



PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS



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- Aggregate question
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Survey process summary (both Boards)

- San Jose's retirement systems adopted risk maximum of 12%
- Initial risk tolerance analysis conducted in 2018. Verus recommends re-visiting risk tolerance target every 5 years
- In November 2022, Verus drafted risk tolerance survey and provided to Staff for review and comment
- Survey posted in Survey Monkey November 28, 2022 with December 31, 2022 response deadline
- Of 15 combined Boards' trustees, there were 12 complete responses (80% response rate)
- In January 2023, follow up oral interviews were offered to all trustees; 6 trustees participated in oral interviews throughout January

Areas of trustee risk tolerance assessment

- Risk objective(s)
- Risk priorities
- Time horizon
 - Investment plan strategy
 - Investment implementation
- Investment philosophy
- Governance

Key takeaways

- **Risk objectives:** Trustees unanimously rated long term sustainability of the plan (i.e., funded status volatility) and meeting or exceeding Plans' actuarial rate of return as key risk management objectives
 - Trustees indicated willingness to maintain or increase current risk target
- **Risk priorities:** Trustees consistently identified return volatility and drawdowns as medium concerns
 - Somewhat less meaningful risks were illiquidity and peer/"headline" risk
- **Time horizon – investment plan strategy:** Most trustees expressed belief that staying the course over time was appropriate strategic objective; there was not appetite for tactical investment actions
 - Strategic decisions should be evaluated over a fairly long time-horizon; implies asset allocation reviews should occur less frequently than current annual process
 - Responses were split between an asset allocation horizon of 3-7 years and greater than 10 years
- **Time horizon – investment implementation:** Trustees were fairly uniform in wanting to evaluate implementation decisions over shorter time periods
 - Staff decisions – approximate 3-year horizon
 - Investment manager decisions – approximate 5-year horizon

Key takeaways

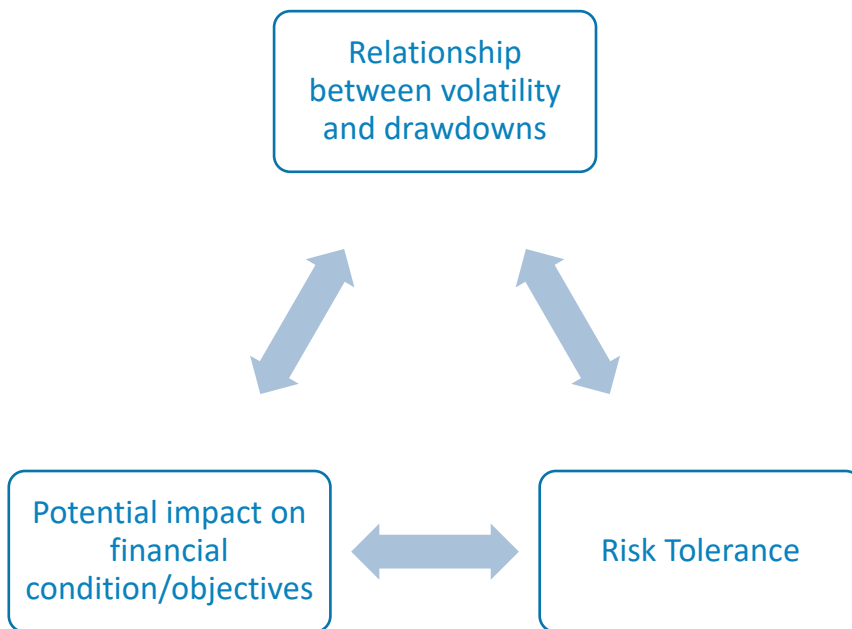
- ***Investment philosophy:***

- A simple majority of Trustees indicated belief that alpha can be used to close gaps between expected policy return and actuarial return rate (currently, 6.625%)
- A simple majority also indicated comfort with maintaining complex investment program with mix of public and private assets
- Trustees also comfortable with taking active risk, but only in areas where there is higher probability for success from active management; specifically, private markets
- Additionally, trustees expressed preference for risk awareness in actively managed strategies
 - Average total fund value-added expectation of 30-60 basis points

- ***Governance:***

- Trustees are comfortable with current governance structure
 - Confidence in staff is high

Determining risk limits



The San Jose retirement boards have used this framework to determine appropriate level of total portfolio volatility

Actuarial projections

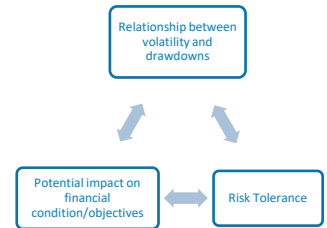
Potential impact on financial condition/objectives

- Board determined there were three actuarial metrics to include in formulation of current risk limits: (1) Funded Ratio, (2) City Contributions, and (3) Interest cost
- Applying drawdowns in 5% increments ranging from 20% to 40%, we can determine impact on these three metrics

		Funded Ratio	City Contributions	Interest Cost	Funded Ratio change	City Contributions change	Interest Cost Change
Single Year	Baseline	57%	\$ 252	\$ 108	0%	\$ -	\$ -
	-20%	50.7%	\$ 321	\$ 144	-6%	\$ 69	\$ 36
	-25%	47.7%	\$ 334	\$ 151	-9%	\$ 82	\$ 44
	-30%	44.8%	\$ 347	\$ 159	-12%	\$ 95	\$ 52
	-35%	41.8%	\$ 361	\$ 167	-15%	\$ 109	\$ 60
	-40%	38.9%	\$ 374	\$ 175	-18%	\$ 122	\$ 68

		Funded Ratio	City Contributions	Interest Cost	Funded Ratio change	City Contributions change	Interest Cost Change
10-year (cumulative)	Baseline	75%	2,317	\$ 944	0%	\$ -	\$ -
	-20%	61.8%	2,713	\$ 1,324	-14%	\$ 397	\$ 380
	-25%	59.3%	2,788	\$ 1,271	-16%	\$ 471	\$ 327
	-30%	56.7%	2,862	\$ 1,467	-19%	\$ 546	\$ 523
	-35%	54.2%	2,938	\$ 1,538	-21%	\$ 621	\$ 594
	-40%	51.7%	3,014	\$ 1,609	-24%	\$ 697	\$ 666

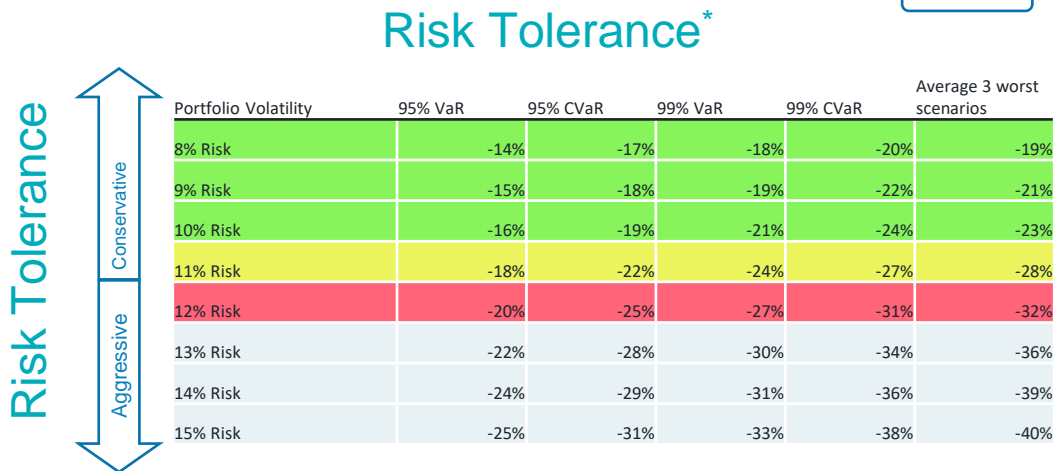
Source: Actuarial metrics provided by Cheiron. Dollar amounts in millions



The Single Year table identifies the maximum or minimum for each category.

The 10-year Cumulative table identifies the end of period financial situation and total dollar amount for each category

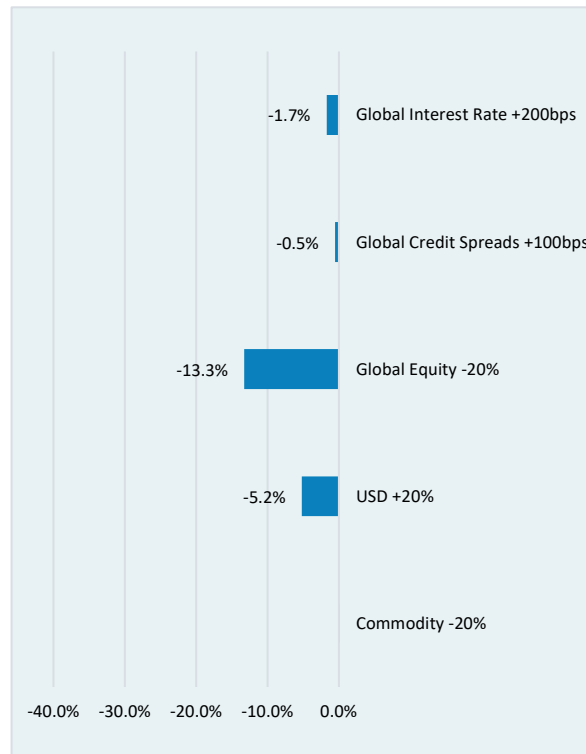
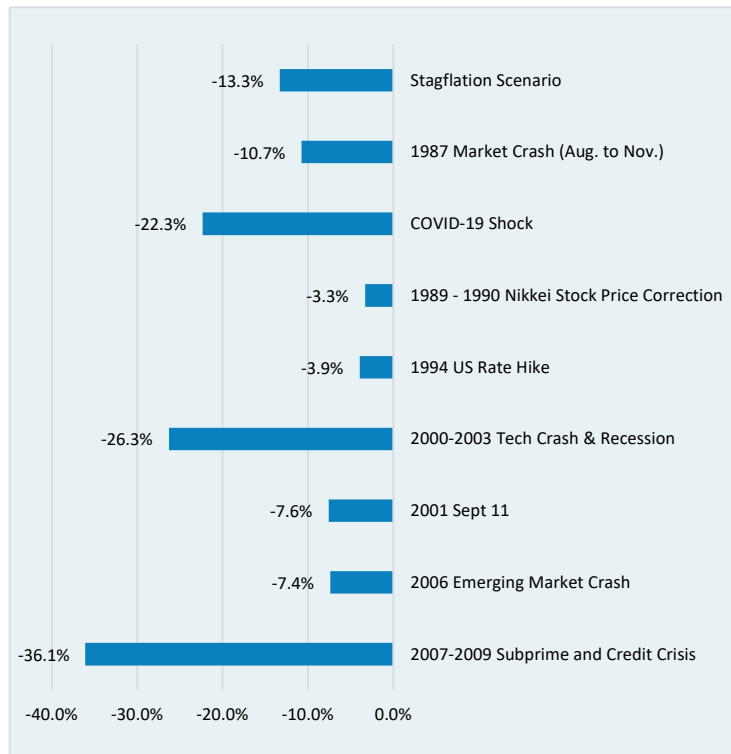
Volatility, drawdowns and risk tolerance



- Board's risk tolerance determines appropriate level of risk and how expected drawdowns will be estimated
- Current 12% Risk Limit selected when Plan's policy expected risk was 9.4%
- Current policy expected risk (re-confirmed at 5/18/23 meeting) is 12.1%
- ***Thus, Verus recommends Board consider establishing new risk limit of 13%***

* Varying risk levels represent varying Stock-Bond allocations and their respective ex-ante (i.e., forward looking) risk expectations for 8-10 year forecast horizon

Scenario and shock analyses



Survey implications

- Current 12% Risk Limit selected when Plan's policy expected risk was 9.4%
 - Policy allocation expected risk (re-confirmed at 5/18/23 meeting) is 12.1%
- Comfort with current strategic asset allocation implies that IPS risk limit is set a bit too low
- Survey results indicate that Board concerns about volatility to funded status are secondary to concerns about failing to achieve the assumed long-term rate of return
- Thus, Verus recommends a modest upward adjustment of the risk limit maximum to 13% with corresponding adjustments to other IPS limits

Recommended IPS risk limits

Characteristic	Measurement	Board Approved Limit per Current IPS	Recommended Board Approved Limit	Rationale
Total fund absolute volatility		12%	13%	Comfort with current SAA plus survey responses
Funded ratio		5% probability of falling below 60%	5% probability of falling below 48%	Corresponds to recommended 13% volatility
Drawdown exposure		-30%	-36%	Corresponds to recommended 13% volatility

Conclusions and next steps

Conclusions:

- Trustees are generally aligned on definition of key risks and prioritization of risks
- While funded status volatility and drawdown risk are concerns, falling short of the long-term actuarially assumed return is a greater concern
- There appears to be shared vision of how to invest plan assets (i.e., strategic vs. tactical, well diversified, blend of public and private)
- Board should re-visit IPS language regarding frequency of strategic (i.e., asset allocation) reviews to align decision making processes with philosophy and beliefs articulated in survey results

Appendix

- Downside measures
- Aggregate survey question responses

Appendix - Downside measures

Verus considers three methods of determining downside risk (or tail risk) for the San Jose Federated

Value at risk (VaR): VaR calculates the maximum loss expected over a 1-year period given a specified degree of confidence

Conditional Value at Risk (CVaR): CVaR measures the expected loss if VaR is exceeded. It takes the average of the tail observations

Average of three worst historical scenarios: We simulate the portfolio through historic scenarios to determine the three worst periods and take the average of those scenarios.

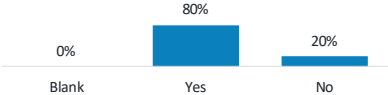
Risk Metric	Description
95% VaR	(95% Confidence) We don't expect the worst annual loss to exceed
99% VaR	(99% Confidence) we don't expect the worst annual loss to exceed
95% CVaR	(95% Confidence) If VaR is exceeded, the average expected loss
99% CVaR	(99% Confidence) If VaR is exceeded, the average expected loss
Avg. Scenario Drawdown	The average of the three worst historic scenarios measured in BarraOne

There are three methods to calculate VaR: Historic, Parametric, and Monte Carlo. VaR calculations are conducted in BarraOne using Monte Carlo VaR.

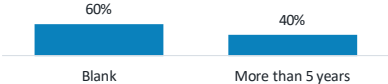
Responses

Trustee experience

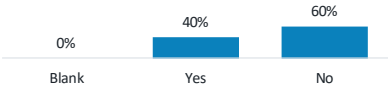
2 Do you have investment experience?



3 If yes, check level of experience



Career in the investments or financial services industry

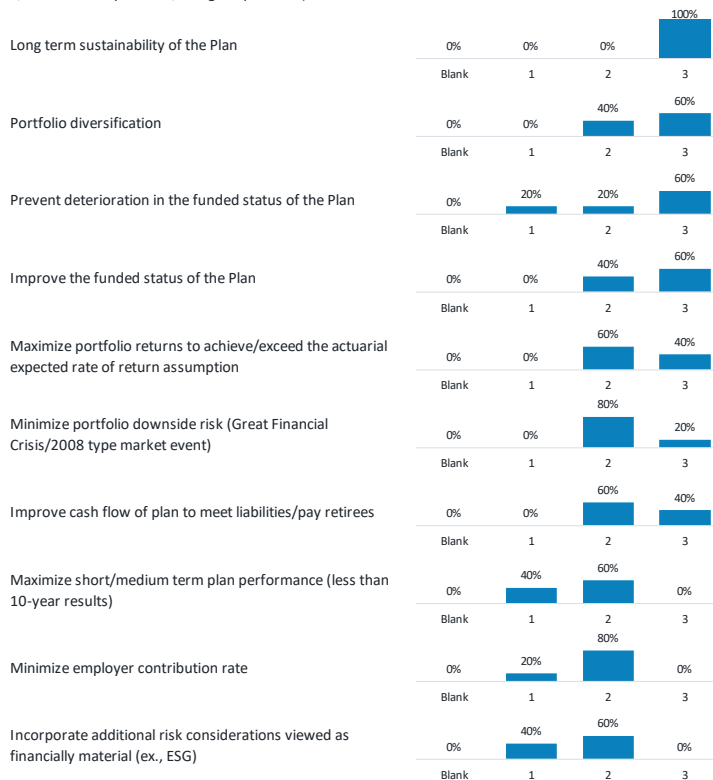


Responses

Plan objectives

4

Describe the level of importance you place on the following long-term objectives for the Plan. Long-term is defined as covering multiple market cycles (10-20 years). Rank objectives from 1-3 (1=lower importance, 2=medium importance, 3=high importance).

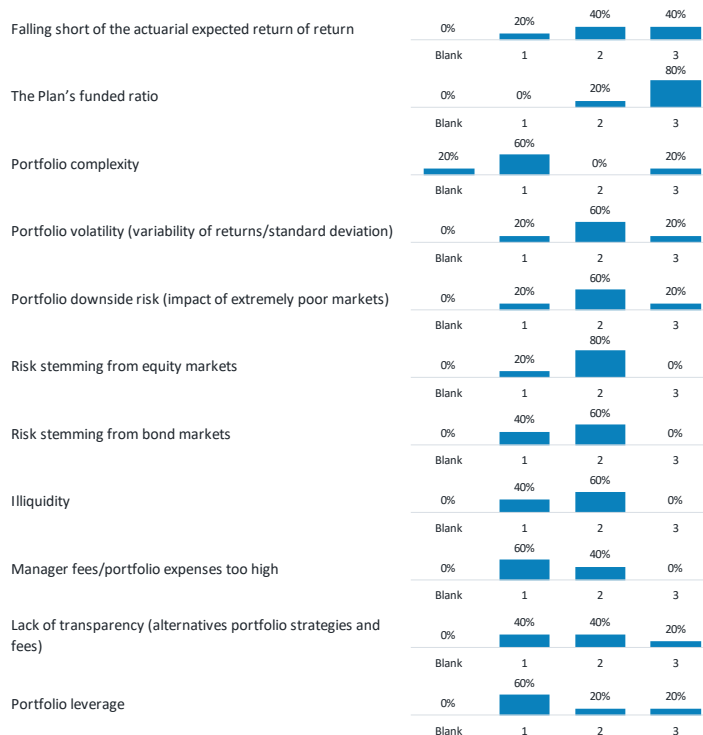


Responses

Risk assessment

5

Describe your risk assessment of the Plan, i.e., how you would prioritize various risk factors. Rank risk factors from 1-3 (1=low, 2=medium, 3=high). 3 means that you believe this is a high risk consideration for the Plan portfolio, whereas 1 means you believe this is a low risk consideration.



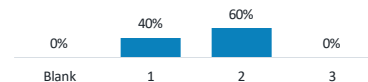
Responses

Risk assessment

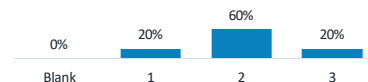
6

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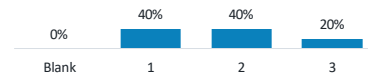
Headline risk (bad press due to unforeseen negative portfolio events)



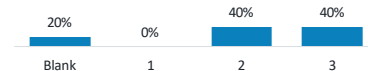
Constituents/stakeholders understanding of what we do and why we do it



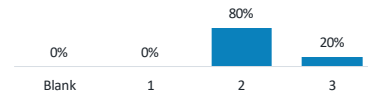
Peer risk (looking different than the average pension plan)



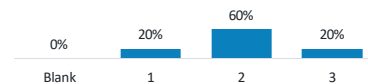
Regulatory/legislative risk (unforeseen changes)



ESG (1=low risk if incorporated; 3=high risk if incorporated)



Emerging managers (1=low risk if incorporated; 3=high risk if incorporated)



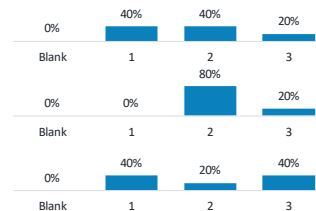
Responses

Risk assessment

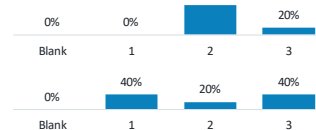
7

Describe your risk assessment of the Plan, i.e., how you would prioritize various risk factors. Rank risk factors from 1-3 (1=low, 2=medium, 3=high). 3 means that you believe this is a high risk consideration for the Plan portfolio, whereas 1 means you believe this is a low risk consideration.

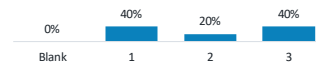
Governance structure: responsibility of Board/Staff/Consultants - (i.e., investment protocol/delegation of investment authority)



Board/Staff turnover



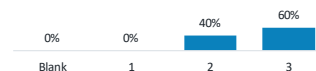
Investment Philosophy/Approach adopted by Plan



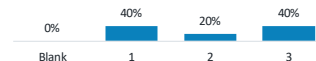
8

How do you define risk? Rank objectives from 1-3 (1=lower importance, 2=medium importance, 3=high importance).

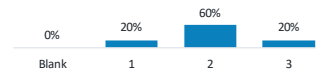
Volatility (i.e., standard deviation)



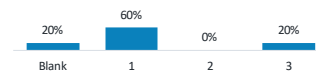
Drawdown (i.e., negative returns beyond 10%)



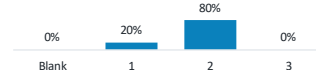
Loss of capital (loss in absolute dollars)



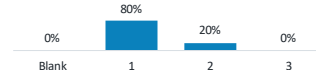
Peer risk (looking different than the average pension plan)



Tracking Error to a Benchmark or Policy Index (portfolio differences from comparative indexes)

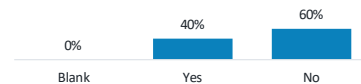


Headline risk (bad press due to unforeseen negative portfolio events)



Responses Strategic

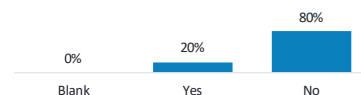
9 Do you believe that the expected return on our portfolio and our discount rate should be the same?



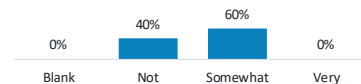
10 If not, do you believe the actuarial investment return assumption should be adjusted downward?



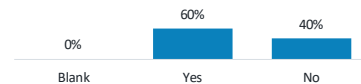
11 Or, instead, should the portfolio's risk tolerance be adjusted upward to increase projected performance in line with the actuarial return assumption?



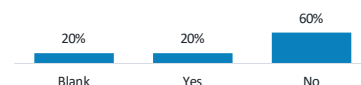
12 How important do you believe it is to have a discount rate similar to other California pension funds?



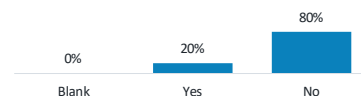
13 Do you believe that a more complex portfolio structure is necessary to meet/exceed the actuarial investment return assumption?



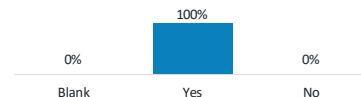
14 If 'No', would you prefer a simpler portfolio structure?



16 Would you describe your investment decision making approach as one of taking action to revise the asset allocation policy if it appears to not be delivering on expectations in less than the assumed investment time horizon for the policy?

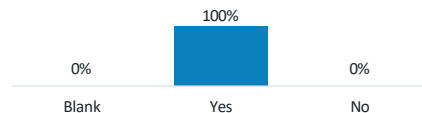


17 Or an approach of maintaining the asset allocation policy through various market environments to enable the policy to deliver over the assumed investment time horizon for the policy?

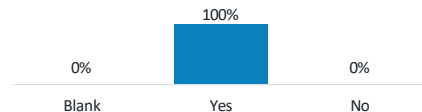


Responses Implementation

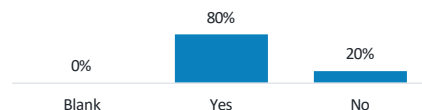
18 Do you have a preference for passive or active management in public markets?



19 Do you prefer active management in less efficient markets (e.g., emerging markets) and passive in more efficient markets (e.g., U.S. large cap equities)?

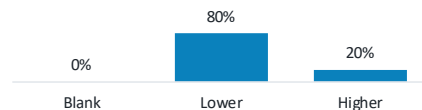


20 If you prefer active management in some or all cases, do you have a preference for concentrated (i.e., higher active risk or tracking error) vs. diversified (i.e., lower active risk or tracking error) strategies?

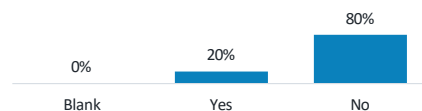


21 If so, why?

Believe that higher/lower active risk strategies will produce better returns over time (i.e., these strategies express greater investment conviction)

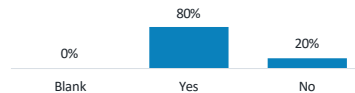


22 Do you prefer only public markets implementation vs. some combination of public and private markets implementation?

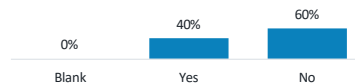


Responses Implementation

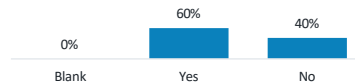
- 23 Do you prefer for the Staff and Board to be thought leaders and are comfortable with having an investment program that is very different from peers?



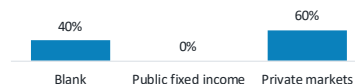
- 24 Or, do you prefer to have an investment program that can be compared more easily to peers because of a similar asset allocation and risk profile (i.e., “safety in numbers”)?



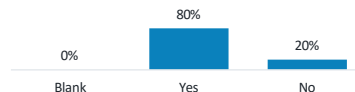
- 25 Do you believe ‘alpha’ (i.e., value-added above policy) can be consistent and/or persistent?



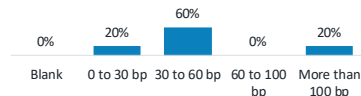
- 26 If ‘yes’, in which asset classes do you believe alpha to be consistent and/or persistent?



- 27 If ‘yes’, do you believe ‘alpha’ can and should be used to ‘bridge the gap’ which may exist between the Plan’s expected policy return and the Plan’s discount rate assumption?



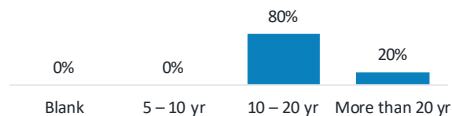
- 28 Also, if ‘yes’, what do you believe is a reasonable alpha expectation at the total fund level?



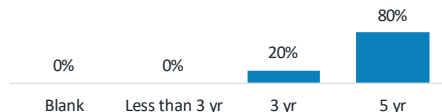
Responses

Time horizons

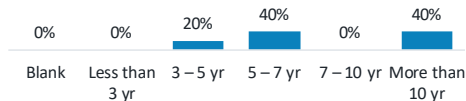
29 Time Horizon of overall Plan



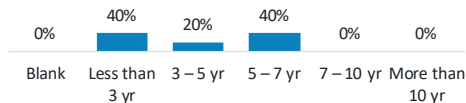
30 Asset class strategy (i.e., implementation):



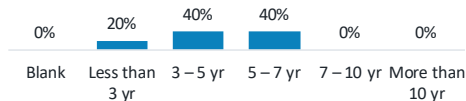
31 Strategic asset allocation:



32 Staff decisions (tactical, investment selection, etc.):



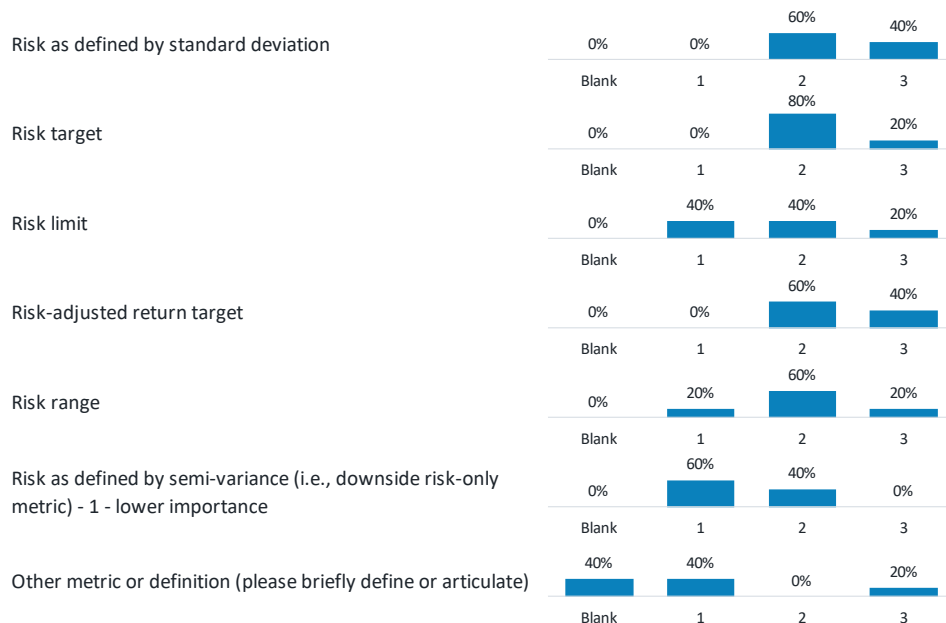
33 Managers:



Responses Metrics

34

What is most useful to you as a decision maker with respect to Plan risk management and monitoring? Rank in the order of importance (1=lower importance, 2=medium importance, 3=high importance).

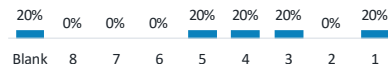


Responses Metrics

35

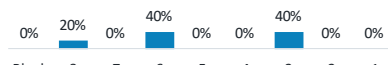
How do you rank the following risk measures? (Rank 1 – 8, 1 = most important and 8 = least important)

Active risk (“tracking error”)



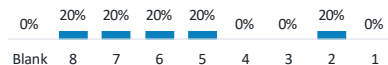
Blank 8 7 6 5 4 3 2 1

Contribution volatility



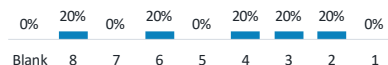
Blank 8 7 6 5 4 3 2 1

Drawdown/Tail-risk



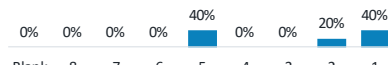
Blank 8 7 6 5 4 3 2 1

Risk factor exposure (e.g., contribution to risk from momentum exposure)



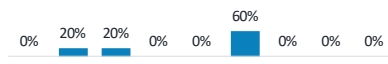
Blank 8 7 6 5 4 3 2 1

Funded status



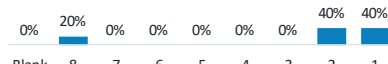
Blank 8 7 6 5 4 3 2 1

Liquidity risk



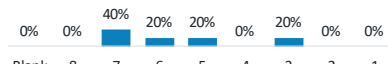
Blank 8 7 6 5 4 3 2 1

Return volatility



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Interest rates/inflation



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