Review of ATP's Investment Strategy

JUNE 23-24, 2026

This is what ATP is all about

Key Figure, annually	26-year-old	46-year-old	66-year-old
Expected benefit at retirement (in real terms)	22,300 DKK	21,200 DKK	25,400 DKK
Current guarantees	1,000 DKK	12,800 DKK	25,000 DKK

Expected pension benefits for different members of ATP

Agenda

- Who we are and mandate
- Overall conclusions and recommendations
- Delivery
- ATP and the Danish pension system
- ATP architecture
- Evaluation of ATP’s investment strategy
- Recommendations
- Overall conclusions

Who we are

ANDREW ANG

CO-FOUNDER OF TAU BALANCE AND ADJUNCT PROFESSOR AT COLUMBIA UNIVERSITY

Andrew Ang is a financial economist specialising in quantitative investing. He is currently an Adjunct Professor at the Columbia School of International and Public Affairs (SIPA). Previously, he was a full-time professor at Columbia Business School and Managing Director and Head of Factors, Sustainable and Solutions at BlackRock. Andrew Ang has published more than 100 publications on topics such as agentic AI investing, sustainable investing, equities, bonds, optimal asset allocation, and alternative investments.

JESPER BERG

FORMER CEO, SENIOR ADVISOR AT RUD PEDERSEN

Jesper Berg has been the chair of the committee evaluating ATP's investment strategy. He was head of the Danish Financial Supervisory Authority from 2015-2023. Before that, he was a bank director at Nykredit Bank, head of first the Market Operations Department and then financial stability at Danmarks Nationalbank, Head of division in the ECB's Monetary Policy Directorate, head of payment services at the Nationalbank, and economist at the IMF. He is currently associated with Rud Pedersen as Senior Advisor, senior fellow at the think tank Bruegel, senior fellow at the CIP Foundation, external lecturer at both the University of Copenhagen and CBS, consultant for the IMF, and chairman of the board of Maj Bank, and member of a number of other boards. Jesper is educated as a Cand Polit and has an MBA from IMD.

MAGNUS DAHLQUIST

PROFESSOR OF FINANCE AT STOCKHOLM SCHOOL OF ECONOMICS

Magnus Dahlquist is the Handelsbanken Professor of Finance at the Stockholm School of Economics. His research and teaching focus on asset management, asset pricing, and international finance. His current research examines institutions' capital market assumptions, the design of pension plans, and trading strategies in bond and foreign exchange markets. Dahlquist has advised several financial institutions and public authorities, including the Swedish Pensions Agency and the Swedish central bank. Currently, he is a member of a new expert council advising the Norwegian Ministry of Finance on the Norwegian sovereign wealth fund.

Mandate

The Board of ATP has given us the following mandate

- Evaluate the risk and investment decisions taken to implement ATP's pension product
- Evaluate the historical performance of ATP's investment strategy
- Make suggestions to the future communication of ATP's value creation

The mandate asks to take the legal and board-established conditions regarding the design of the product as given

As the product design has implications for the investment strategy, we comment on the design but refrain from making recommendations in this area

Overall conclusions

ATP's investment beliefs and overall investment strategy are largely in line with best practice and make use of ATP's comparative advantages

- The major elements of ATP's investment strategy are grounded in modern portfolio theory and consistent with its investment beliefs
- The use of leverage and derivatives to scale a risk parity strategy exploit the comparative advantages of ATP's product
- ATP has built a strong investment organization, and the execution of the investments has been excellent with no major operational incidents identified during the review

Recommendations

1. Maintain investment beliefs generally, but reconsider beliefs on illiquid assets
2. Investment strategy should maintain matching assets to liabilities
3. Maintain risk parity strategy, but reconsider level of risk in the Investment Portfolio
4. Prioritize risk taking in the Market Return Portfolio over the Supplementary Hedge Portfolio
5. Further develop the illiquid investment framework
6. Develop a quantitative framework for Danish equities
7. Adopt a more return-focused investment framework
8. Consistent communication centered on pensions

Delivery

Today

- Presentation
- Conclusions and recommendations

August

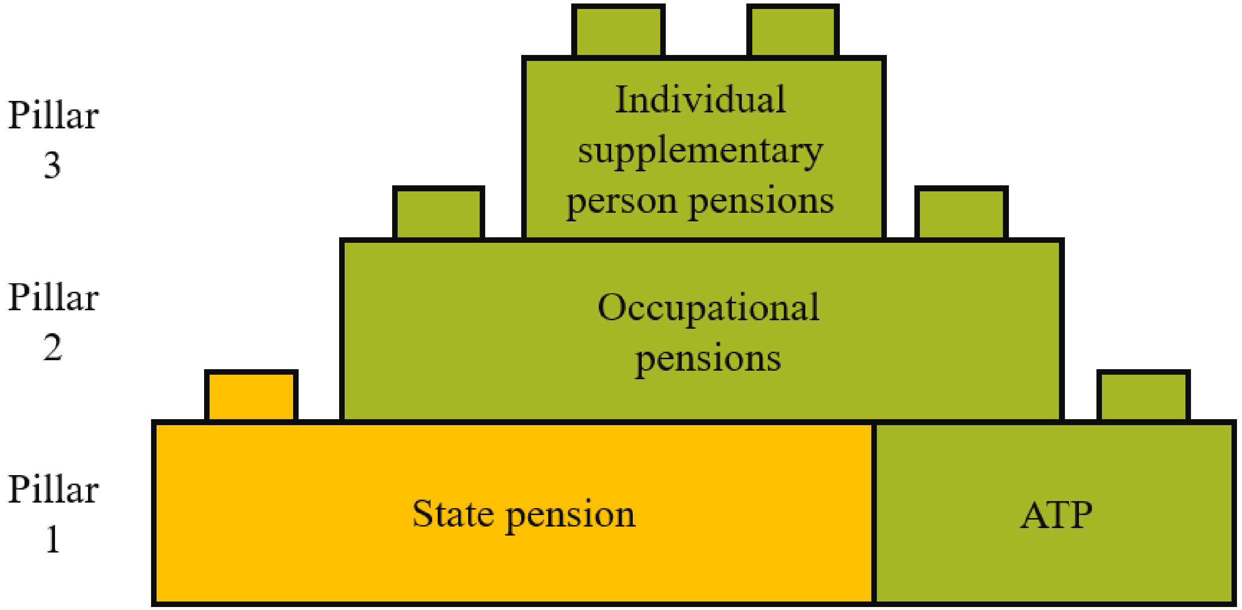
- Full report

September

- Conference on report and related topics

ATP and the Danish pension system

ATP is part of Pillar 1



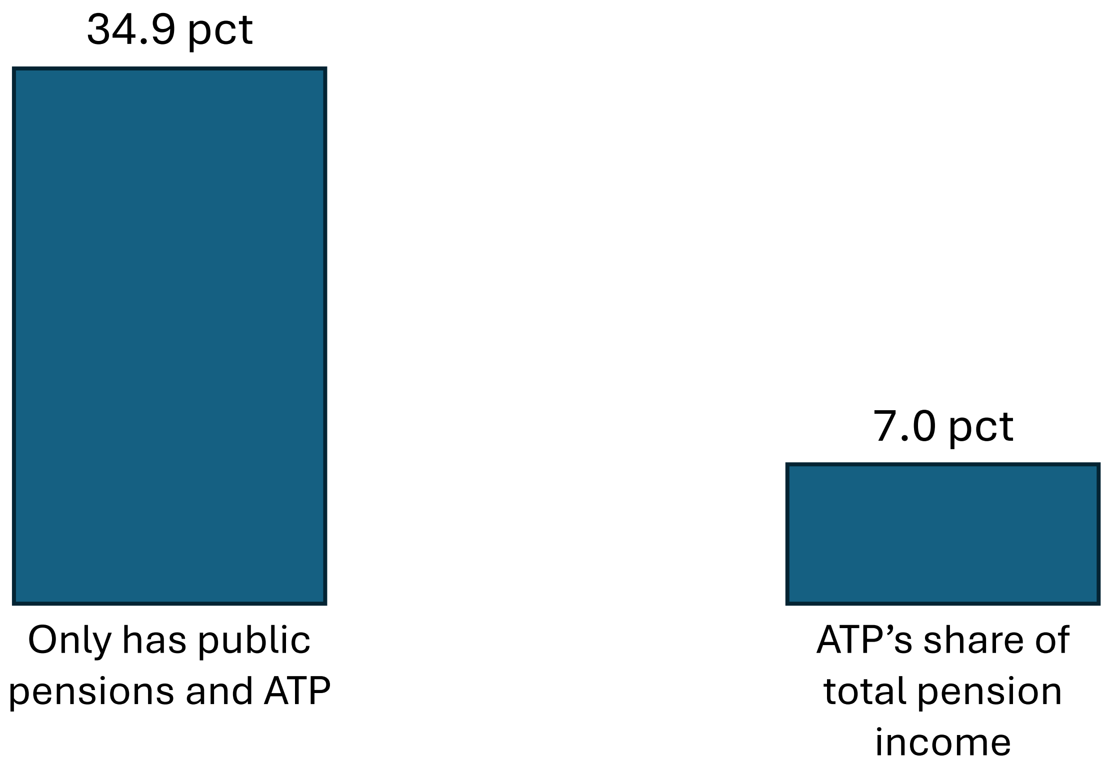
The three pillars of the Danish pension system

ATP has a complementary role: Funded, guaranteed, lifelong, and universal coverage

	State Pension	ATP	Occupational pensions
Funded	✘	✓	✓
Guaranteed	✓	✓	(✘)*
Lifelong	✓	✓	(✓)*
Universal coverage	✓	✓	✘

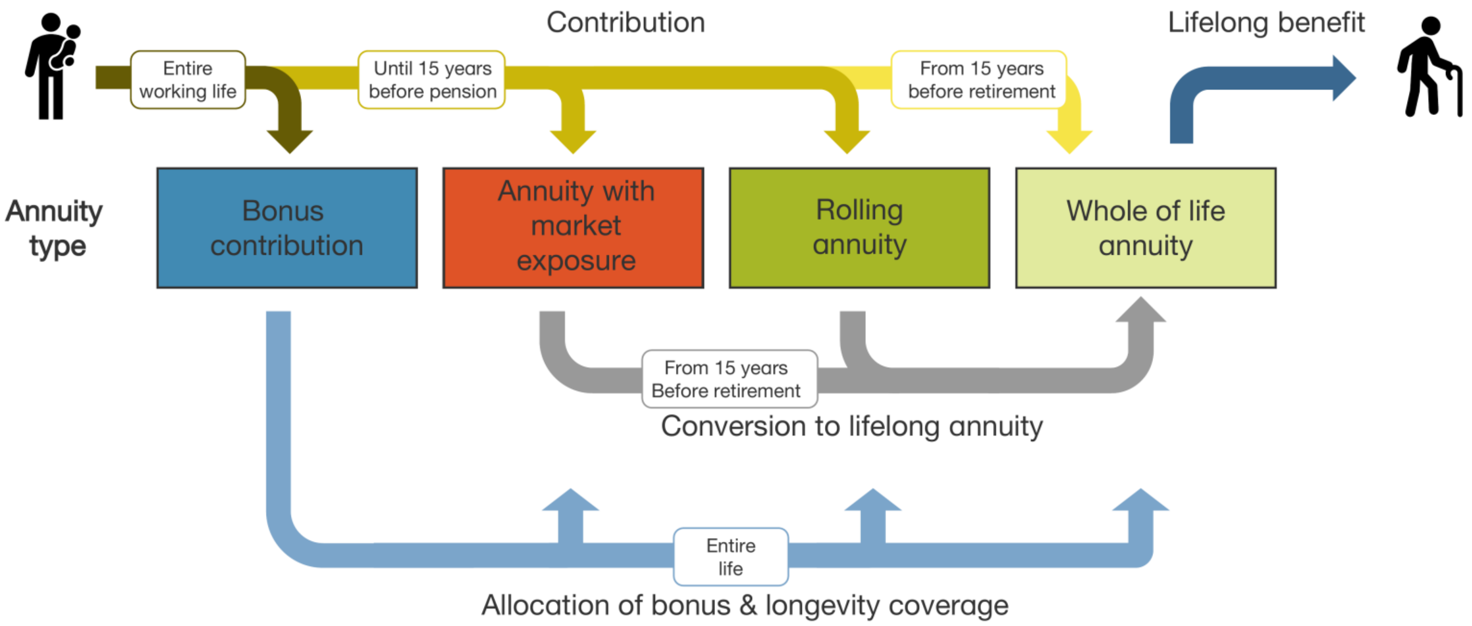
*Depends on actual products, but longevity risk are partly funded by the individual

ATP plays a limited role in complementing other sources of pension income



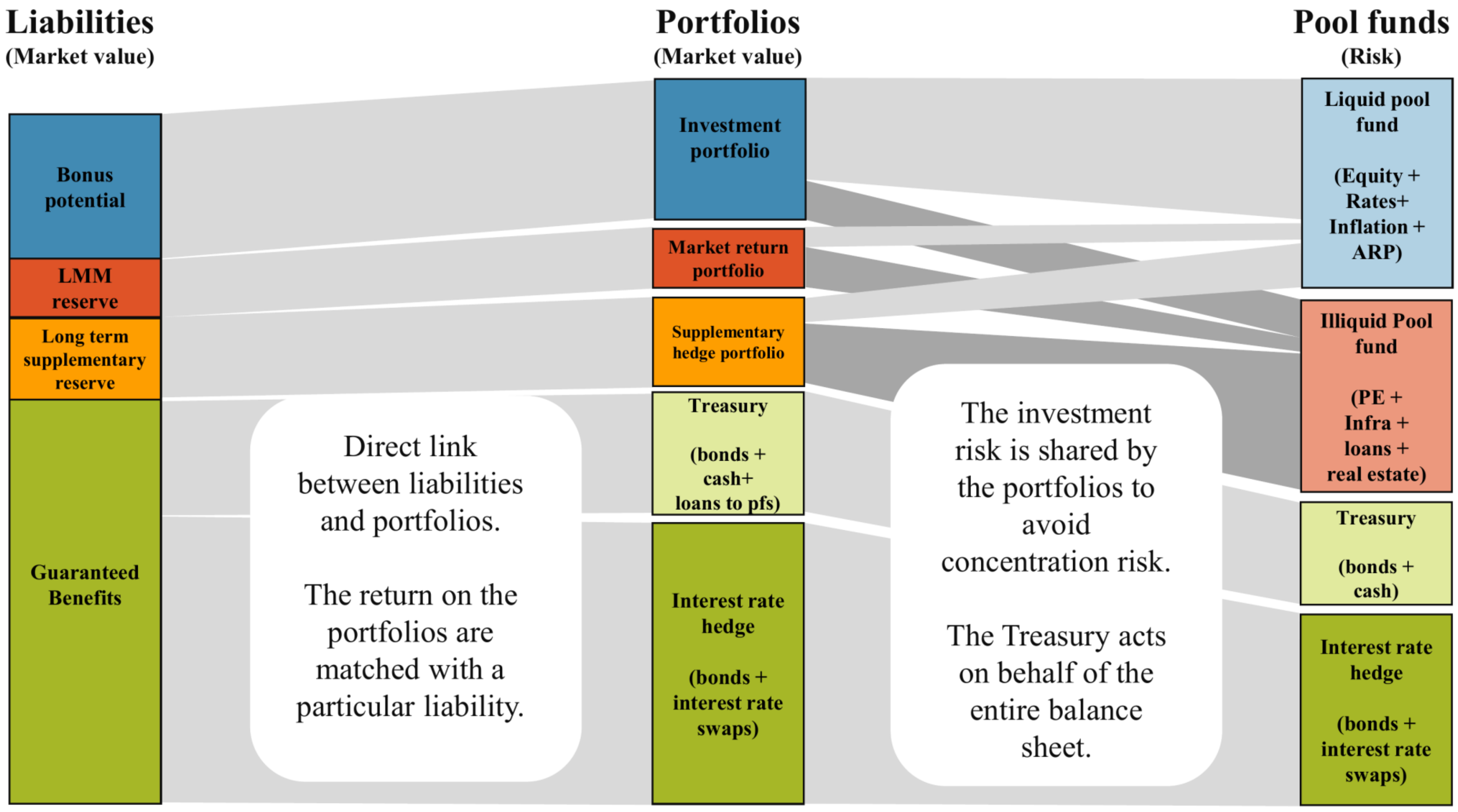
ATP architecture

Behind ATP's simple product is a sophisticated and complex machine



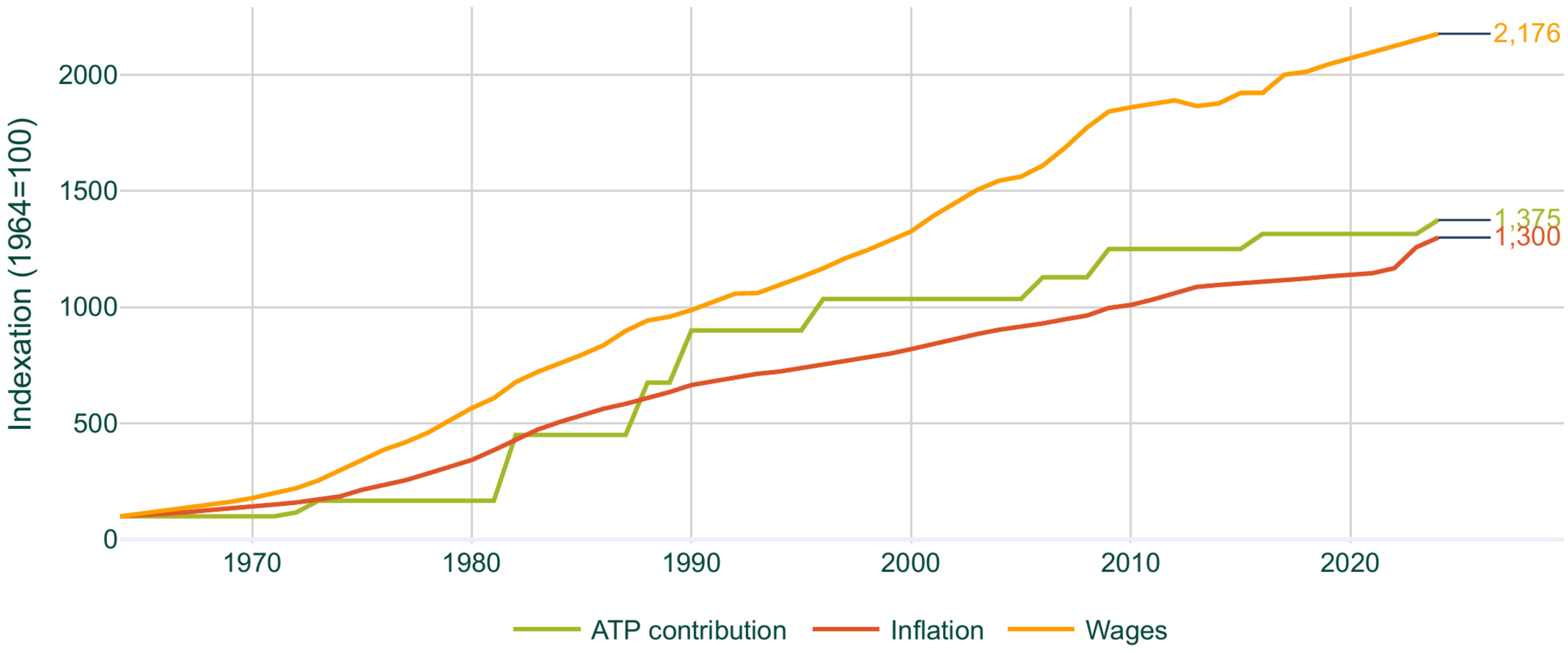
From contributions to life-long benefits

Liabilities drive portfolios that drive funds



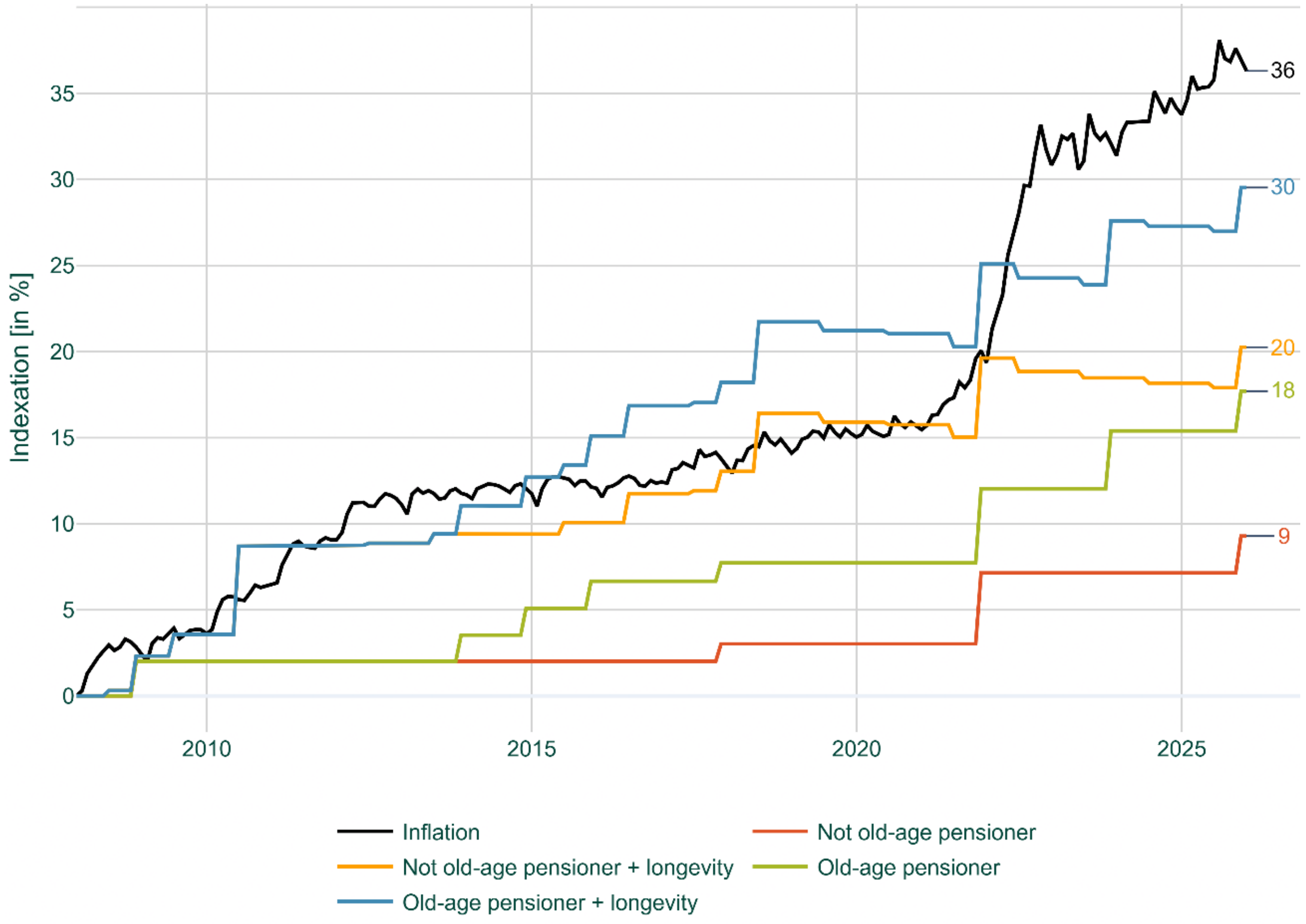
Link between liabilities, portfolios, and pool funds

Contributions have not grown in line with wages



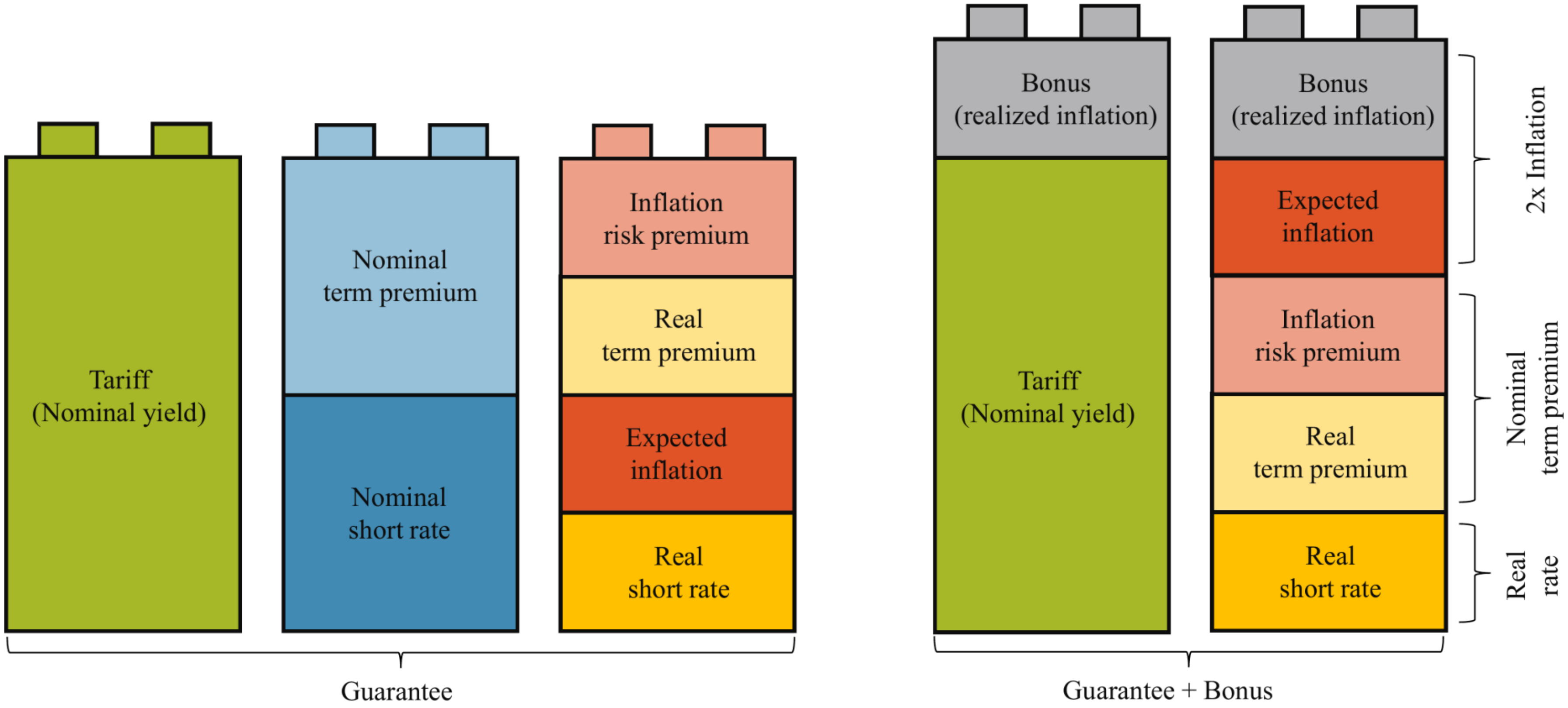
Historical ATP contribution compared to price and wage inflation

Bonuses have not kept up with inflation



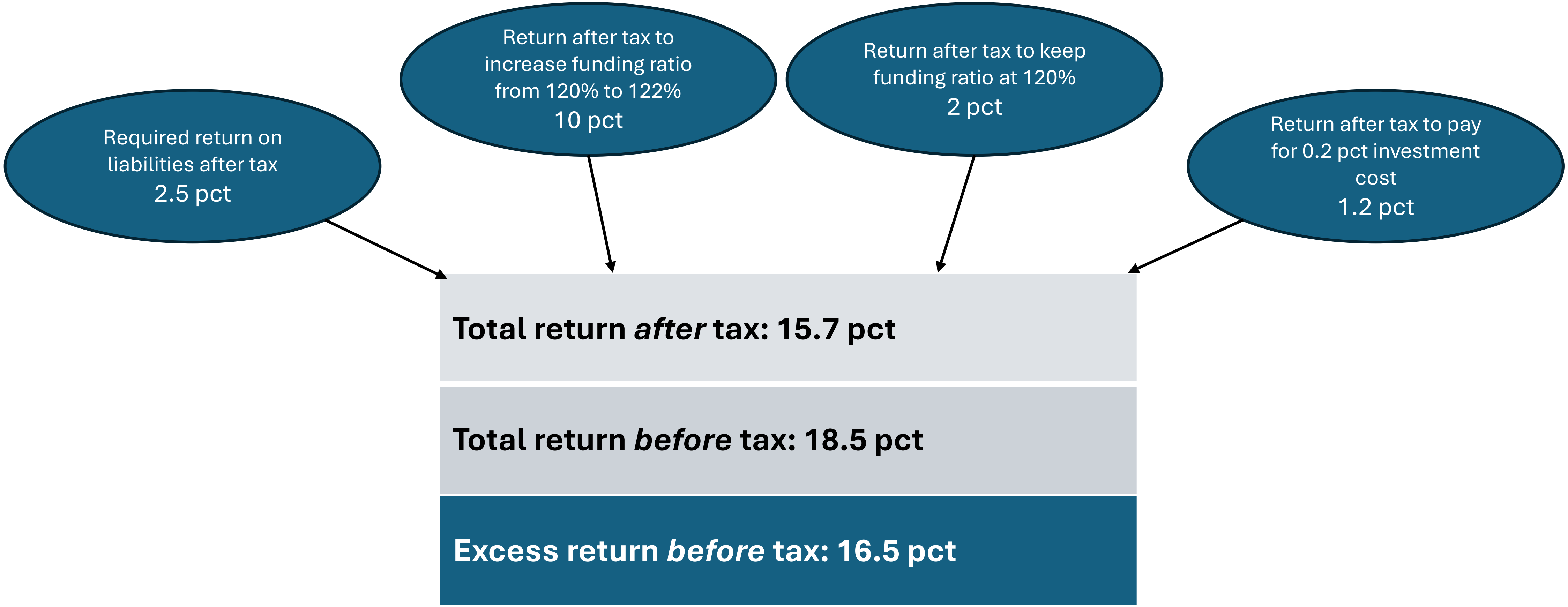
Historical bonus distributions and inflation

The inflation indexation ambition counts inflation twice

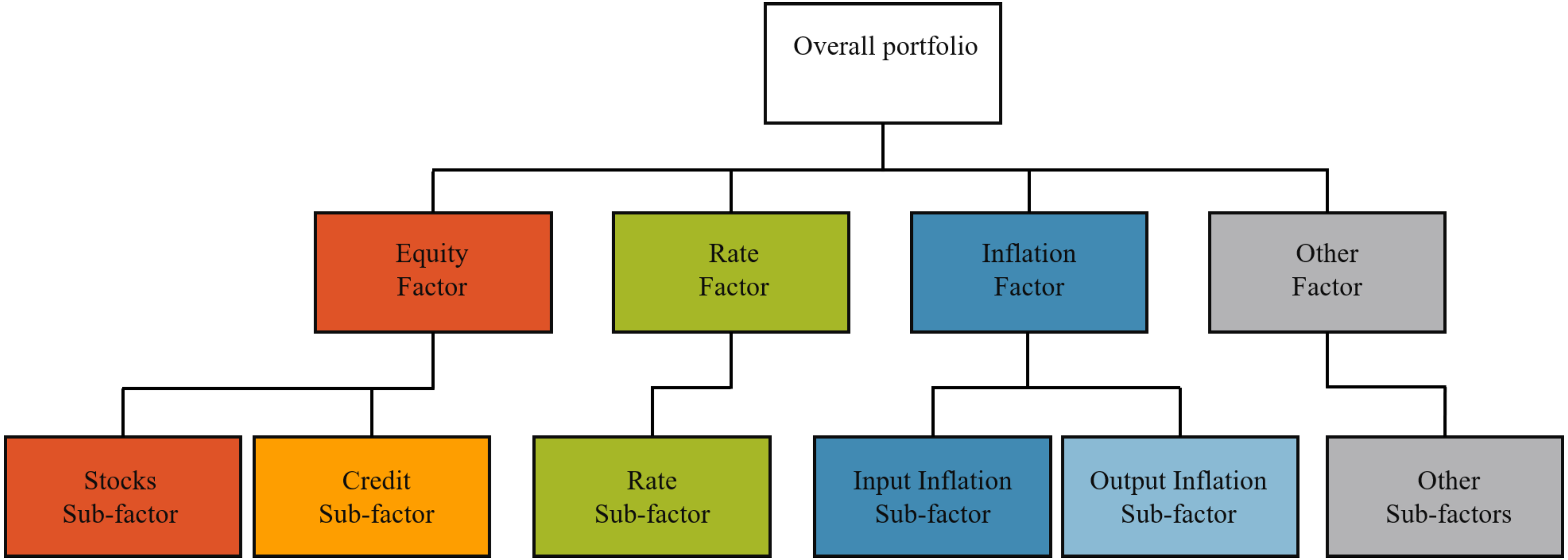


The tariff already includes an inflation component

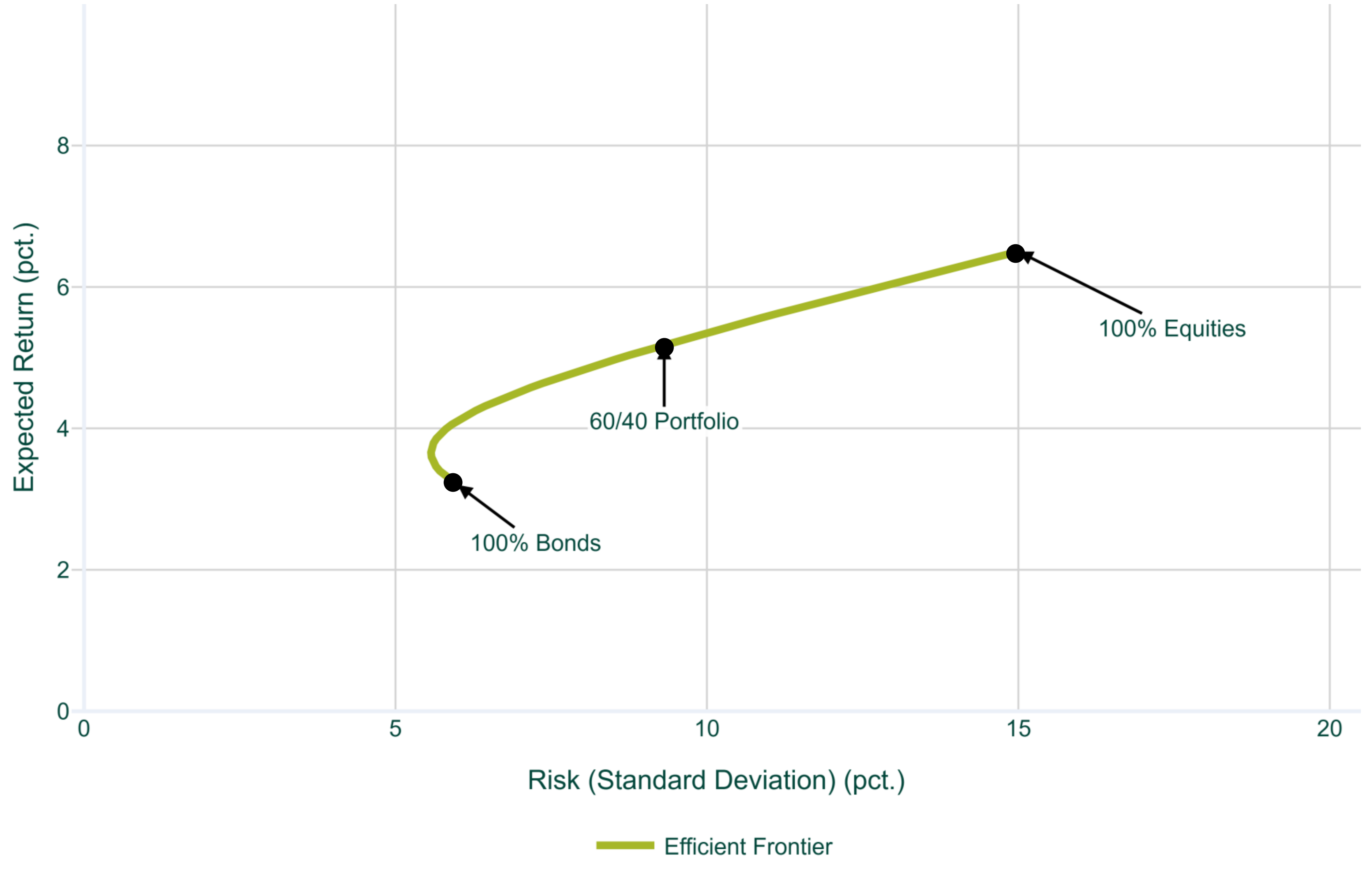
Return needed to achieve indexation of 2 pct is very high



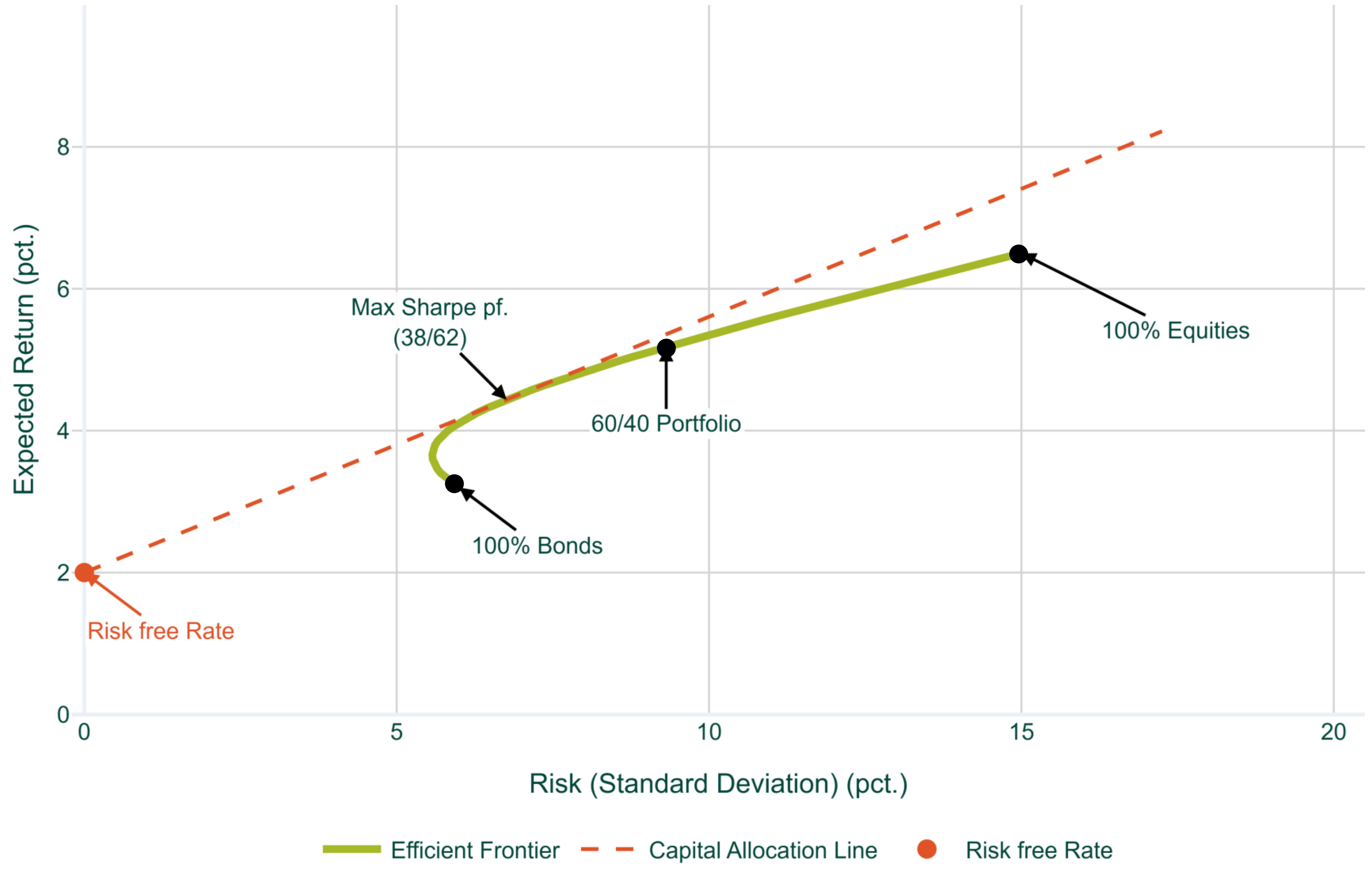
ATP diversifies investment portfolio through factors



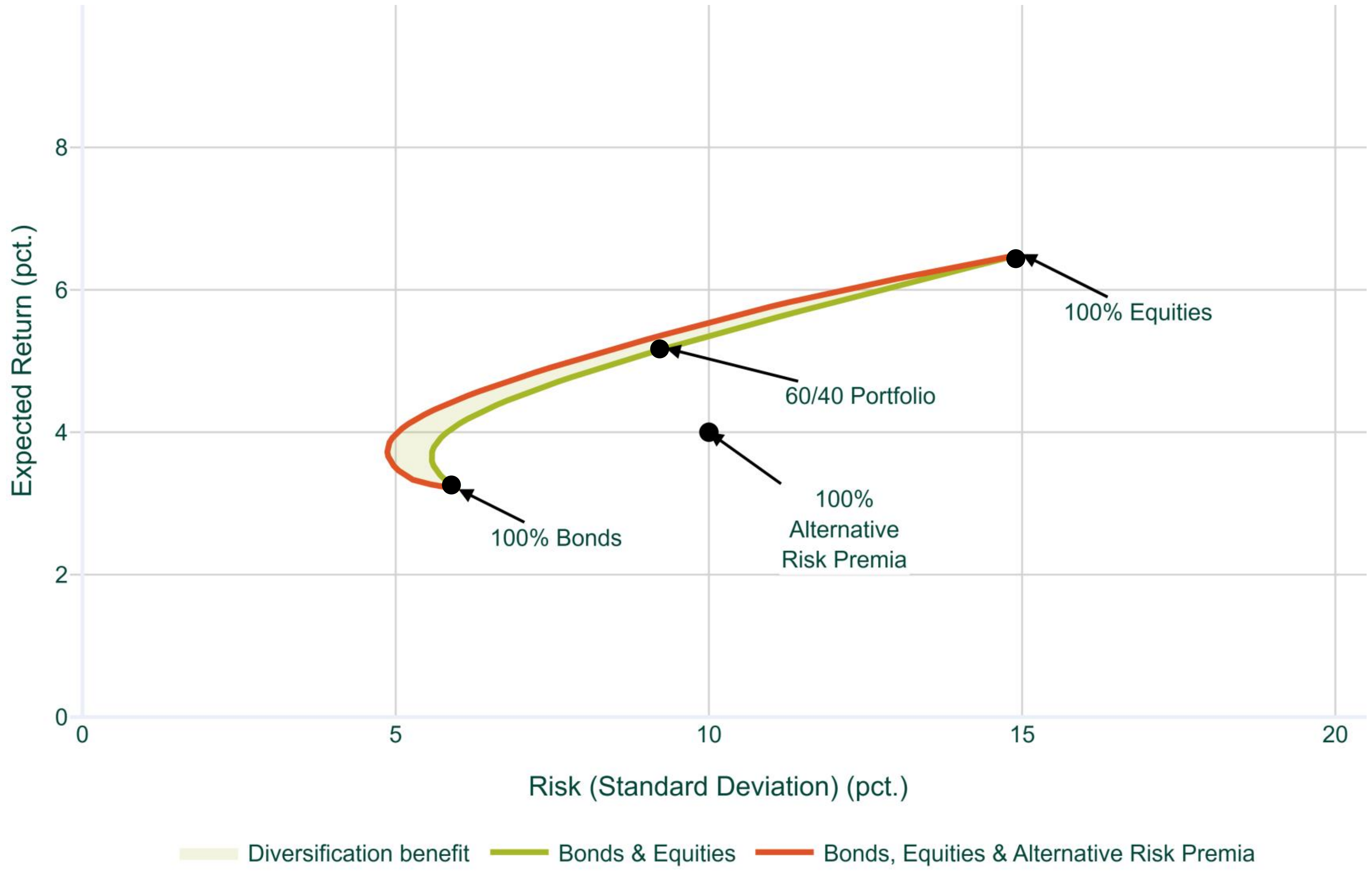
Investment opportunities: The efficient frontier



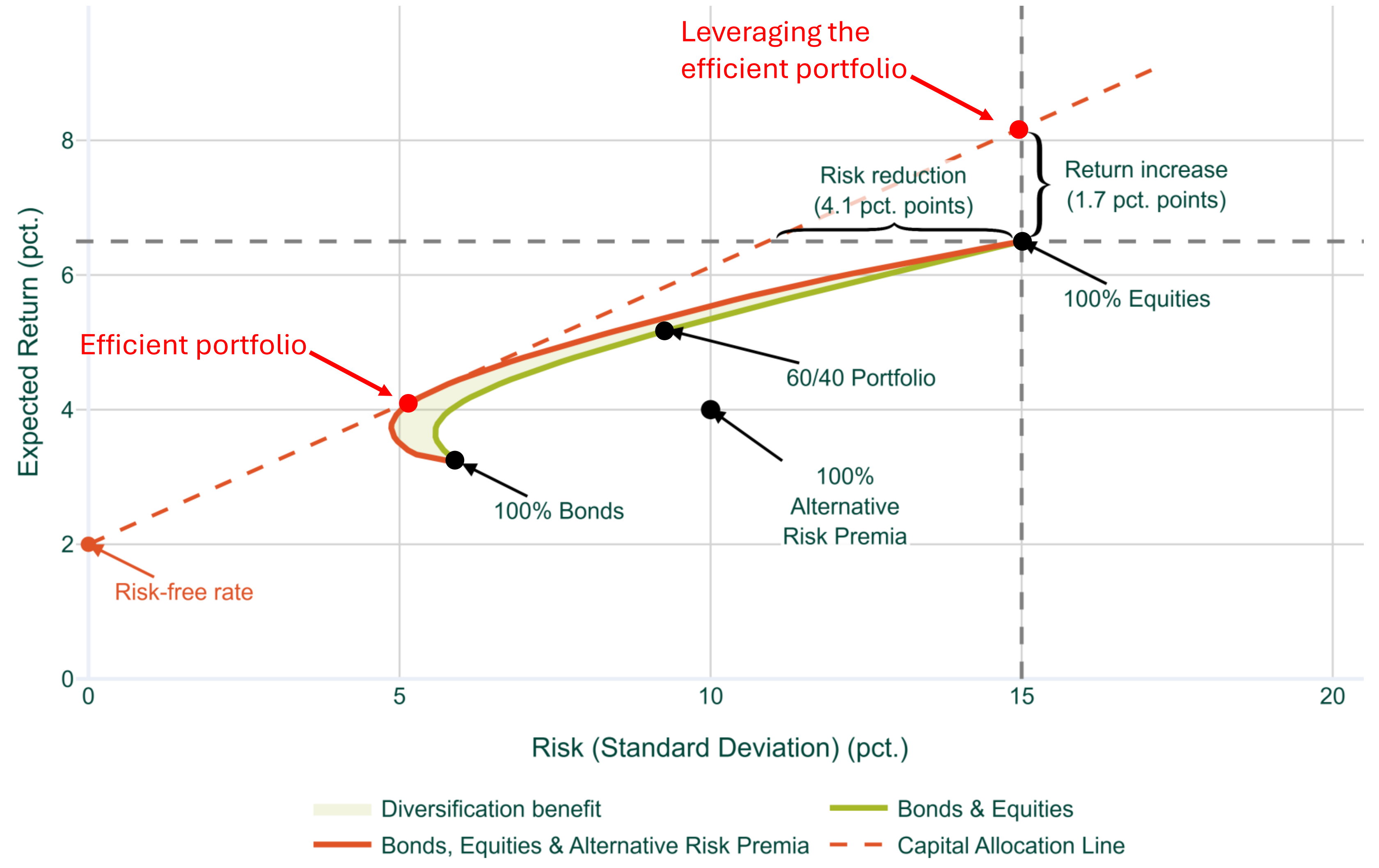
Finding the efficient portfolio (highest Sharpe ratio portfolio)



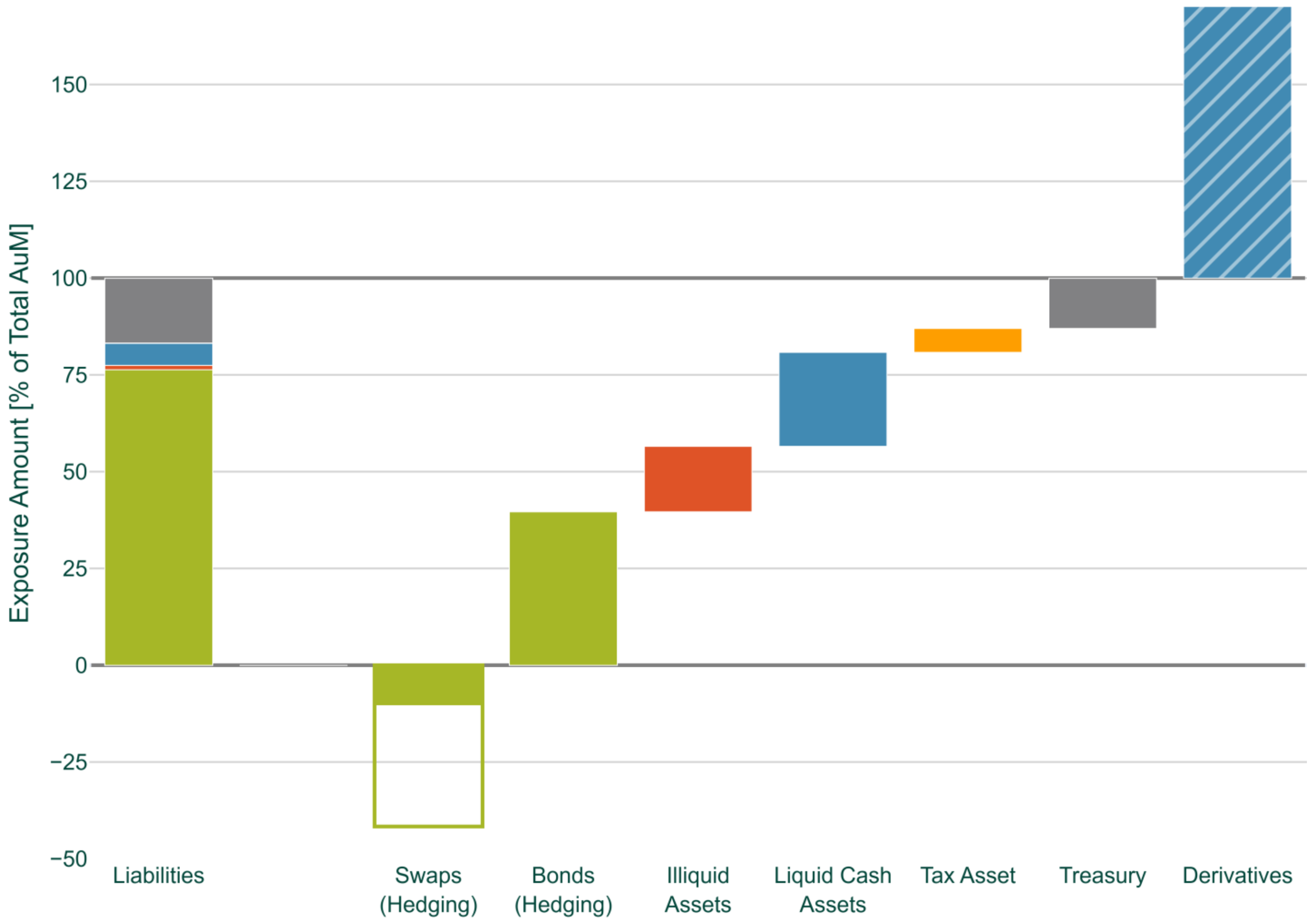
Expanding the efficient frontier



Leveraging the efficient portfolio



ATP uses leverage



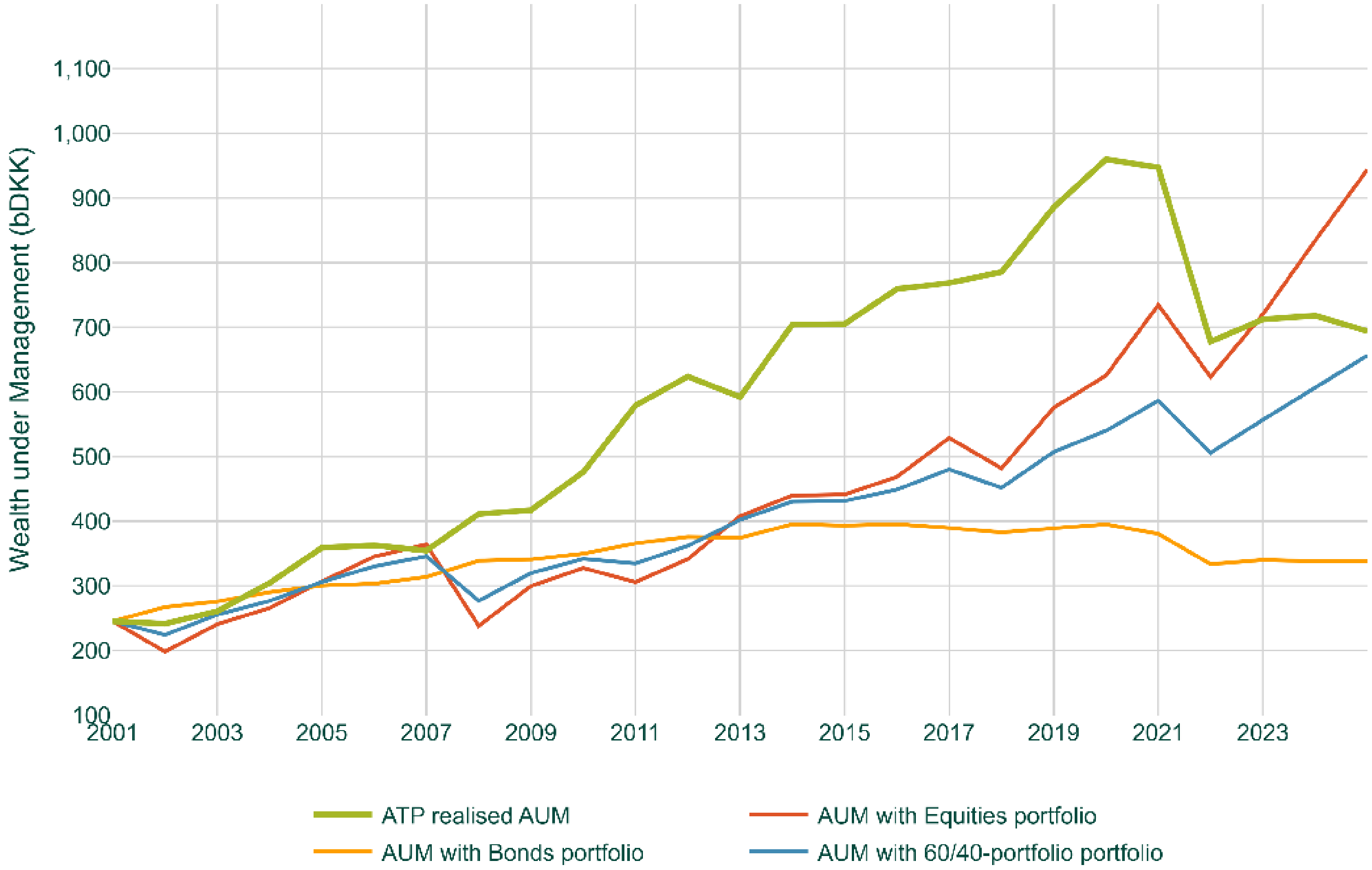
ATP's application of leverage on the total balance sheet as for end-2025

Evaluation of ATP's investment strategy

Starting point for evaluation of investment strategy

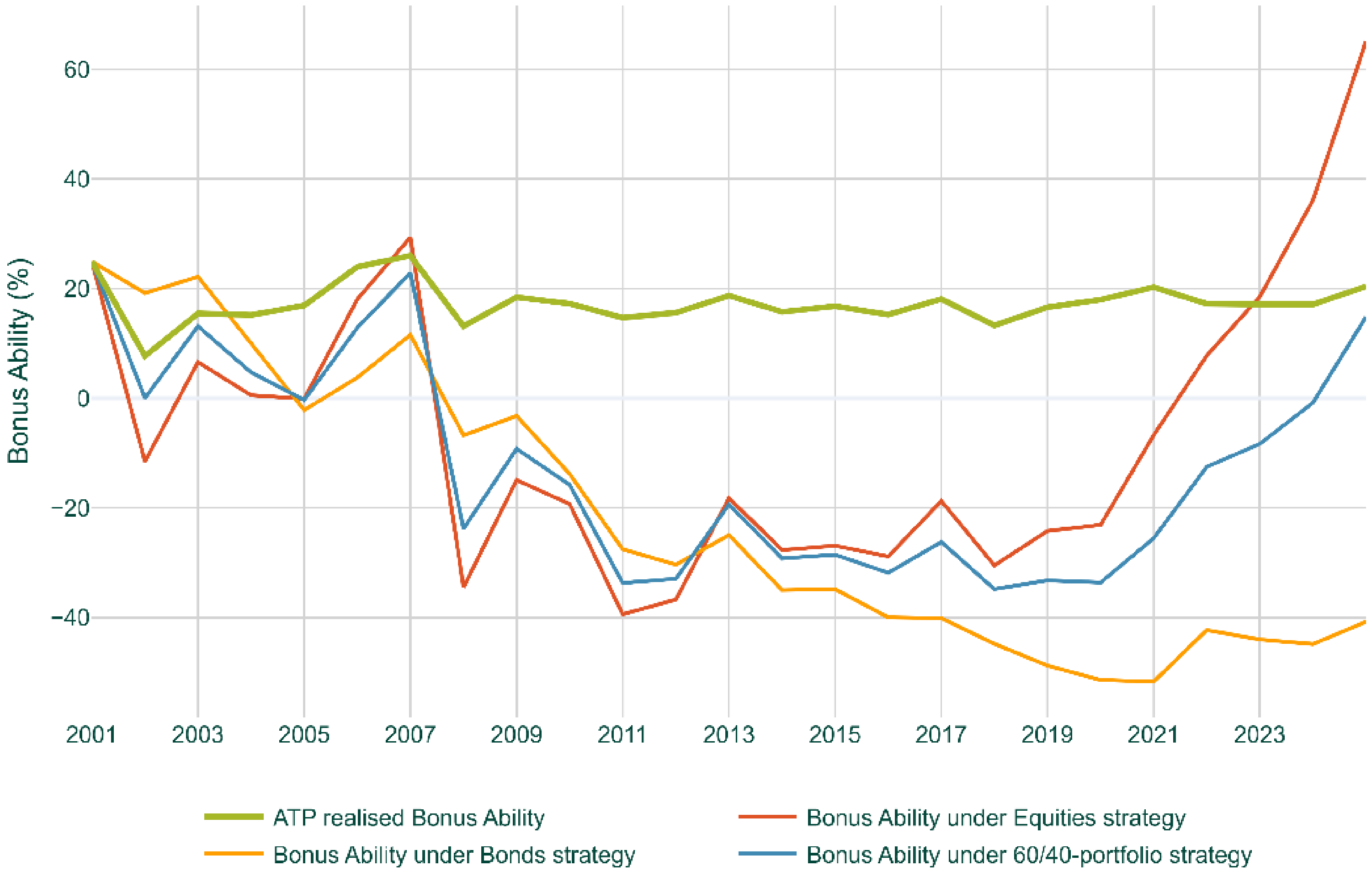
- ATP’s raison d’être
  - Funded, guaranteed, lifelong, and universal coverage
  - Complementary role in the Danish pension system
- ATP’s investment strategy should be measured against:
  - How it delivers on pensions
  - Constraints in the legislation, i.e. the guarantee
- ATP’s performance cannot be judged by a single statistic
  - Performance assessment should distinguish between
    - The Hedging Portfolio, which matches the pension guarantees
    - The Investment Portfolio, which seeks to generate surplus returns to support inflation compensation and other benefit improvements

Wealth accumulation since 2001



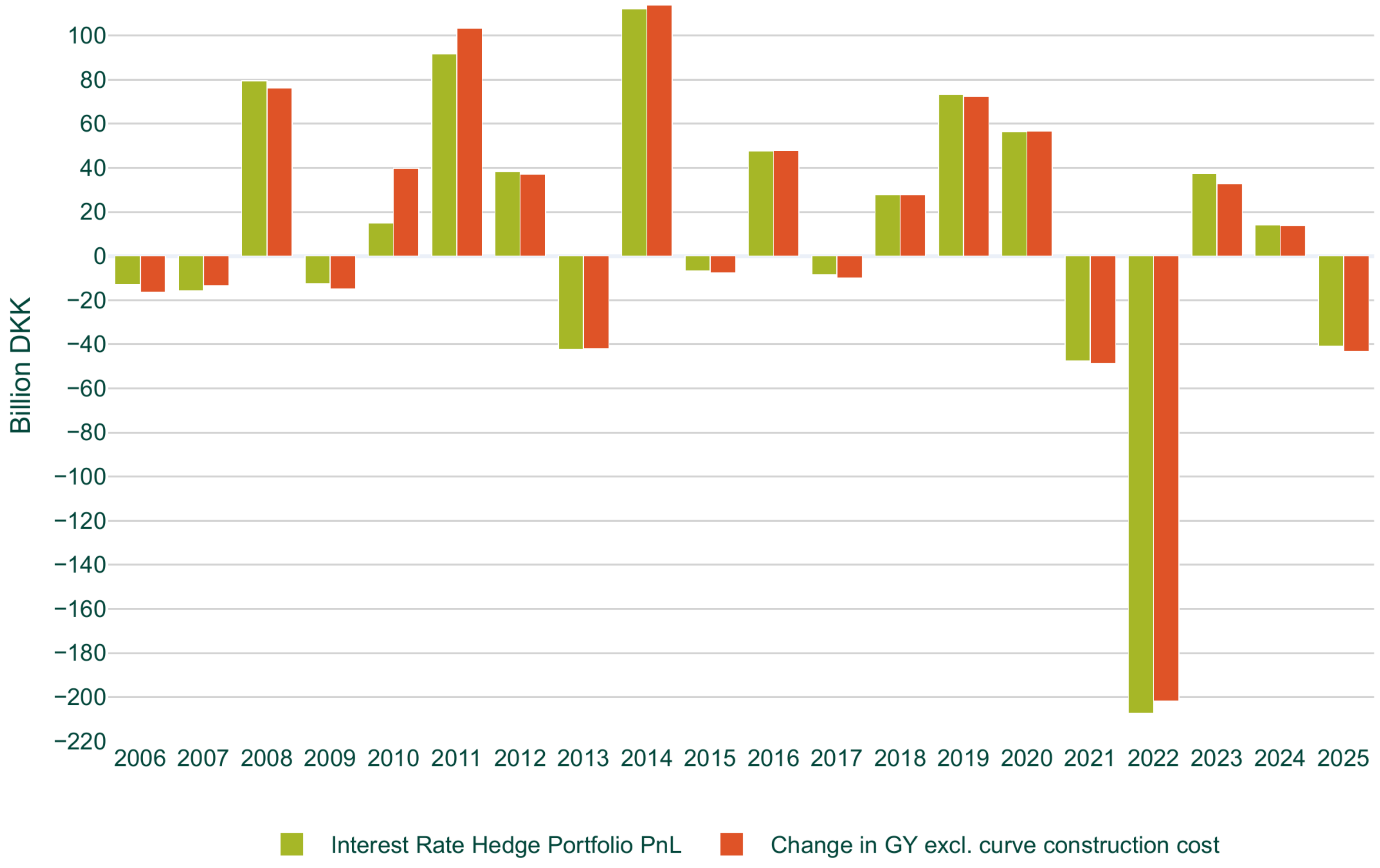
Wealth accumulation in ATP since 2001

Bonus ability (or funding ratio minus 1)



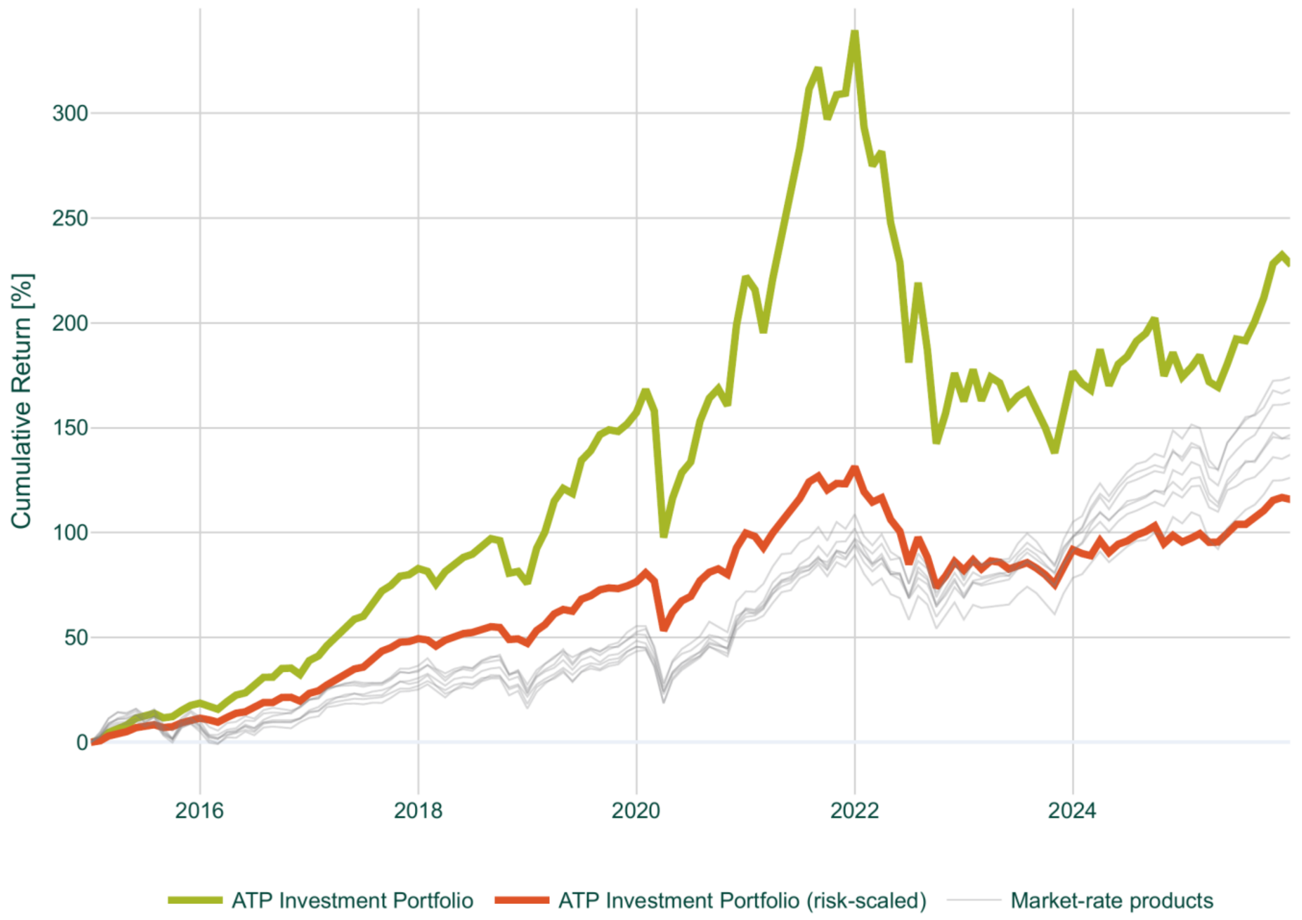
Bonus ability of ATP since 2001

Hedge Portfolio does its job in hedging guaranteed liabilities



Hedging vs. guarantees

Investment Portfolio did well until 2022

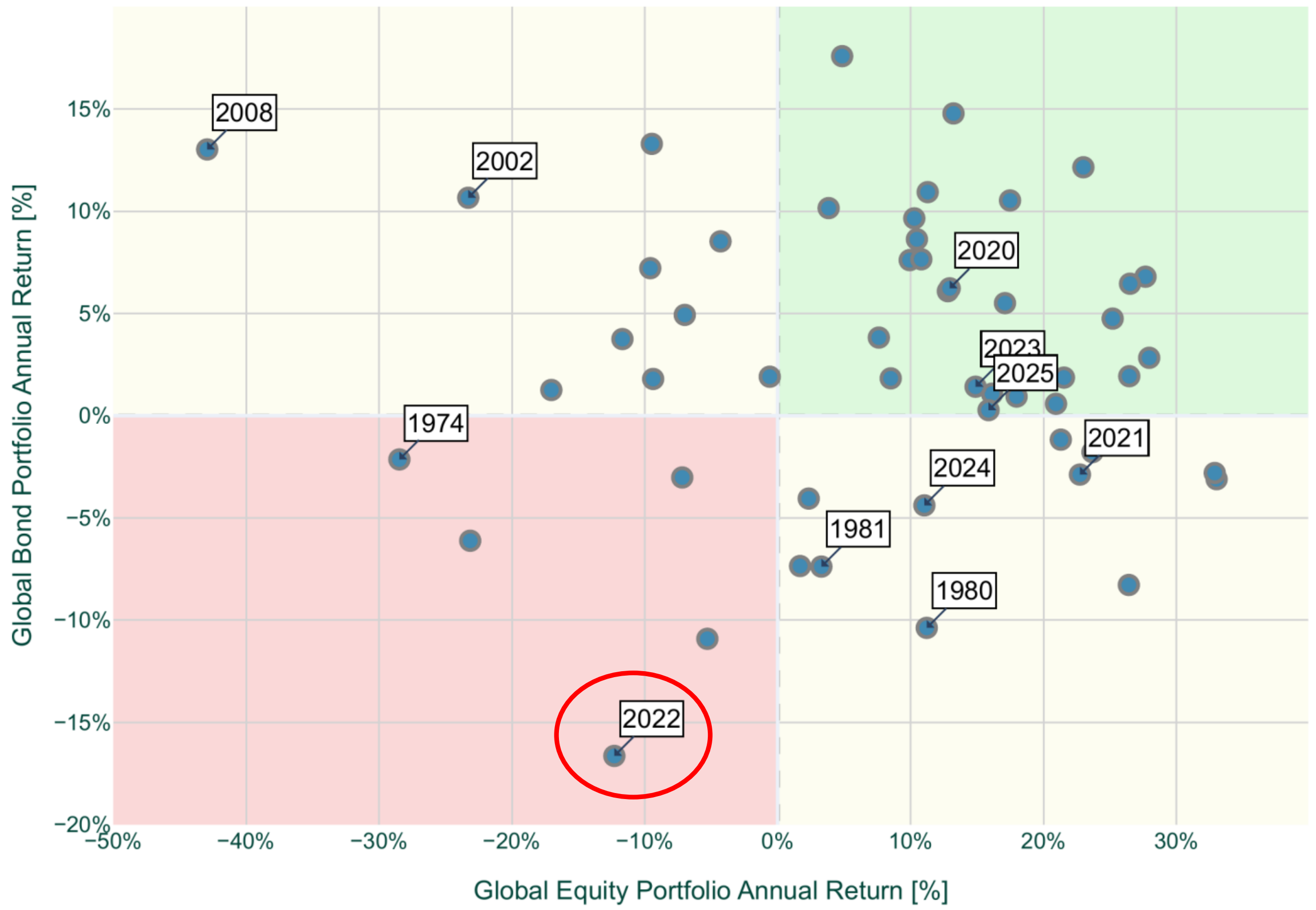


Return in ATP's Investment Portfolio and Danish market-rate products with high risk

Also when adjusting for risk

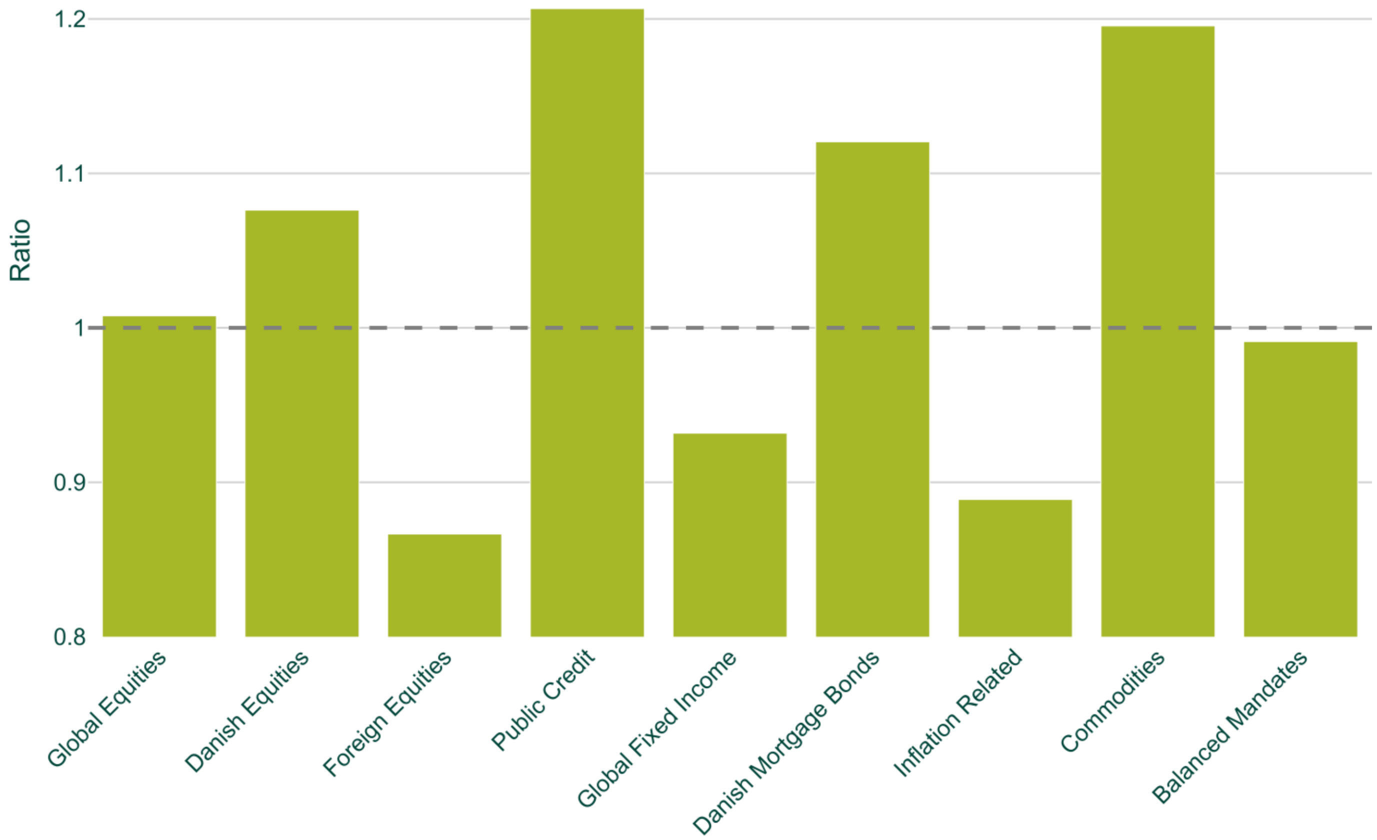
Cumulative return on ATP's risk seeking portfolios at 10 pct ex ante volatility

2022 was an unusually bad year for ATP's strategy but does not invalidate strategy



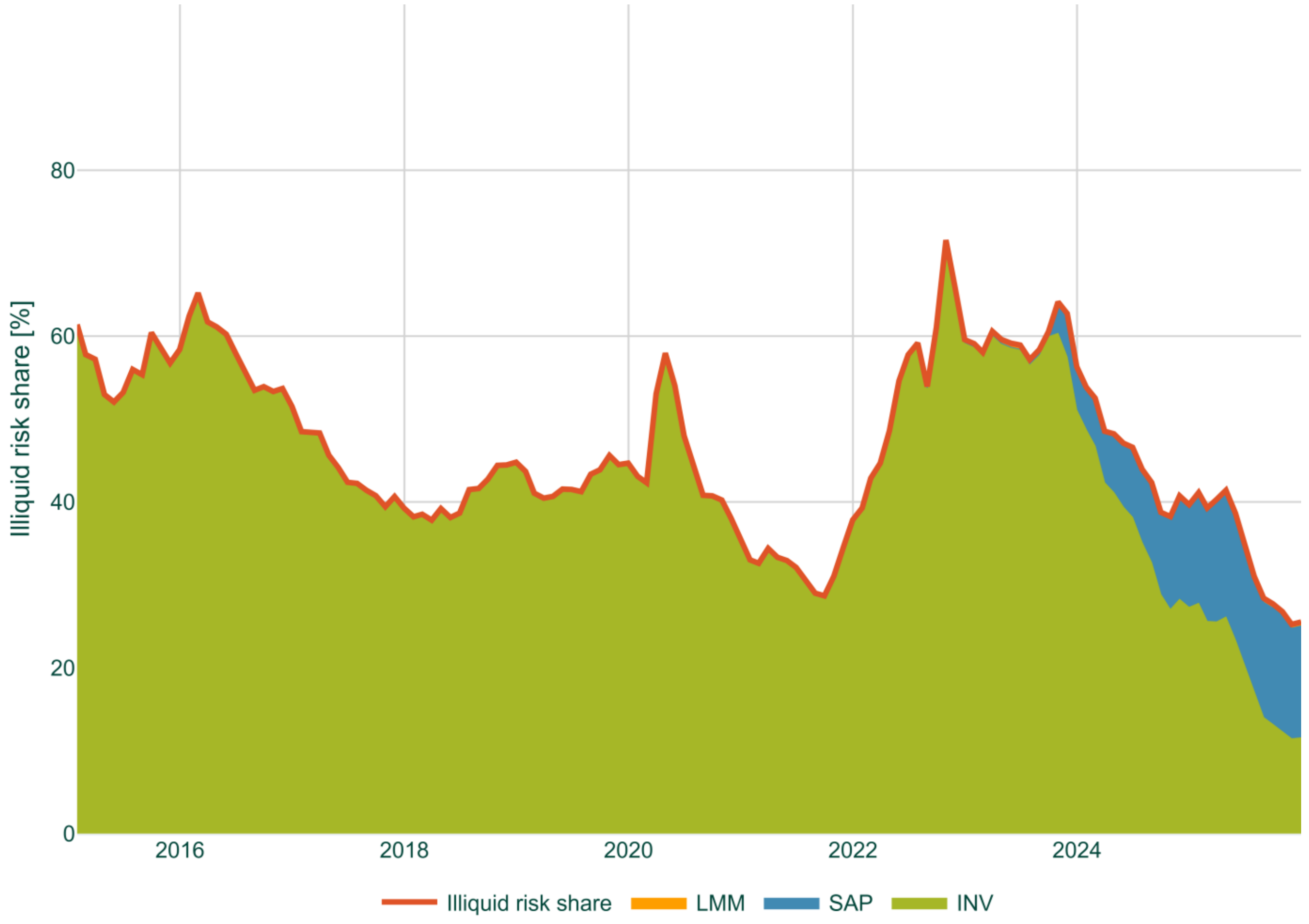
Co-movement of equity and bond returns

Liquid assets: performance differs across asset classes



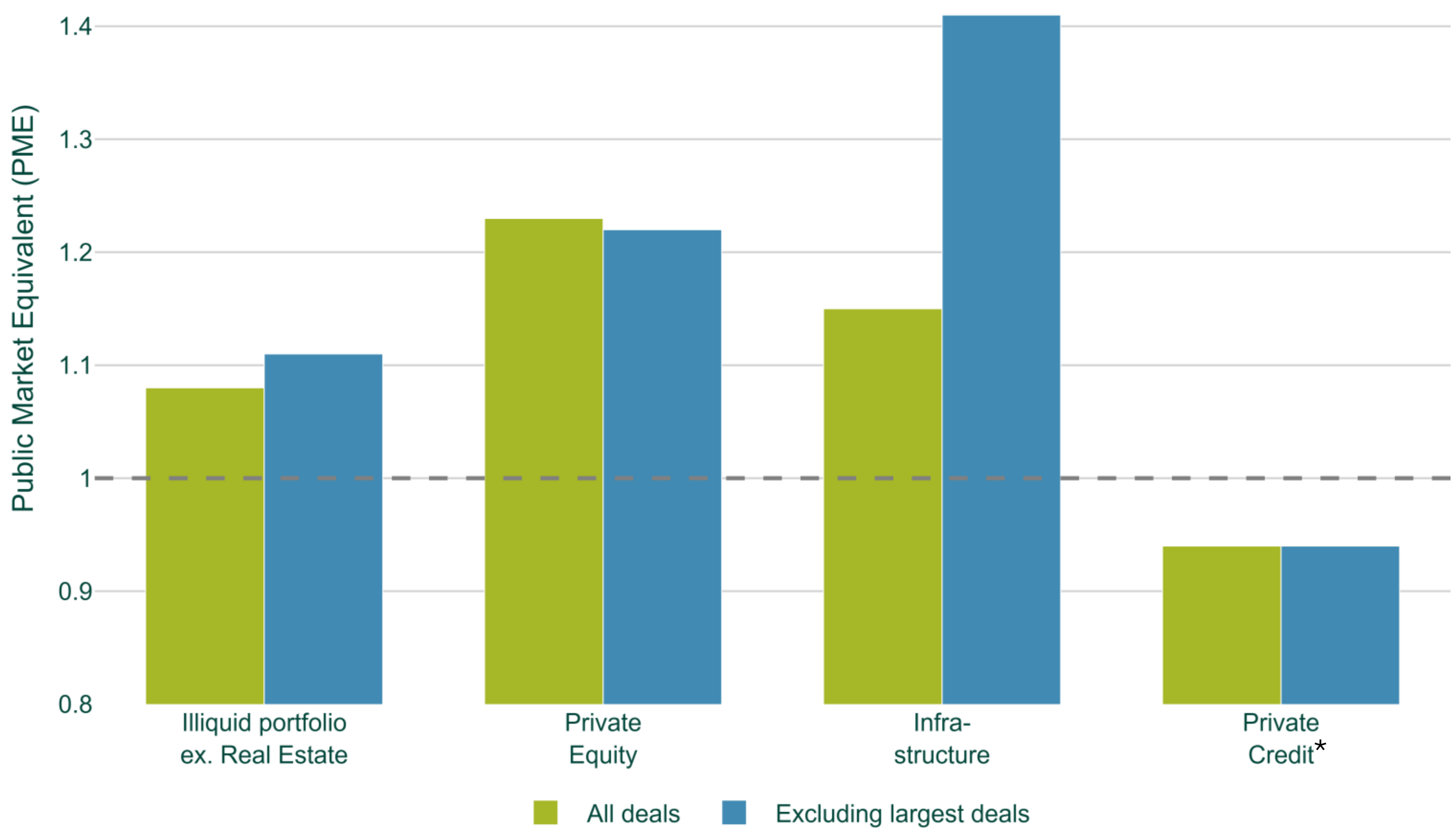
Ratio of ATP total return and reference total return. Both scaled to 10 pct ex ante volatility

Illiquid assets gave rise to rebalancing challenge



Share of risk in illiquid assets

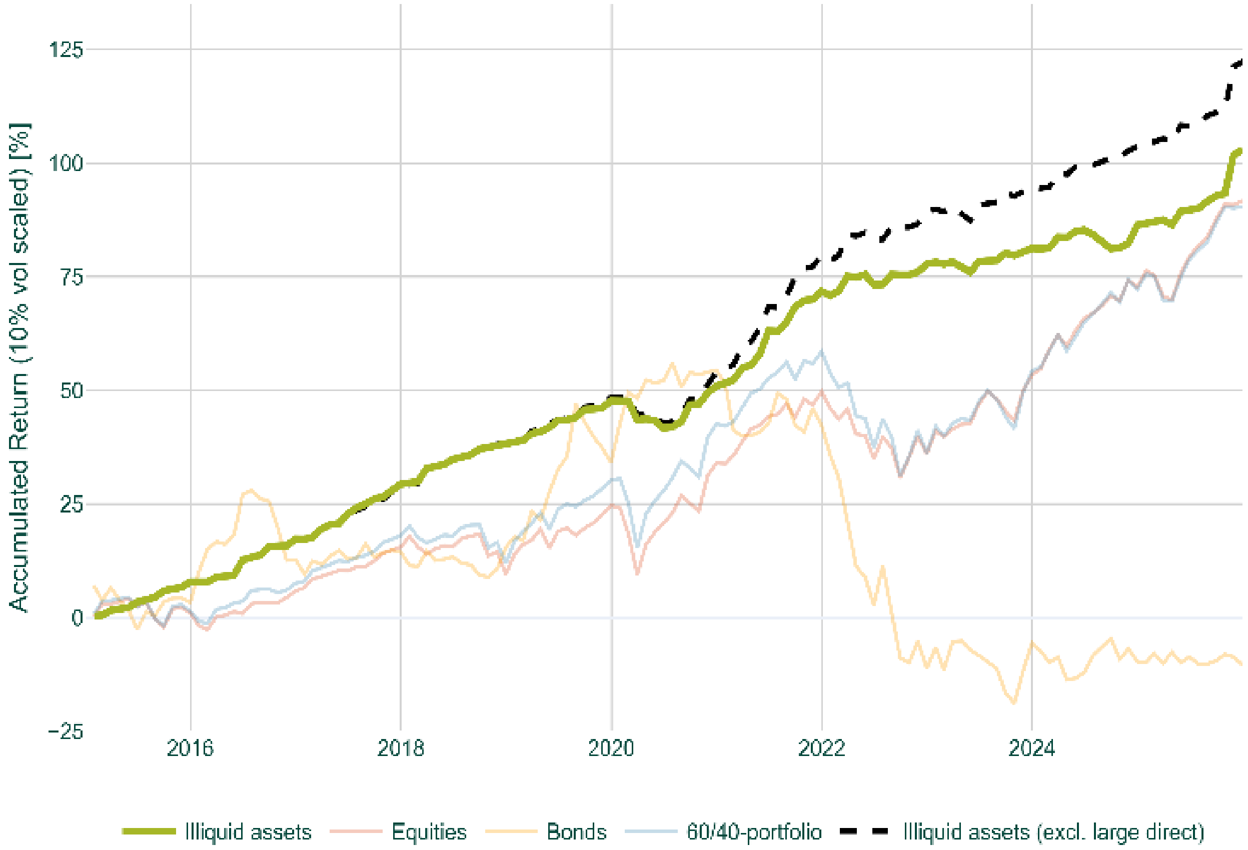
Illiquid assets outperformed on Public Market Equivalents



Public Market Equivalents for the illiquid portfolio

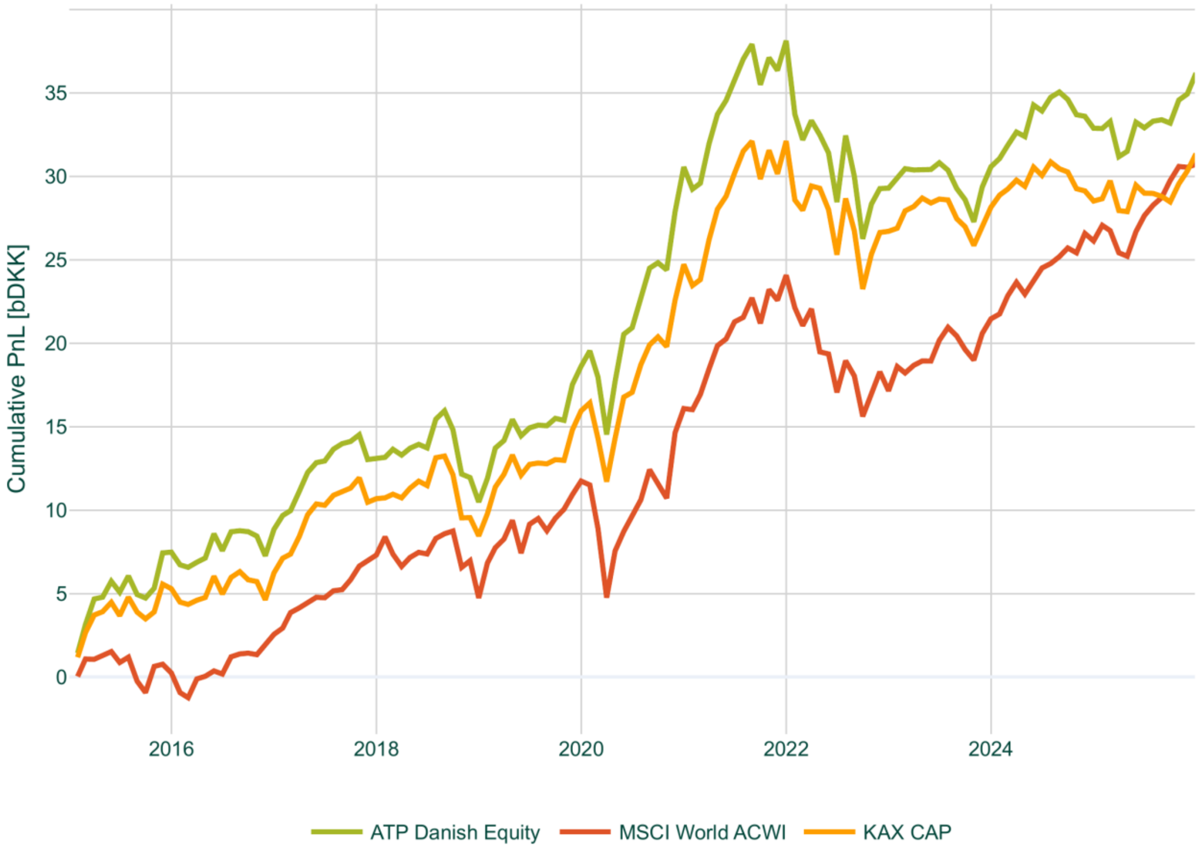
*** The reference on Private Credit is substantially riskier than ATPs portfolio due to rating and leverage differences**

Less outperformance vs volatility-scaled 60-40 portfolio



Cumulative return on illiquid assets with scaling to 10 pct volatility, with illiquidity premium

ATP’s Danish equities have outperformed



Cumulative P/Ls on ATP’s investments in Danish equities, a global equity index and a Danish equity Index

But makes up a material overweight – and semi-illiquid share – of total equities

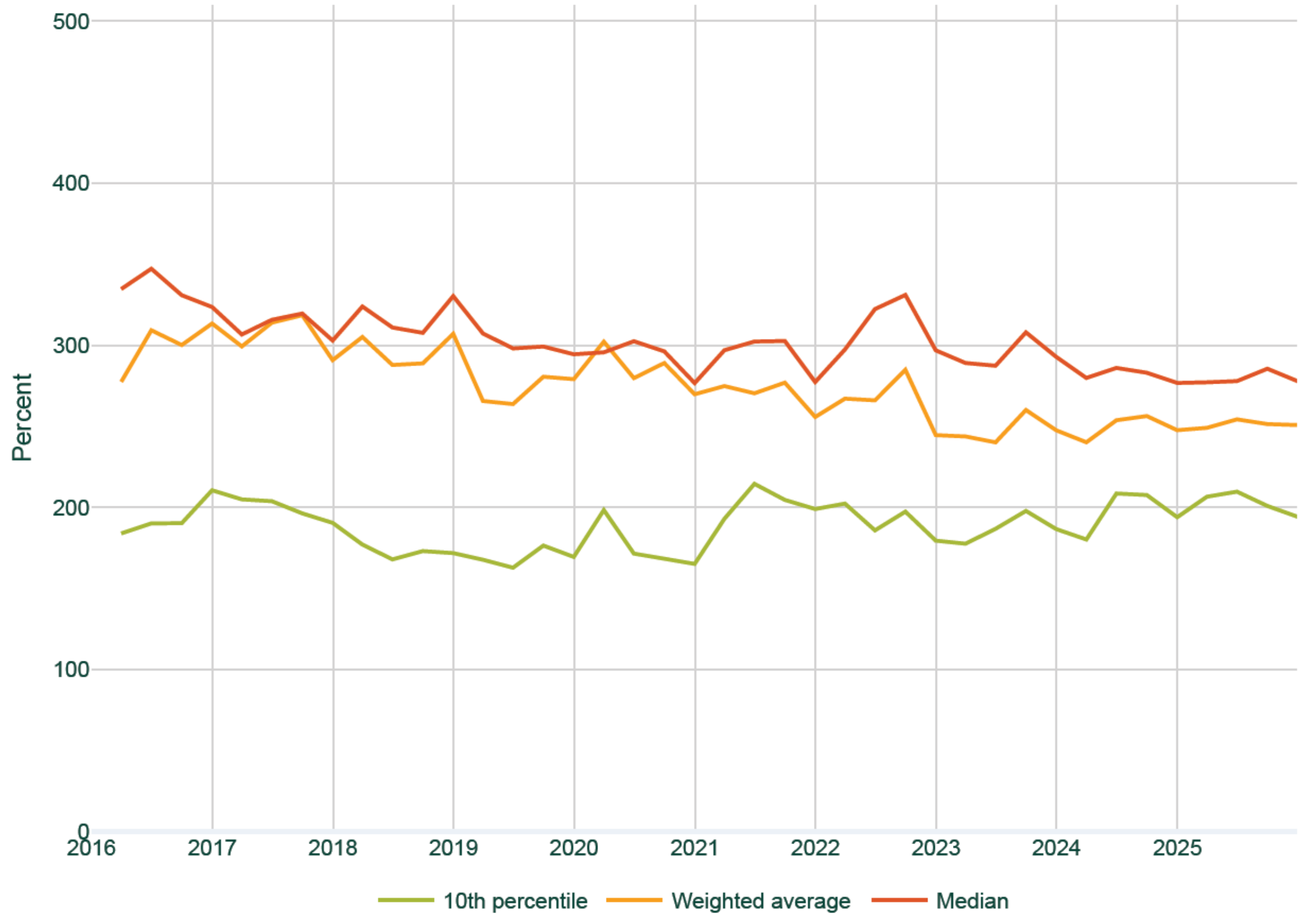
Exposure on Danish Equities (listed and unlisted) relative to the equity portfolio

ATP has high risk limits in the investment portfolio

Volatility In Investment Portfolio	44%	38%	30%	23%	15%
Risk consumption (pct of board maximum)	100	86	69	53	37
Approximate Solvency II Capital Ratio (pct)	103	120	149	195	280
Probability of technical insolvency implied by Solvency II approximation	0.40%	0.10%	0.01%	0.00%	0.00%

Approximate Solvency II capital requirement for different risk levels in the Investment Portfolio

Solvency II ratios of Danish funds



Solvency ratios in the Danish pension sector

New business model

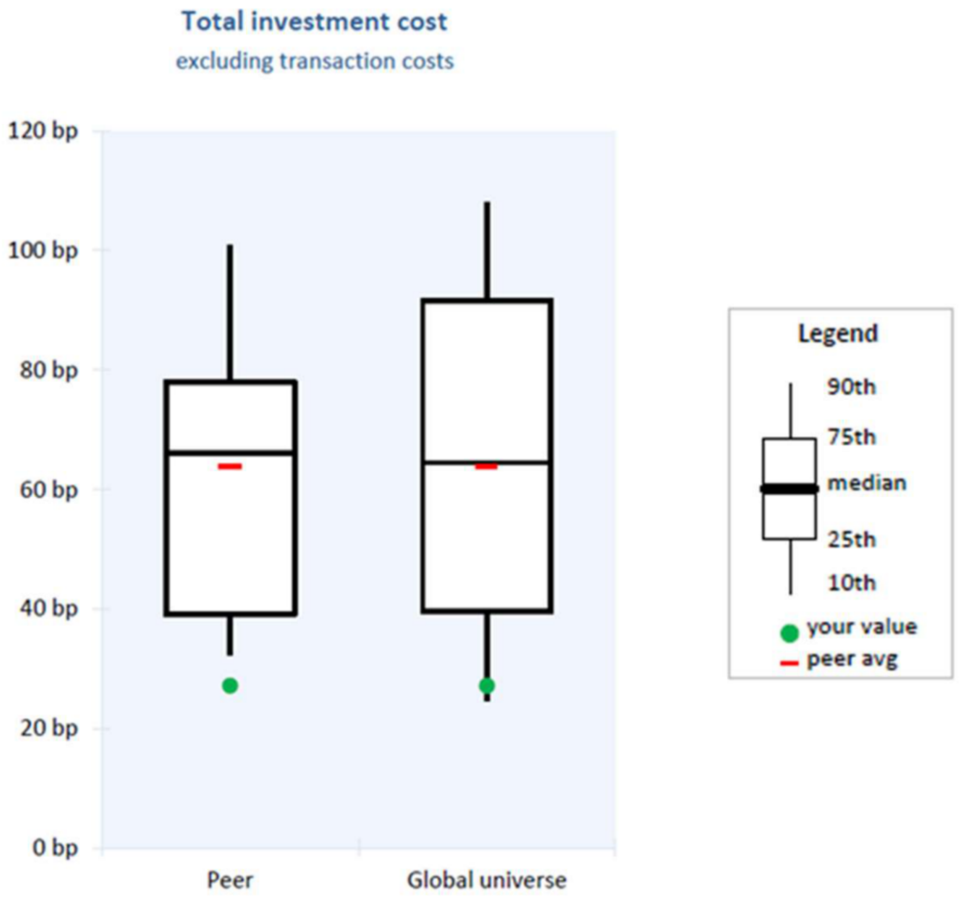
M

- Market Return Portfolio
- Especially relevant for the members without market exposure
- Losses do not impact Bonus Potential and hence solvency

SAP

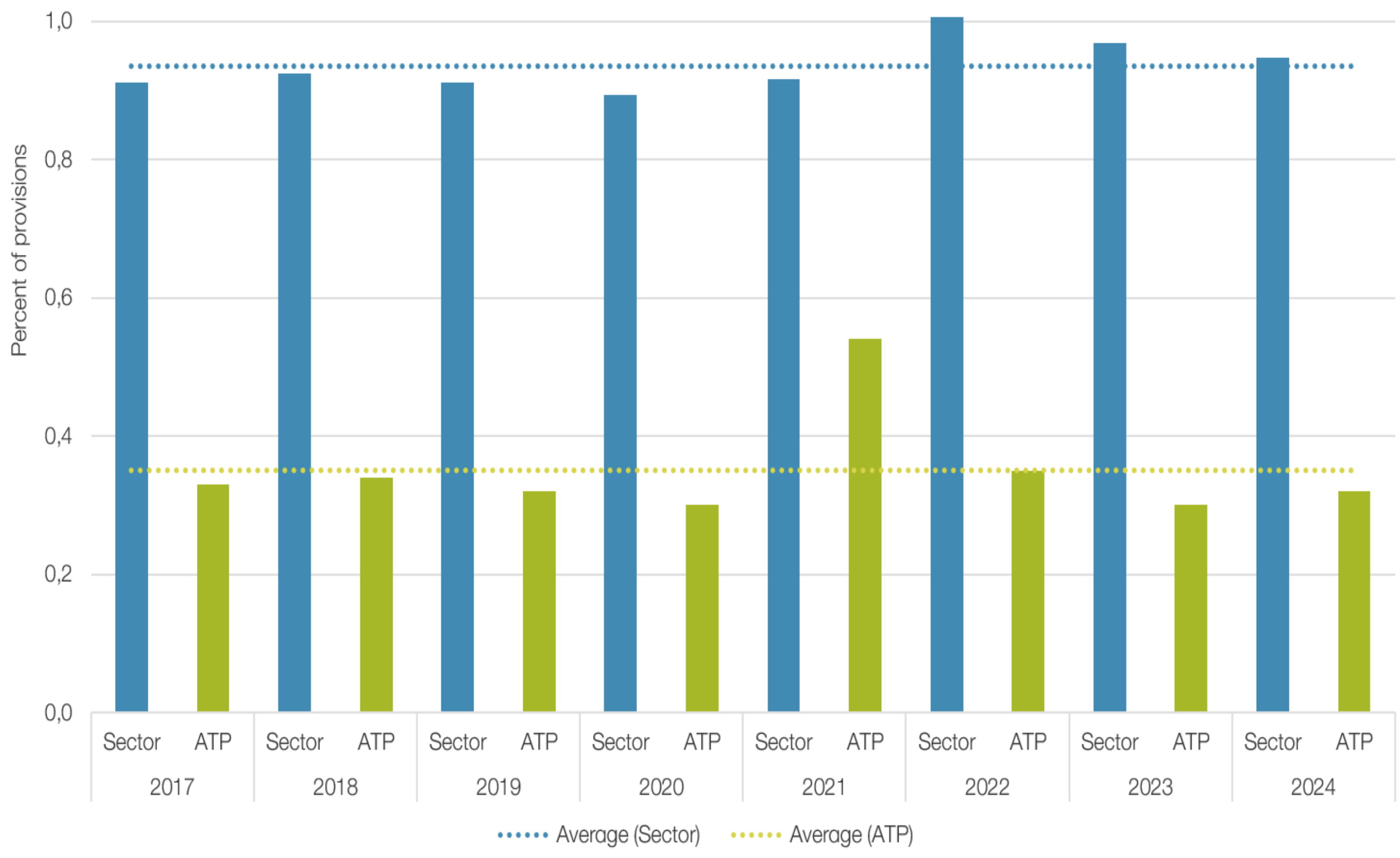
- The Suplementary Hedge Portfolio
- Utilizes the illiquid nature of ATP's liabilities to take more investment risk
- Buffer construction allows maintaining risk levels during temporary market dislocations enabling a higher share of illiquid assets
- But permanent market losses risk reducing Bonus Potential

ATP is a low-cost fund in an international comparison



ATP's investment costs compared to international peers

ATP is a low-cost fund compared to Danish peers



Costs across Danish Pension Funds, 2017-2024

Recommendations

RECOMMENDATION 1

Maintain investment beliefs generally, but reconsider beliefs on illiquid assets

RECOMMENDATION 1

We recommend that ATP generally maintains its investment beliefs; however, ATP could reconsider the purpose of and its comparative advantages in illiquid assets. While peer risk should not be part of the foundation for constructing ATP's portfolio, it needs to be addressed in communications

RECOMMENDATION 2

Investment strategy should maintain matching assets to liabilities

RECOMMENDATION 2

We recommend that ATP maintains its overall investment strategy of separating the funds according to their purpose: maintaining a hedge portfolio that matches its liabilities and a risk-seeking portfolio. However, ATP should put more effort into communicating the consequences of its investment strategy, including the volatility of the hedging portfolio

RECOMMENDATION 3

Maintain risk parity strategy, but reconsider level of risk in the Investment Portfolio

RECOMMENDATION 3

We recommend that ATP maintains its risk parity strategy for the Investment Portfolio but reconsiders the total level of risk in the Investment Portfolio. The concern is not the leverage itself, which is competently implemented by ATP's treasury operations, but the absolute level of risk which is high relative to other pension funds of similar systemic importance

RECOMMENDATION 4

Prioritize risk taking in the Market Return portfolio over the Supplementary Portfolio

RECOMMENDATION 4

We recommend that ATP prioritizes the Market Return Portfolio over the Supplementary Hedge Portfolio if the risk-taking level is to be reduced. The Market Return Portfolio is a simple way to enable exposure to risky sources of return for its members without generating risk to the Bonus Potential. ATP should be cognizant of the complexity and risks of the Supplementary Hedge Portfolio, in particular through the buffer element. The Supplementary Hedge Portfolio requires continuous awareness of its risk by the Board and communication to the public

RECOMMENDATION 5

Further develop the illiquid investment framework

RECOMMENDATION 5

We recommend that ATP extends its illiquid investment framework to include the share of illiquid assets and articulates its comparative advantage for generating outperformance. ATP's considerations should include both the risk of being exposed to concentration risk in volatile markets, the effects illiquid assets have on its rebalancing policy, and whether it can harvest an illiquidity premium

RECOMMENDATION 6

Develop a quantitative framework for Danish equities

RECOMMENDATION 6

We recommend that ATP explicitly states its investment rationale for the size of the position in Danish equities relative to the global portfolio and its superior ability to select stocks within the Danish market. Given the rationale, it should compute the optimal weight in Danish equities and continuously assess whether the Danish allocation generates a return that can justify the deviation from a more global portfolio

RECOMMENDATION 7

Adopt a more return-focused investment framework

RECOMMENDATION 7

We recommend that ATP adopts a more explicit focus on returns. In addition to maintaining target risk exposures, ATP should regularly assess whether each major exposure is expected to earn sufficient return for its risk, liquidity, leverage, and complexity. This assessment should be anchored in transparent benchmarks, with active risk limits set relative to those benchmarks, and there should be a process for periodic review of the benchmarks.

RECOMMENDATION 8

Consistent communication centered on pensions

RECOMMENDATION 8

We recommend that ATP communicates consistently, centering its communication on the pensions it delivers. The management of ATP should be aligned with this communication focusing on the trade-off between pension levels and pension at risk. The secondary level of communication can focus on performance of the investment strategies relative to benchmarks and show how the performance contributes to the ultimate goal of paying pensions. Persistent misunderstandings in public discussion—on costs, on the role of leverage and derivatives, and on the function of the hedging portfolio—make it ATP's responsibility to report regularly and proactively so that public debate is anchored on the outcomes ATP is structured to deliver

Overall conclusions

ATP’s investment beliefs and overall investment strategy are largely in line with best practice and make use of ATP’s comparative advantages.

- The major elements of ATP’s investment strategy are grounded in modern portfolio theory and consistent with its investment beliefs.
- The use of leverage and derivatives to scale a risk parity strategy exploit the comparative advantages of ATP’s product.
- ATP has built a strong investment organization, and the execution of the investments has been excellent with no major operational incidents identified during the review.
- ATP should reconsider belief in illiquid assets and level of risk taking in Investment Portfolio, prioritize Market Return Portfolio over the Supplementary Hedge Portfolio, further develop the illiquid investment framework, develop a quantitative framework for Danish equities, adopt a more return focused investment framework, and communicate more consistent.