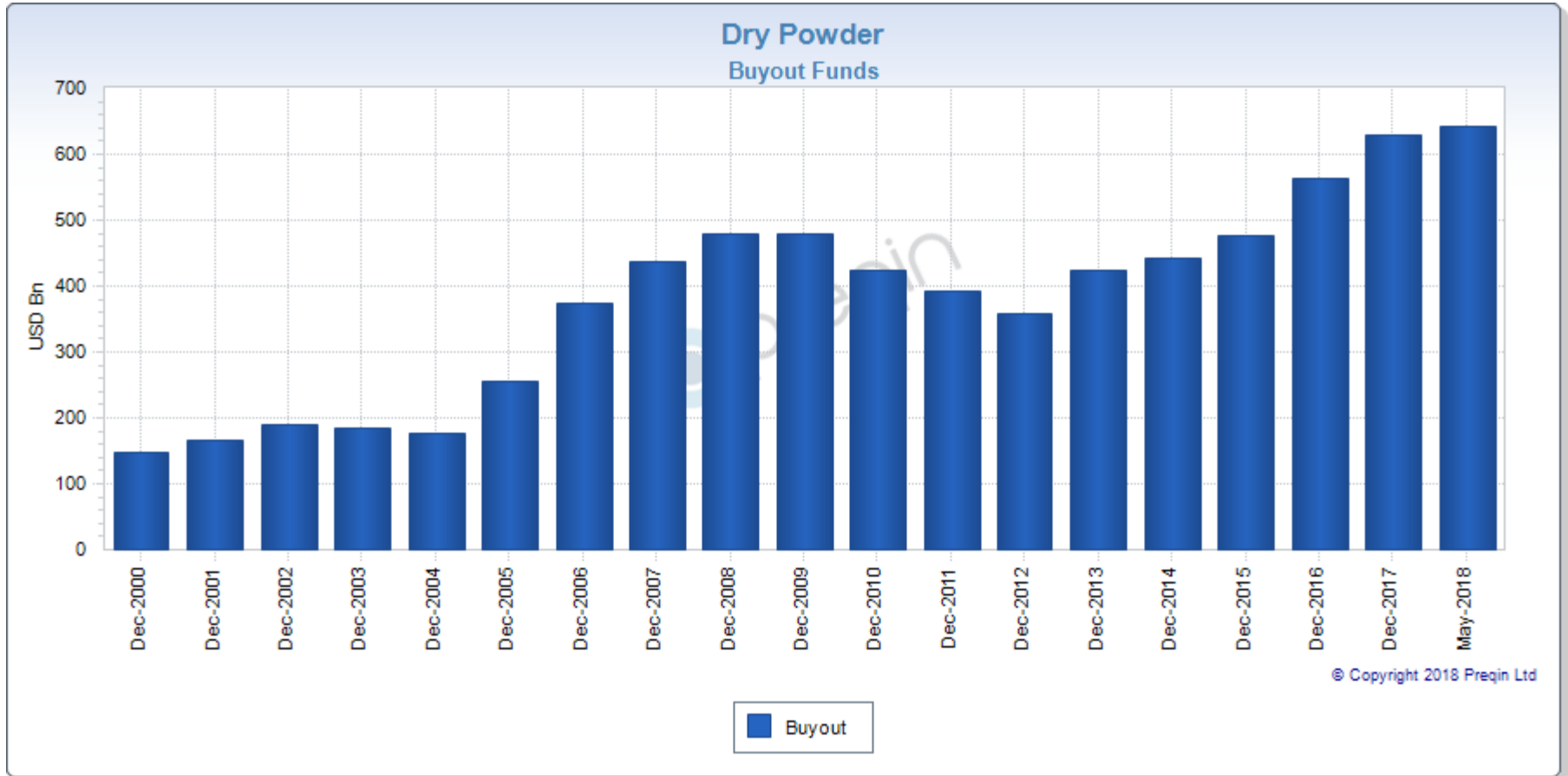
Creating Value in Real Assets



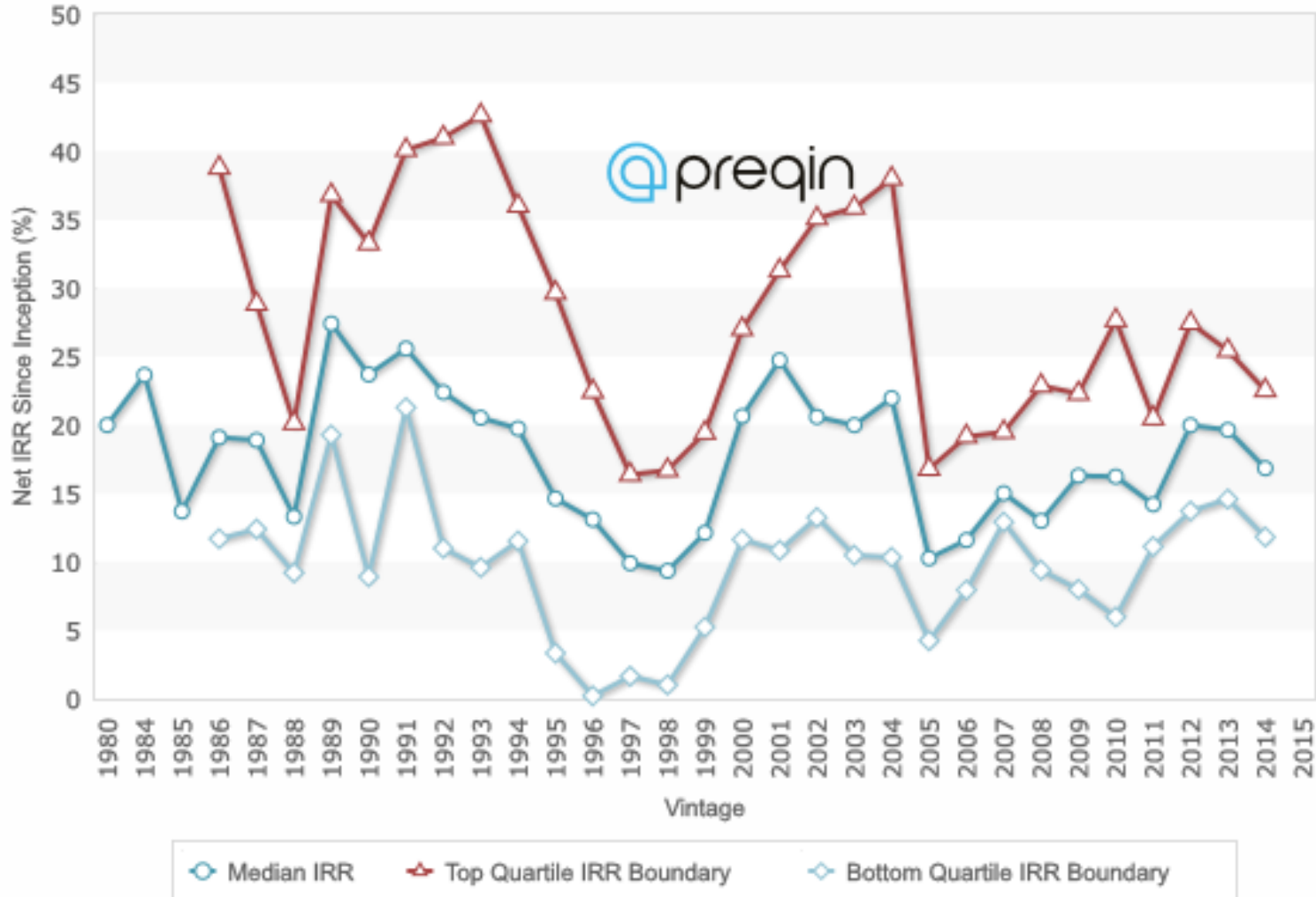


1) Private Equity

Dry Powder in Buyout Funds

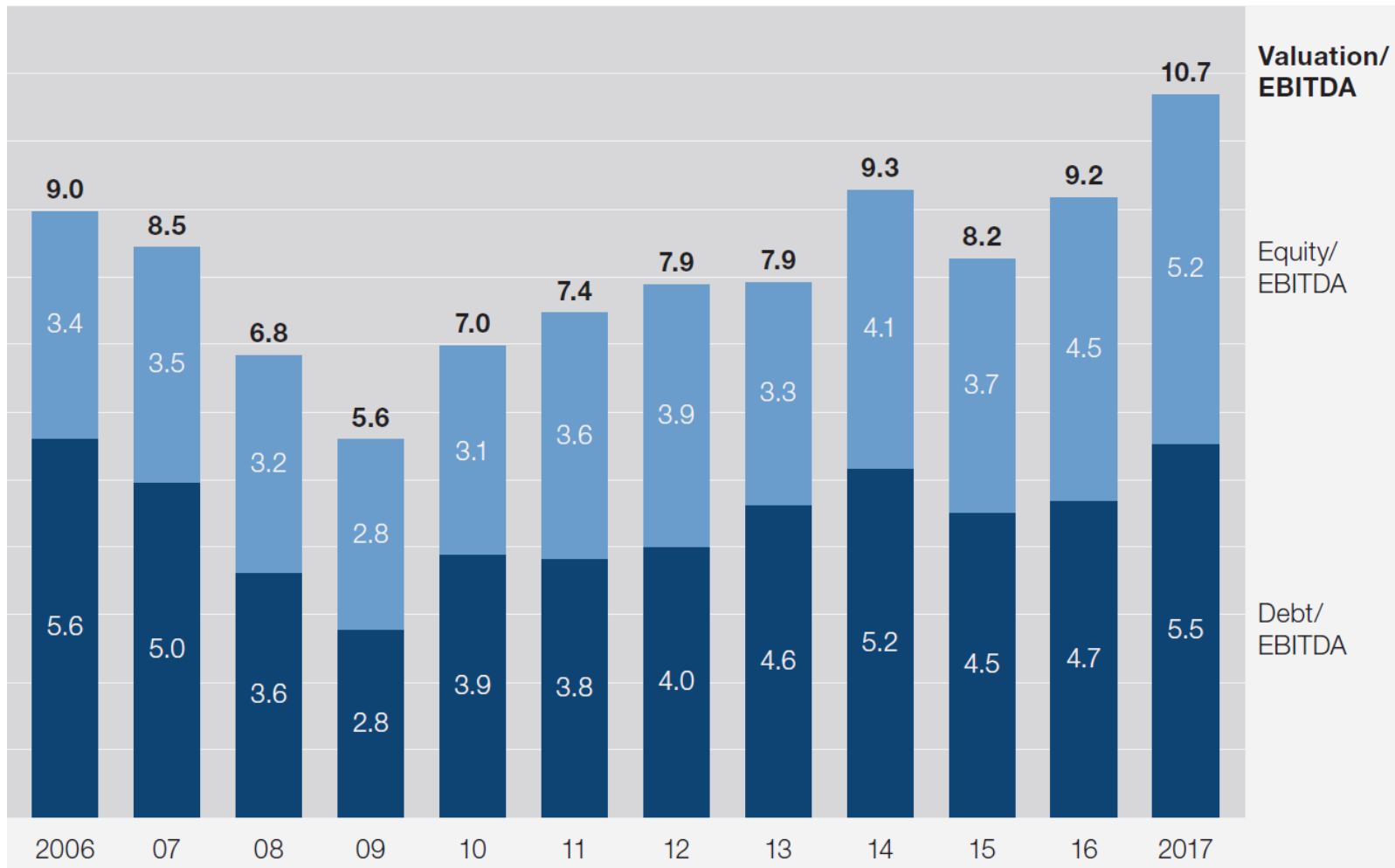


All Regions / Buyout (Median IRR)



Private Equity Deal Multiples Continue to Rise

Global median private equity EBITDA multiples
2006–2017



Source: McKinsey, 2018

Comparing Private Equity to Public Equity Returns

Index	1-Quarter	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year	25-Year
Cambridge Associates LLC US Private Equity Index®	5.07	17.49	11.79	13.86	9.80	13.96	12.09	13.44
Bloomberg Barclays Government/Credit Bond Index	0.49	4.00	2.38	2.13	4.08	4.20	5.04	5.55
Dow Jones Industrial Average Index	10.96	28.11	14.36	16.37	9.28	10.25	8.36	10.96
Dow Jones US Small Cap Index	5.25	16.33	8.66	13.37	9.23	11.77	9.23	10.65
Dow Jones US TopCap Index	6.65	22.02	11.37	15.76	8.63	10.23	7.32	9.64
Nasdaq Composite Index*	6.27	28.24	13.38	17.98	10.04	11.57	7.68	9.73
Russell 1000® Index	6.59	21.69	11.23	15.71	8.59	10.18	7.39	9.78
Russell 2000® Index	3.34	14.65	9.96	14.12	8.71	11.17	7.89	9.54
S&P 500 Index	6.64	21.83	11.41	15.79	8.50	9.92	7.20	9.69
Wilshire 5000 Total Market Index	6.39	21.00	11.36	15.67	8.64	10.40	7.47	9.73

*Capital change only.

Source: Cambridge Associates, June 2018. Data as of December 2017. The Cambridge Associates LLC US Private Equity Index® is a horizon calculation based on data compiled from 1,455 US private equity funds (buyout, growth equity, private equity energy and subordinated capital funds), including fully liquidated partnerships, formed between 1986 and 2017. Private indexes are pooled horizon internal rate of return (IRR) calculations, net of fees, expenses, and carried interest. The timing and magnitude of fund cash flows are integral to the IRR performance calculation. Public indexes are average annual compounded return (AACR) calculations which are time weighted measures over the specified time horizon, and are shown for reference and directional purposes only. Due to the fundamental differences between the two calculations, direct comparison of IRRs to AACRs is not recommended.

Note: The information provided herein is for illustrative and discussion purposes only.

Brookfield's Perspective: The Opportunity in Private Equity

Private equity “taking share”

- The number of publicly listed U.S. companies has halved since 1996¹
- Capital allocation decisions can be long-term in nature under private ownership
- Less mark-to-market volatility when owned under a private structure

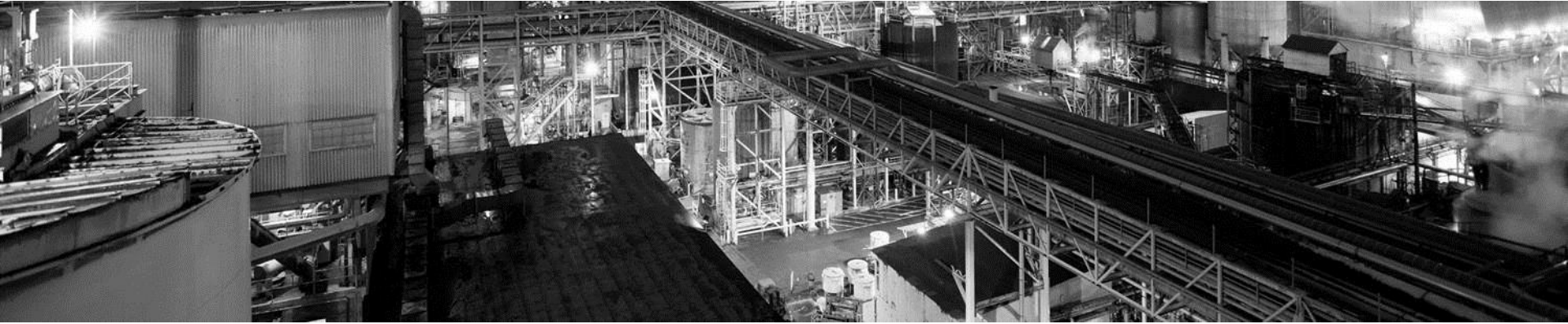
Finding value

- Even in this environment, one can still buy attractive companies out of bankruptcy
- Companies that are stressed who need a long-term capital solution

Enhancing value

- Operations-oriented approach is a differentiator

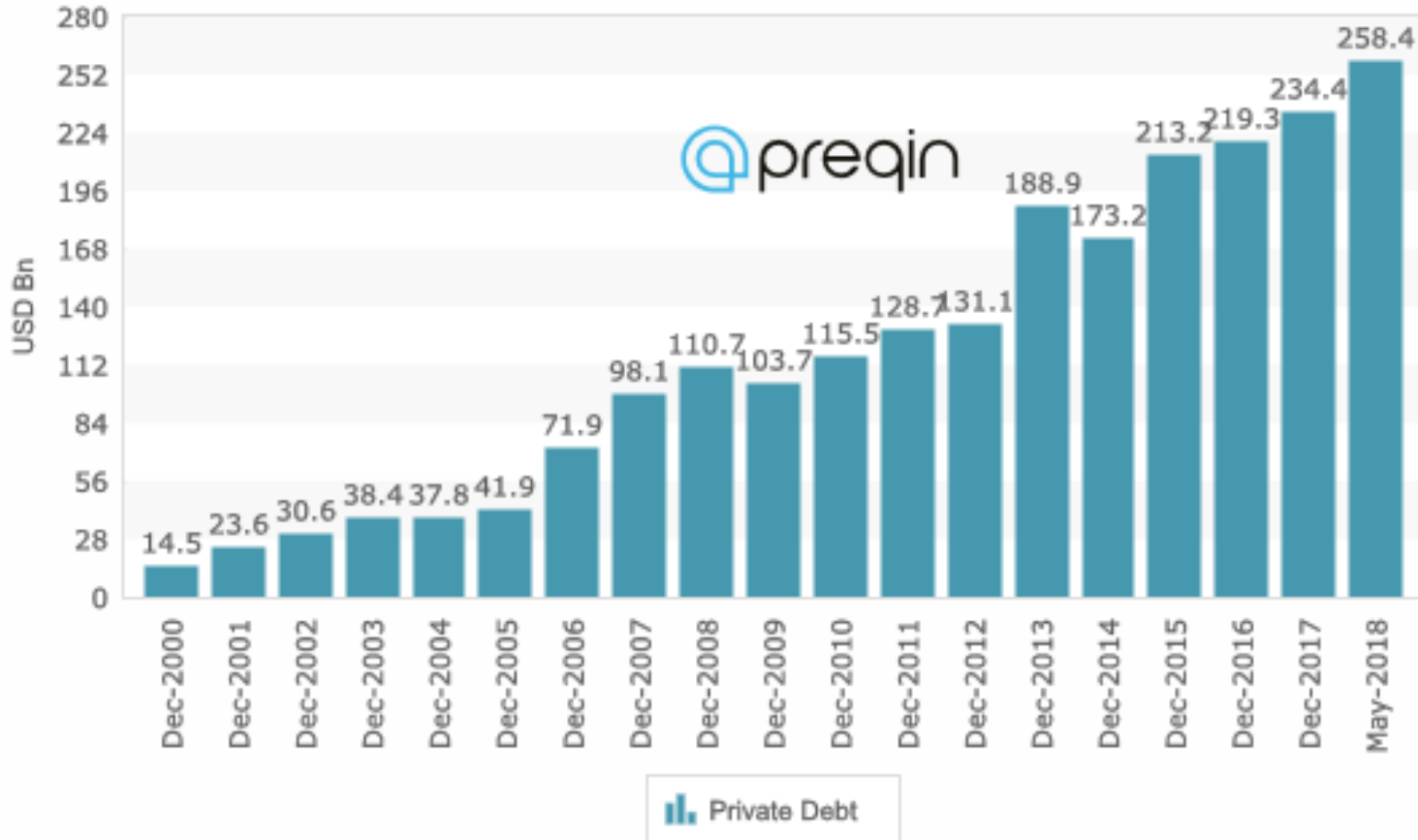
1) Source: *Financial Times*, April 2018



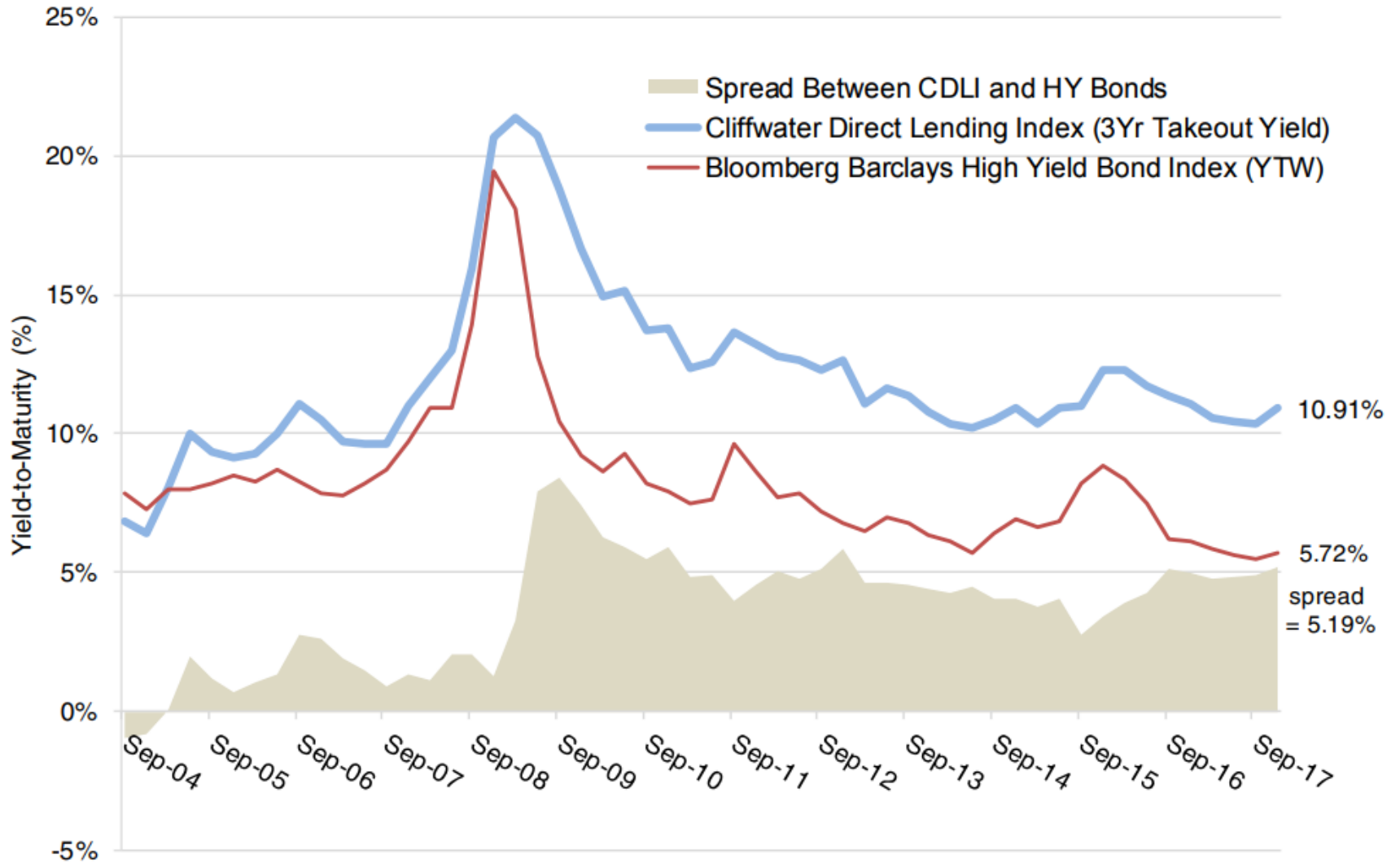
2) Private Credit

Dry Powder

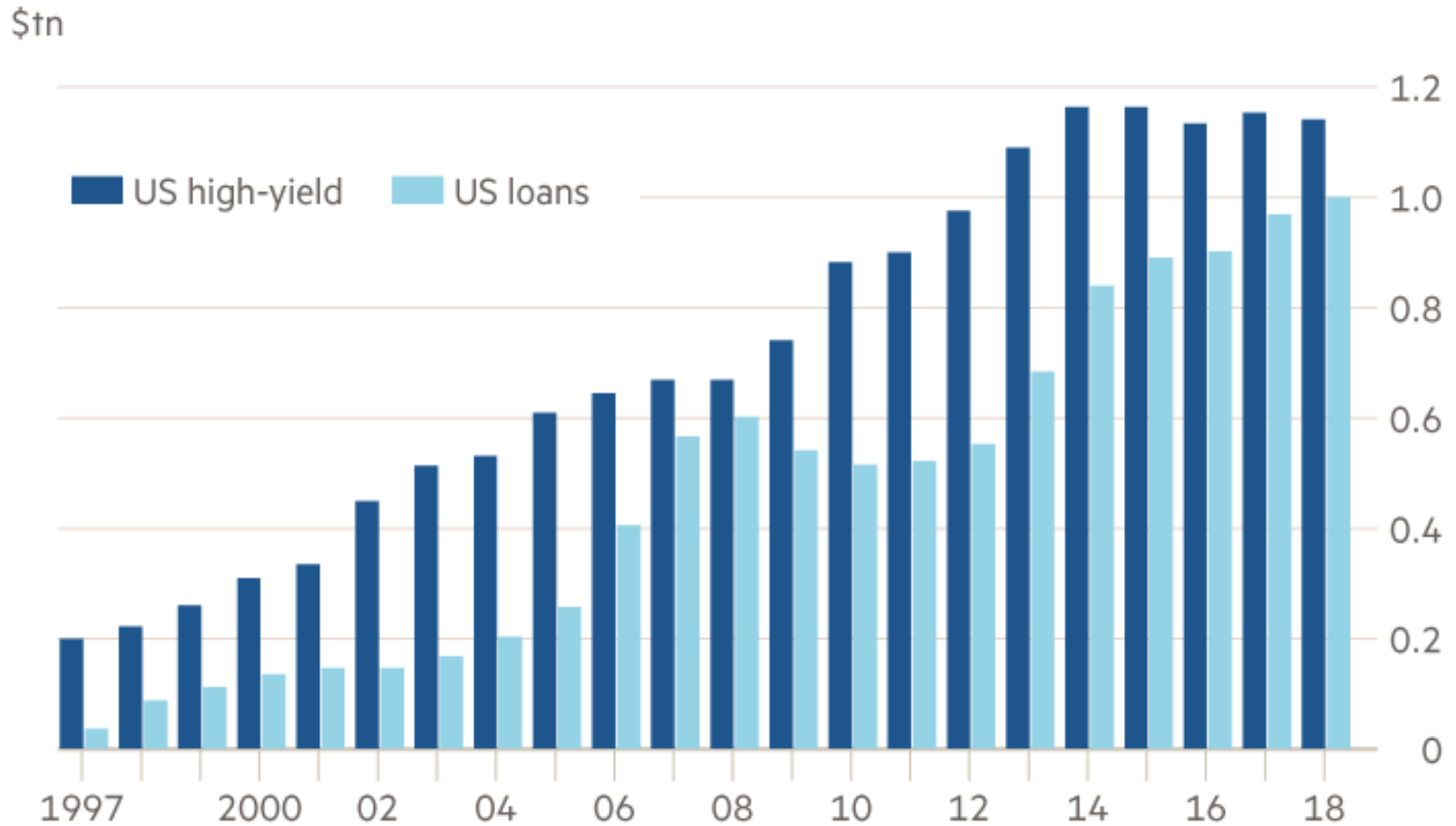
Private Debt Funds



Yield-to-Maturity



Loan Market Catching Up to Bonds

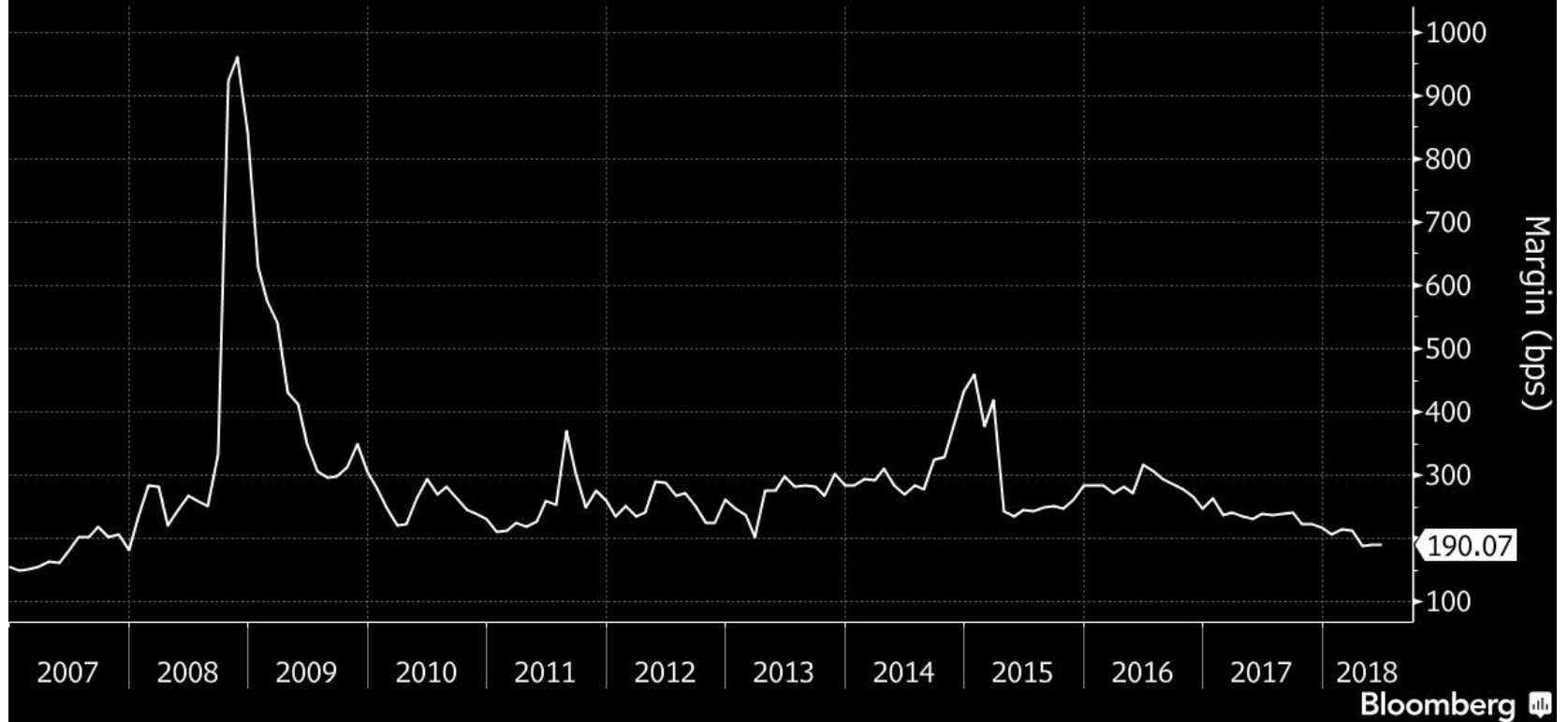


Source: Financial Times, May 2018

Leveraged Loan Spreads

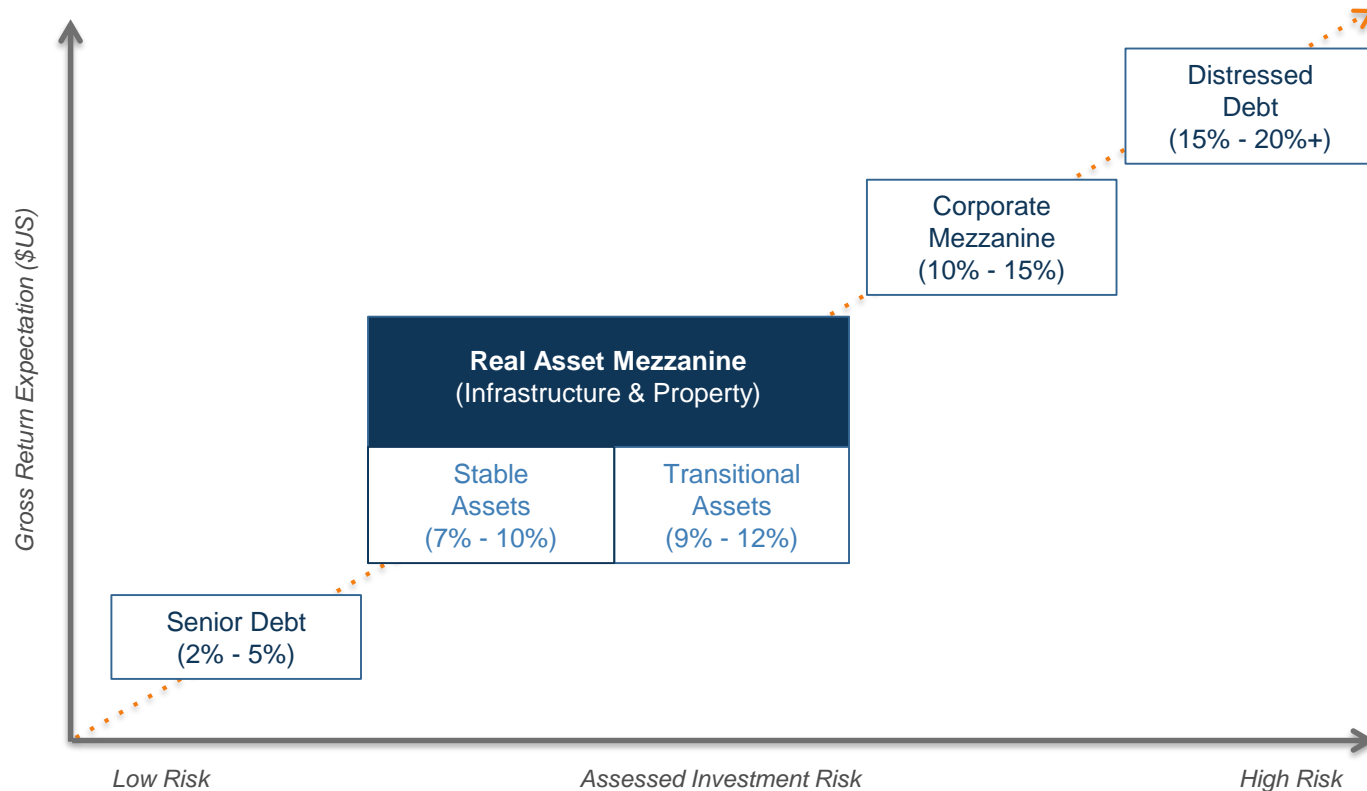
How Low Can You Go? Margins are returning to pre-crisis tights

■ J.P. Morgan BB/B Leveraged Loan Index BBB Spread to 3-year



Risk/Return Profile of Real Asset Mezzanine Debt

We believe real asset mezzanine debt offers attractive risk adjusted returns compared to other alternatives within the risk continuum of private debt



Source: Based on Brookfield internal research. Any conclusions provided herein are based on various assumptions, any of which may prove to be incorrect.

Note: The information provided herein is for informational and illustrative purposes only. Gross return expectations and assessed investment risks are based on Brookfield's own views of the asset classes and there could be substantial variations. Variations may be based on, among other things, the specific characteristics of the asset, transaction structure and geography. Please also see the "Notice to Recipients" for additional information regarding third party information. Gross returns do not include fund expenses, management fees and carried interest, which would reduce an investor's returns. Net returns are not available on an asset level as such fees and expenses are calculated at the fund level only. If such fees, expenses and carried interest were included, asset level performance results would be lower. An investment in real asset debt involves substantial risks and there is no assurance that any such investments will achieve comparable returns or avoid losses.

Brookfield's Perspective: The Opportunity in Private Credit

Floating rate exposure

- Income increases with rising interest rates

It's growing rapidly

- Private direct lending provides just 4% of U.S. corporate debt financing¹
- Importance of lending as an owner

The importance of capital flows

- Over time, private markets will attract a growing amount of capital from retail investors
- U.S. credit managers are raising new interval funds that will offer alternative investments²
- Insurance companies need to find yield in a low interest rate environment

1) Source: Cliffwater webinar, October 2017

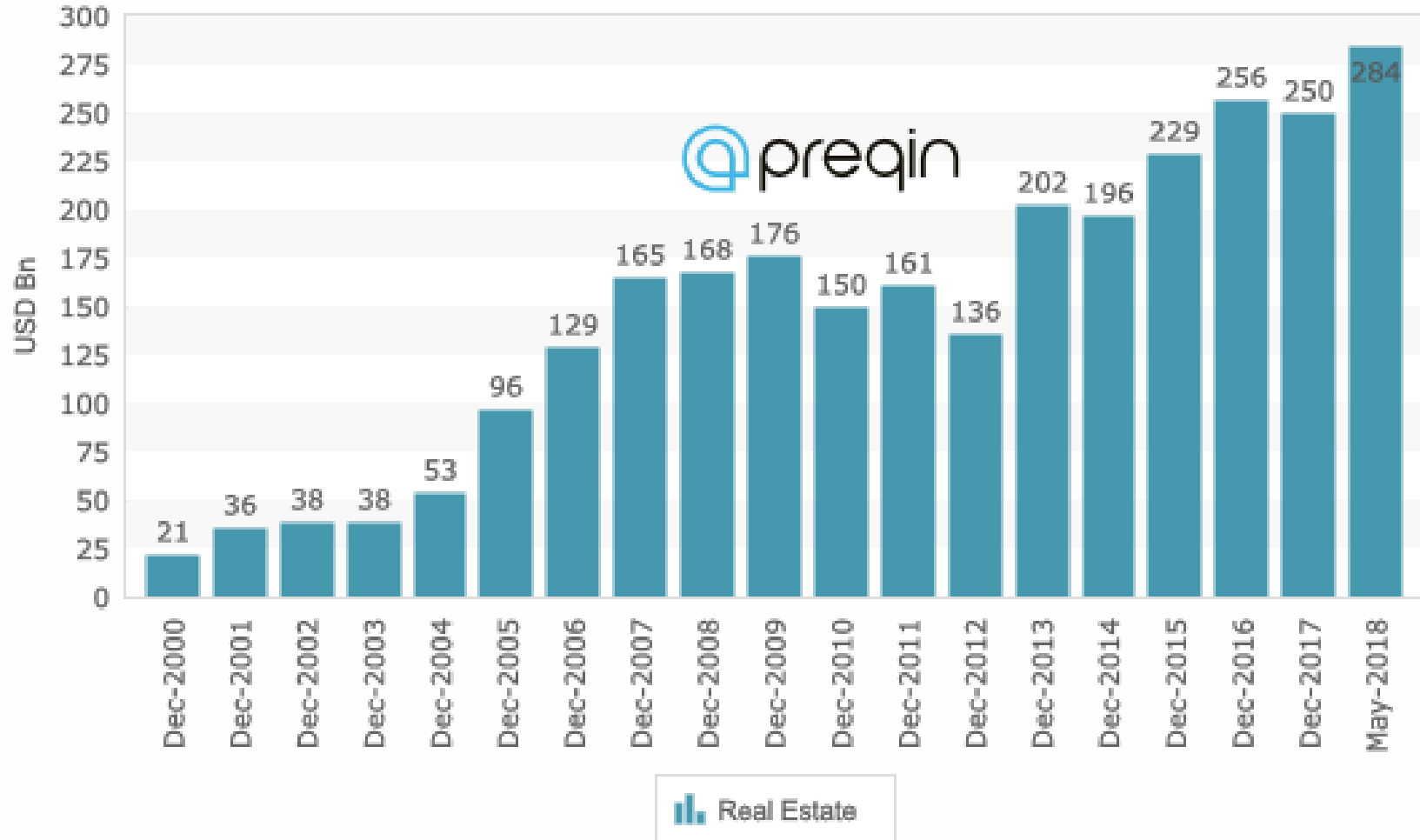
2) Source: Reuters, May 2018

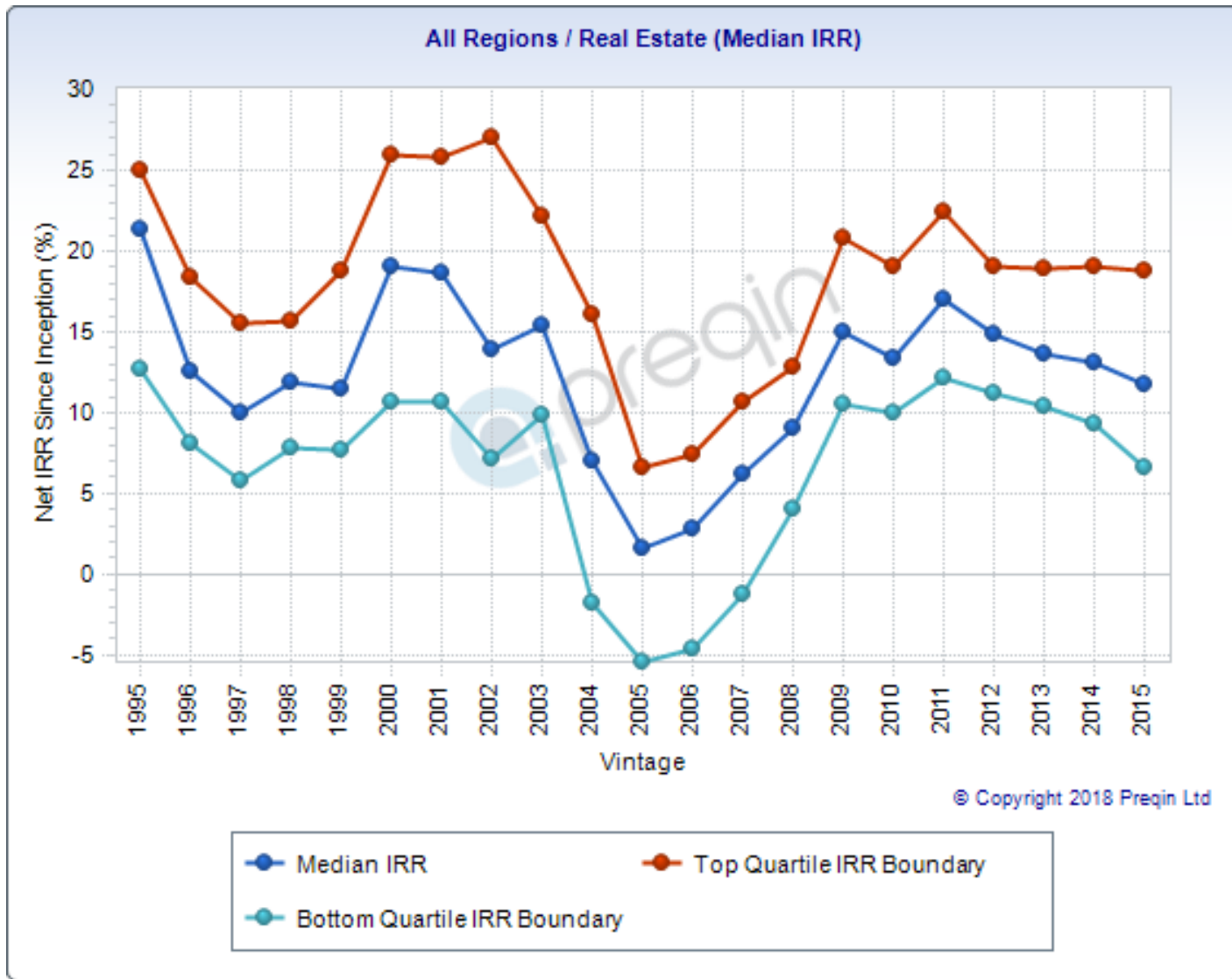


3) Real Estate

Dry Powder

Closed-End Private Real Estate Funds





Comparing Private to Public Real Estate Returns

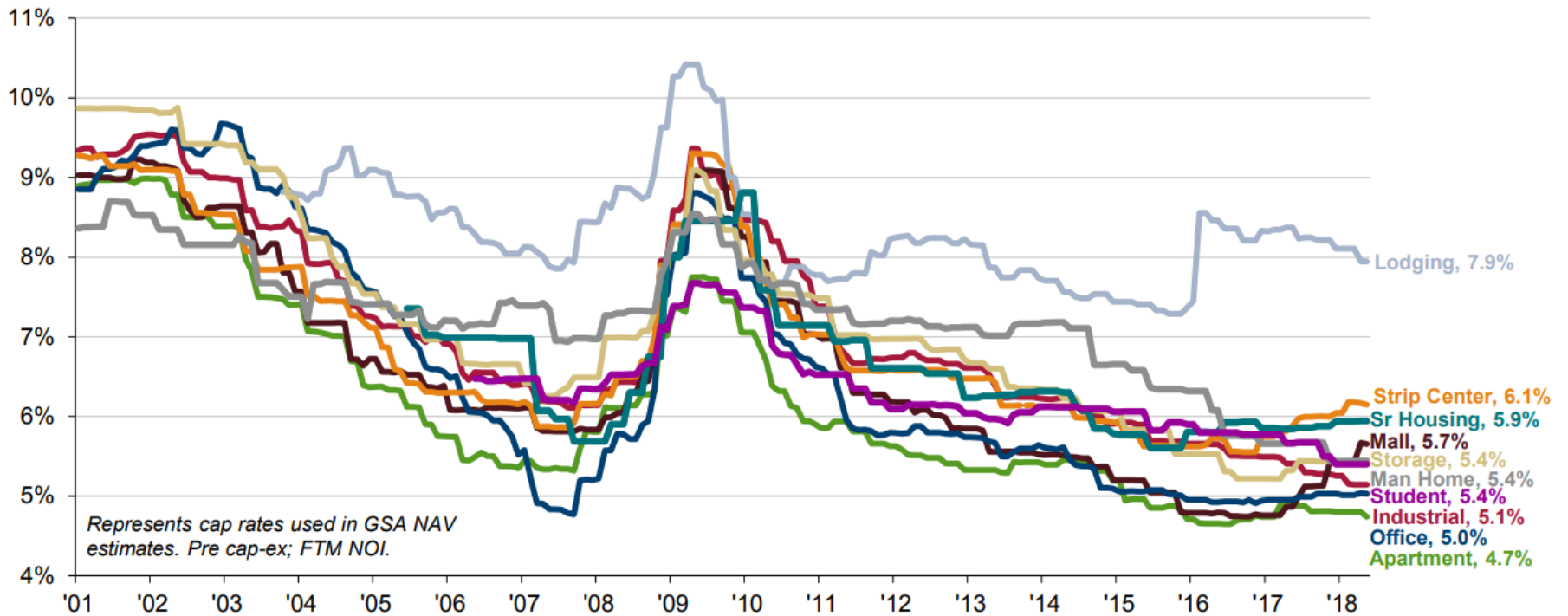
Index	1-Quarter	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year	25-Year
Real Estate Index	3.72	13.91	10.21	11.93	4.23	7.22	7.38	7.57
FTSE® NAREIT All Equity Index	2.48	8.67	6.67	9.83	7.77	11.13	9.12	10.89
FTSE® EPRA/NAREIT Developed Real Estate Index	3.83	11.42	5.38	7.20	4.09	10.43	8.36	9.95
FTSE® EPRA/NAREIT Developed REITS	3.29	7.70	5.08	8.00	5.25	—	—	—
FTSE® EPRA/NAREIT North America Index	1.82	4.57	4.82	8.37	6.79	10.80	8.76	11.58
NCREIF Property Index	1.80	6.96	9.38	10.19	6.08	9.02	9.44	9.12

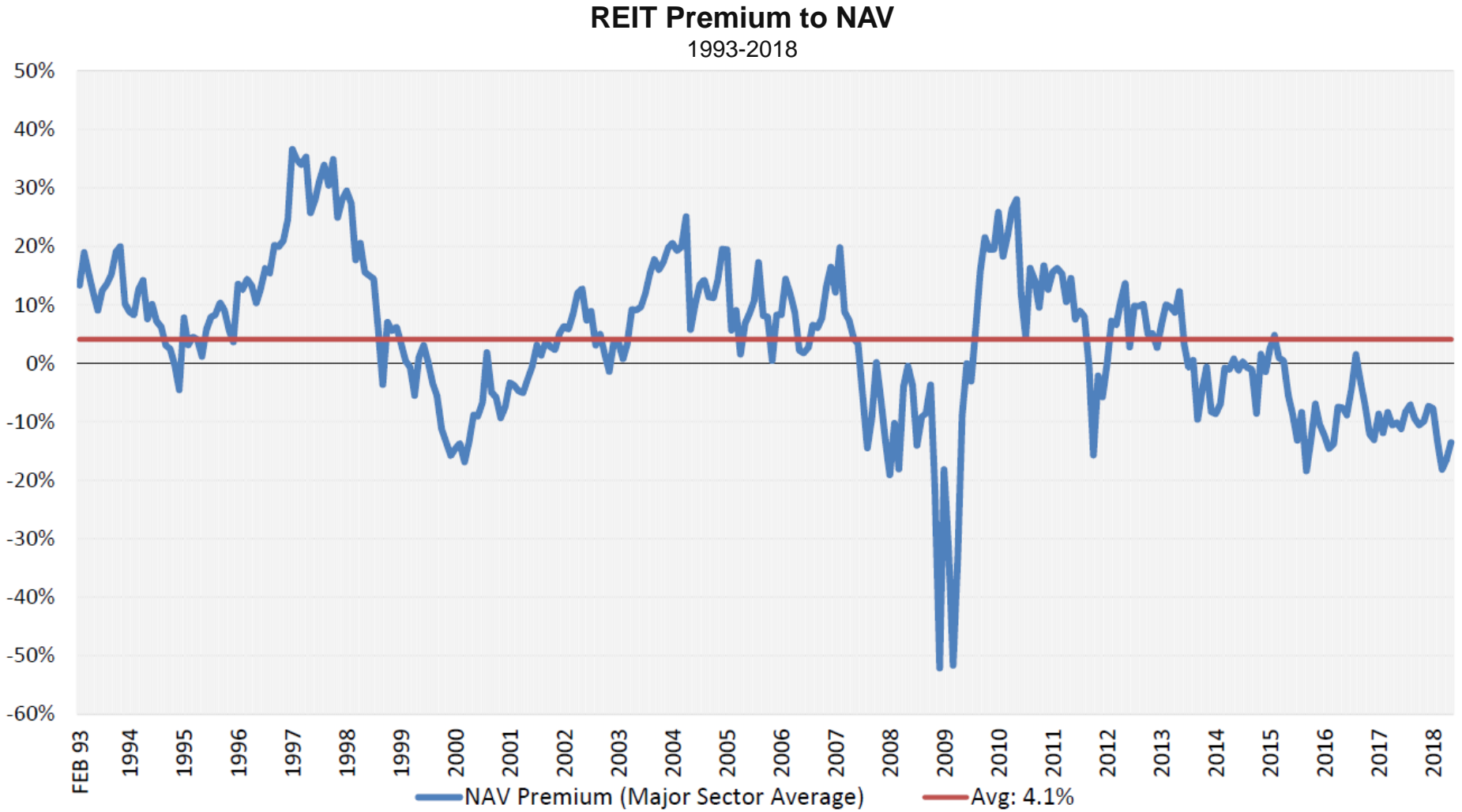
Source: Cambridge Associates, June 2018. Data as of December 31, 2017. The Real Estate Index is a horizon calculation based on data compiled from 1,001 real estate funds (including opportunistic and value-added real estate funds), including fully liquidated partnerships, formed between 1986 and 2017. Private indexes are pooled horizon internal rate of return (IRR) calculations, net of fees, expenses, and carried interest. The timing and magnitude of fund cash flows are integral to the IRR performance calculation. Public indexes are average annual compounded return (AACR) calculations which are time weighted measures over the specified time horizon, and are shown for reference and directional purposes only. Due to the fundamental differences between the two calculations, direct comparison of IRRs to AACRs is not recommended.

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Nominal Cap Rates

Nominal Cap Rates 2001-2018





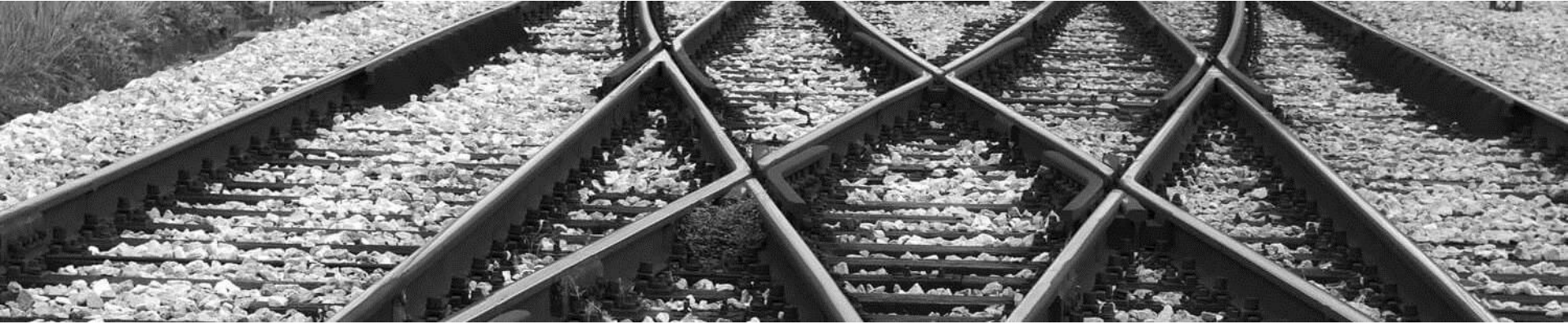
Brookfield's Perspective: The Opportunity in Real Estate

Finding value

- Undermanaged assets or portfolios, such as those with deferred capital improvements or leasing challenges
- Generational rotation of leadership at some firms may lead to acquisition opportunities
- Current REIT discounts to NAV

Multi-faceted transactions

- Recapitalizing inefficiently capitalized companies with high-quality underlying assets



4) Infrastructure

Brookfield's Perspective: Growing Market Opportunity

Significant Global Funding Gap¹

- ✓ • \$46 trillion in infrastructure investments required globally through 2030
- Significant share of funding gap in North America (\$22 trillion) and Western Europe (\$12 trillion)

Mature Private Assets Changing Hands

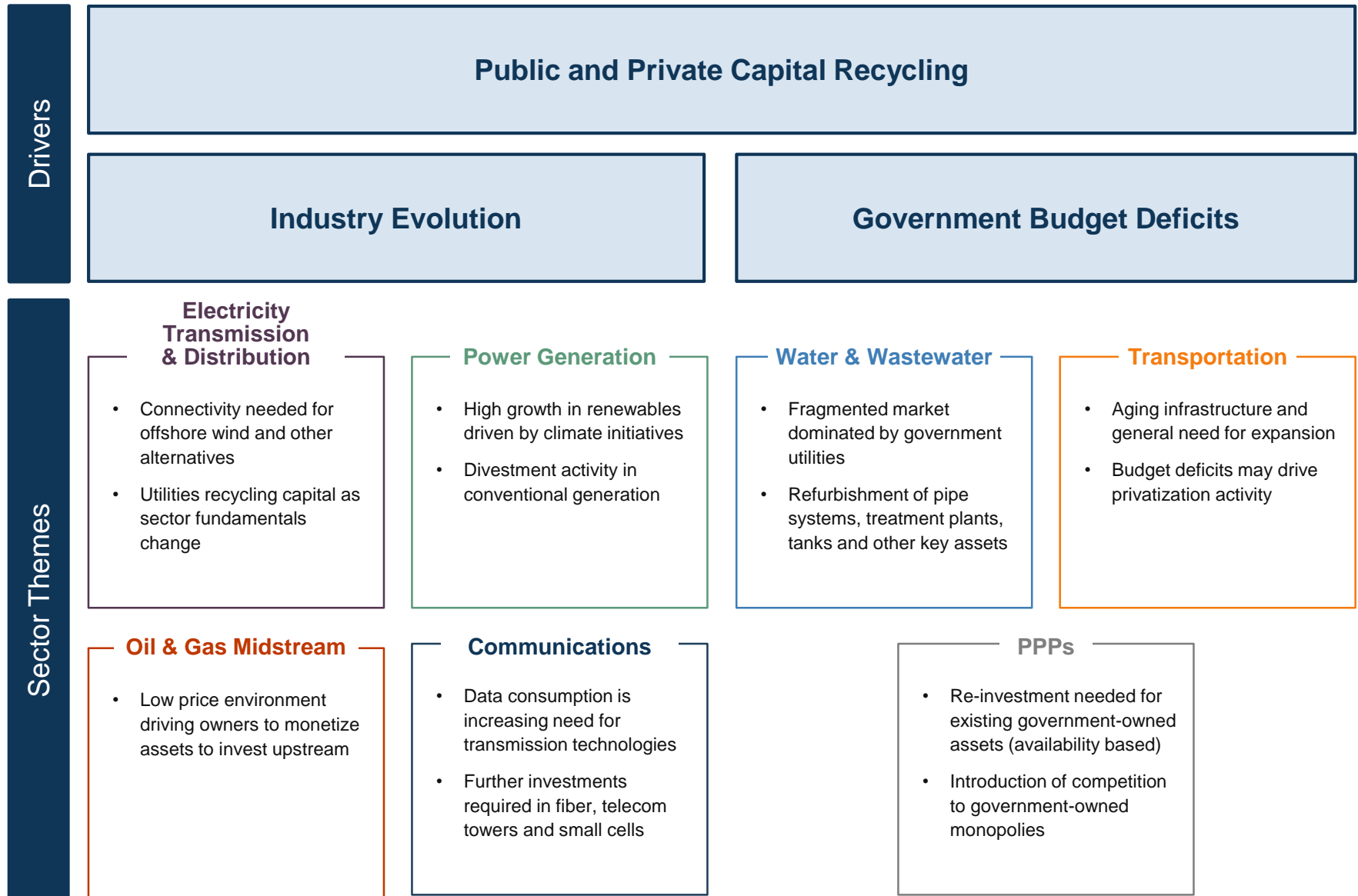
- ✓ • Strategic sales of non-core businesses
- End-of-term asset dispositions by infrastructure funds

Recent Government Initiatives

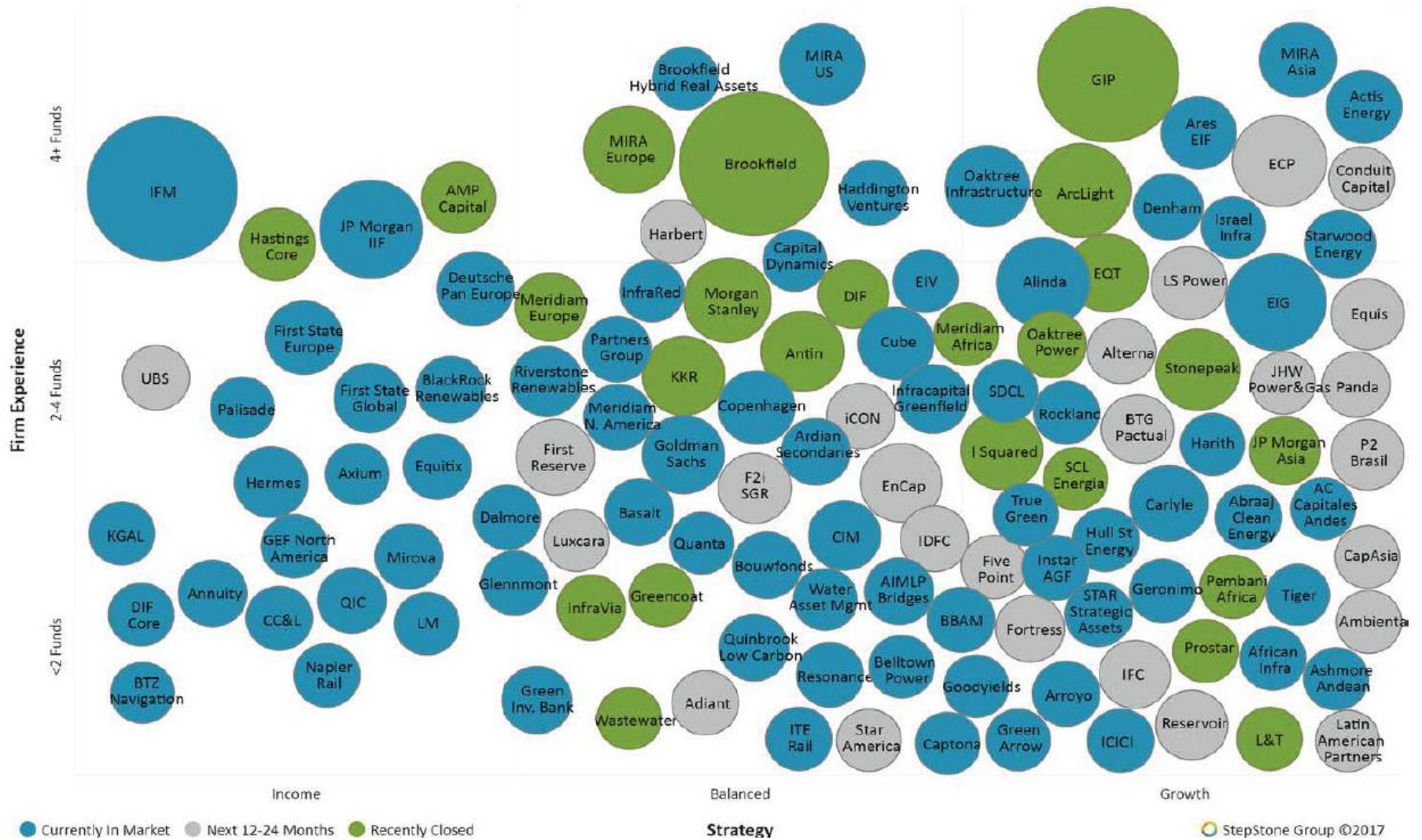
- ✓ • European Commission Investment Plan (2014)
- Australian Infrastructure Plan (2016)
- U.S. Infrastructure Plan (2017)
- Canada Infrastructure Bank (2017)

1) Source: *Bridging Global Infrastructure Gaps* (McKinsey Global Institute – June 2016)

Brookfield's Perspective: Key Drivers of Deal Flow



Infrastructure Market Map



Infrastructure Investment Examples

We seek to acquire core assets that provide essential services to the global economy while generating secure and stable cash flows



Toll Roads



District Energy



Electricity Transmission



Renewable Power



Ports

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