November 27, 2024

Members, Board of Retirement
Employee Bargaining Units
Requesting News Media
Other Interested Parties

Subject: Meeting of the Kern County Employees' Retirement Association Investment Committee

Ladies and Gentlemen:

A meeting of the Kern County Employees' Retirement Association Investment Committee will be held on Monday, December 2, 2024 at 1:00 p.m. in the KCERA Boardroom, 11125 River Run Boulevard, Bakersfield, California, 93311.

How to Participate: Listen to or View the Board Meeting

To listen to the live audio of the Board meeting, please dial one of the following numbers (for best audio a landline is recommended) and enter ID# 891 2264 7012

- (669) 900-9128; U.S. Toll-free: (888) 788-0099 or (877) 853-5247

To access live audio and video of the Board meeting, please use the following:

- https://us02web.zoom.us/j/89122647012?pwd=scbl7BeBFU86PnKThDEPn5NMCaokD4.1
- Passcode: 806944

Items of business will be limited to the matters shown on the attached agenda. If you have any questions or require additional service, please contact KCERA at (661) 381-7700 or send an email to administration@kcera.org.

Sincerely,

Dominic D. Brown
Chief Executive Officer

Attachments

AGENDA:

All agenda item supporting documentation is available for public review on KCERA's website at www.kcera.org following the posting of the agenda. Any supporting documentation that relates to an agenda item for an open session of any regular meeting that is distributed after the agenda is posted and prior to the meeting will also be available for review at the same location.

AMERICANS WITH DISABILITIES ACT
(Government Code §54953.2)

Disabled individuals who need special assistance to listen to and/or participate in the meeting of the Board of Retirement may request assistance by calling (661) 381-7700 or sending an email to administration@kcera.org. Every effort will be made to reasonably accommodate individuals with disabilities by making meeting materials and access available in alternative formats. Requests for assistance should be made at least two (2) days in advance of a meeting whenever possible.

CALL TO ORDER

ROLL CALL (IN PERSON)

AB 2449 REMOTE APPEARANCE(S)
Items 1 and/or 2 withdrawn from agenda if no trustee(s) request to appear remotely:

1. JUST CAUSE CIRCUMSTANCE(S):
   a) The following Trustee(s) have notified the Committee of a "Just Cause" to attend this meeting via teleconference. (See Government Code § 54953).

      - NONE

   b) Call for Trustee(s) who wish to notify the Committee of a "Just Cause" to attend this meeting via teleconference. (See Government Code § 54953) – RECEIVE/HEAR REQUEST(S); NO COMMITTEE ACTION REQUIRED

2. EMERGENCY CIRCUMSTANCE(S):
   a) The following Trustee(s) have requested the Committee approve their attendance of this meeting via teleconference due to an "Emergency Circumstance." (See Government Code § 54953).

      - NONE

   b) Call for Trustee(s) requesting the Committee approve their attendance of this meeting via teleconference due to an "Emergency Circumstance". (See Government Code § 54953) – TAKE ACTION ON REQUEST(S) FOR REMOTE APPEARANCE DUE TO EMERGENCY CIRCUMSTANCE

3. Presentation and trustee education regarding Commodities deep dive presented by Chief Investment Officer Daryn Miller, CFA, Investment Analyst Melekte Yohannes, and Scott Whalen, CFA, Verus, – HEAR PRESENTATION; RECEIVE EDUCATIONAL TRAINING (15 MINUTES TRUSTEE EDUCATION CREDIT)

4. Presentation and trustee education regarding California Carbon Allowances presented by Chief Investment Officer Daryn Miller, CFA, Investment Analyst Melekte Yohannes, and Scott Whalen, CFA, Verus – HEAR PRESENTATION; RECEIVE EDUCATIONAL TRAINING (15 MINUTES TRUSTEE EDUCATION CREDIT)

5. Response to referral regarding Currency/Foreign Exchange management presented by Chief Investment Officer Daryn Miller, CFA, Senior Investment Analyst Rafael Jimenez, CFA, and Scott Whalen, CFA, Verus – HEAR PRESENTATION

6. Discussion and appropriate action on Aristotle Short Duration Bond Strategy (“Aristotle”) recommendation presented by Chief Investment Officer Daryn Miller, CFA, Senior Investment Officer Geoff Nolan, Senior Investment Analyst Rafael Jimenez, CFA and Scott Whalen, CFA, Verus – RECOMMEND THE BOARD OF RETIREMENT APPROVE UP TO $240MM INVESTMENT IN ARISTOTLE; AUTHORIZE CHIEF EXECUTIVE OFFICER TO SIGN, SUBJECT TO LEGAL ADVICE AND REVIEW

PUBLIC COMMENTS

7. The public is provided the opportunity to comment on agenda items at the time those agenda items are discussed by the Committee. This portion of the meeting is reserved for persons to address the Committee on any matter not on this agenda but under the jurisdiction of the Committee. Committee members may respond briefly to statements made or questions posed. They may ask a question for clarification and, through the Chair, make a referral to staff for factual information or request staff to report back to the Committee at a later meeting. Speakers are limited to two minutes. Please state your name for the record prior to making a presentation.

REFERRALS TO STAFF, ANNOUNCEMENTS OR REPORTS

8. On their own initiative, Committee members may make a brief announcement, refer matters to staff, subject to KCERA’s rules and procedures, or make a brief report on their own activities.

9. Adjournment

Commodities Deep Dive

Presented by:

Daryn Miller, CFA
Chief Investment Officer
Melekte Yohannes
Investment Analyst

December 2024

Contents

- Introduction and Objectives
- Role of Commodities
- Commodities Managers
- KCERA's Commodities Portfolio
- Performance
- Considerations

Introduction and Objectives

What is Staff seeking to achieve with this analysis?

- **Recap**: Review the history of the KCERA Commodities allocation and investment performance
- **Goal**: Determine whether the KCERA Commodities portfolio is meeting its goal/objectives.
    - Understand the performance of each manager and the risks associated with the investments.
- **Next Steps**: Assess considerations for potential change

Commodities Investment Objectives

Per the Investment Policy Statement (IPS), the Commodities allocation has the following primary objectives

- **Return generation:** Generating returns through price appreciation.
- **Diversification:** Low correlation with stocks and bonds.
  - Commodity prices are affected by short-to-intermediate-term supply and demand factors, not long-term cash flow expectations.
  - Individual commodities are generally uncorrelated with each other
- **Inflation hedge:** Positive correlation to inflation surprises.

Commodities Investments

Gresham Investment Management LLC

MTAP Commodity Builder Fund LLC

- Market Value as of 9/30/2024: $46.8M
- Benchmark: Bloomberg Commodity Index (BCOM)
- 5- Year annualized return: 7.32%

Wellington Management Company

Wellington Commodities

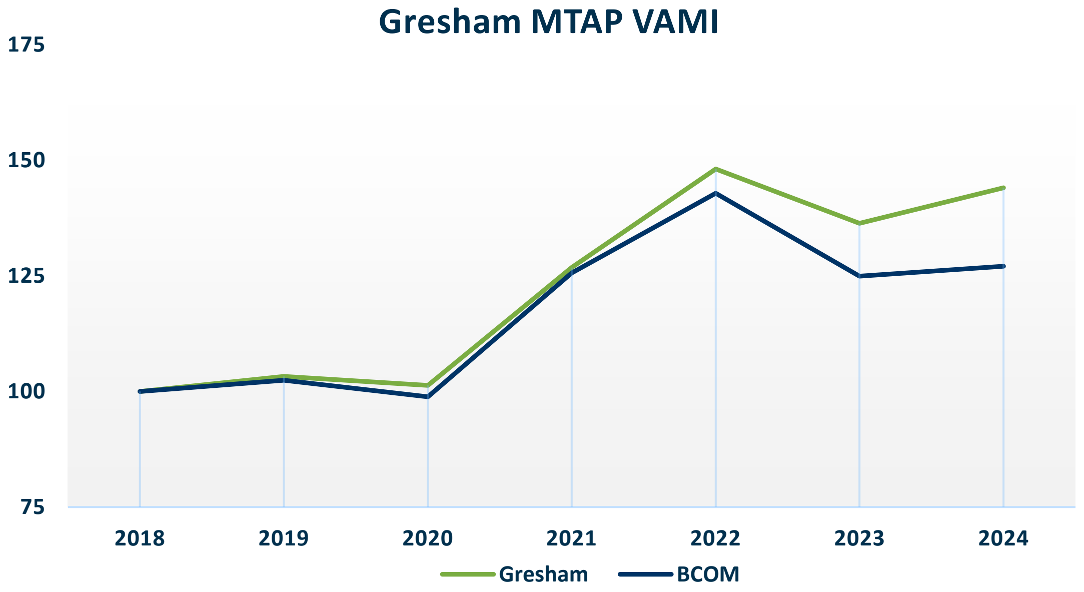
- Market Value as of 9/30/2024: $215M
- Benchmark: S&P Goldman Sachs Commodity Index (GSCI) Equal Weight
- 5- Year annualized return: 10.50%

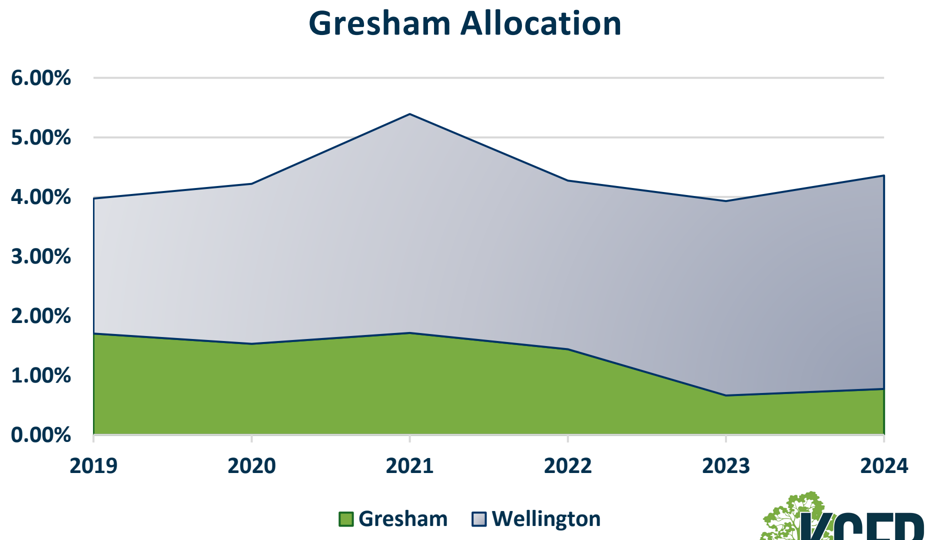
KCERA Commodities Portfolio

- Market Value as of 9/30/2024: $262M
- Benchmark: Bloomberg Commodity Index (BCOM)
- 5- Year annualized return: 9.72%

Gresham MTAP Commodities

- Founded in 2005, Gresham pioneered the management of diversified commodity investment portfolios using exchange-traded futures and forwards. The firm offers a variety of strategies within their flagship offering, Tangible Asset Program (TAP). KCERA is invested in the MTAP Commodity Builders Fund which pursues a strategy focused on a diversified basket of exchange traded commodities futures contracts to obtain exposure to the commodity markets.
- Gresham was added to the KCERA Commodities portfolio in July 2013. Since the last commodities deep dive in October 2019, Gresham generated a 5-year annualized return of 7.32%, which equates to an +2.7% excess return, with lower volatility than the BCOM.

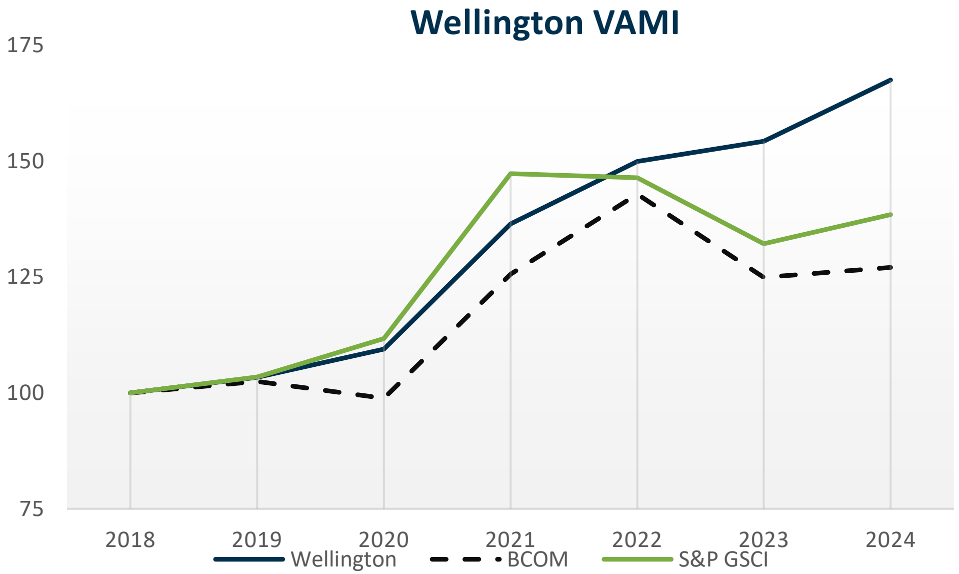


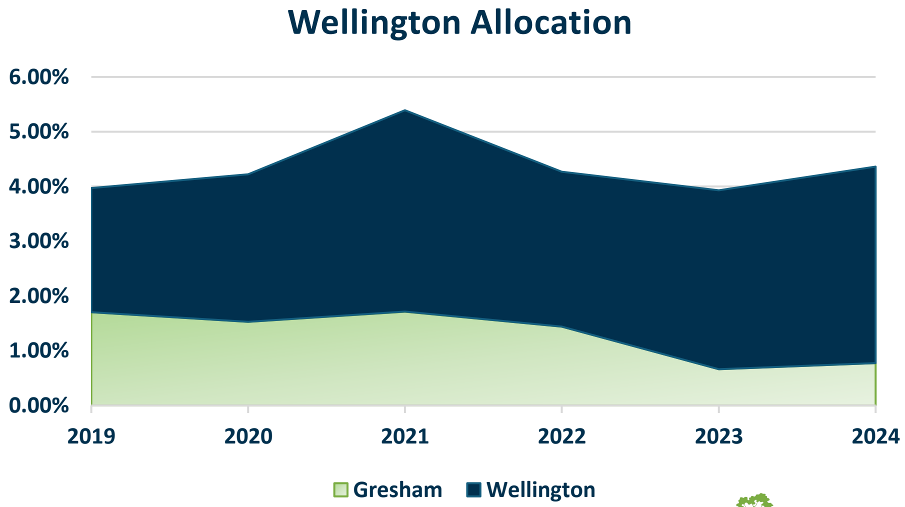


Note: Returns are based on a 5 –year annualized basis, from August 2019 to September 2024.

Wellington Commodities

- The Wellington Commodities Fund was founded in 2003, the strategy pursues a balanced sector approach with a slight counter-cyclical tilt. The strategy has more diverse commodity exposure than Gresham and incorporates fundamental research and tactical allocation into the investment process to generate alpha.
- Wellington was added to the KCERA Commodities portfolio in September 2013. Since the last commodities deep dive in October 2019, Wellington generated a 5-year annualized return of 10.50%, which equates to a +4% excess return, with lower volatility than the benchmark.
    - Wellington also outperformed the Commodities policy benchmark (BCOM), generating +5.75% excess return with a lower volatility.

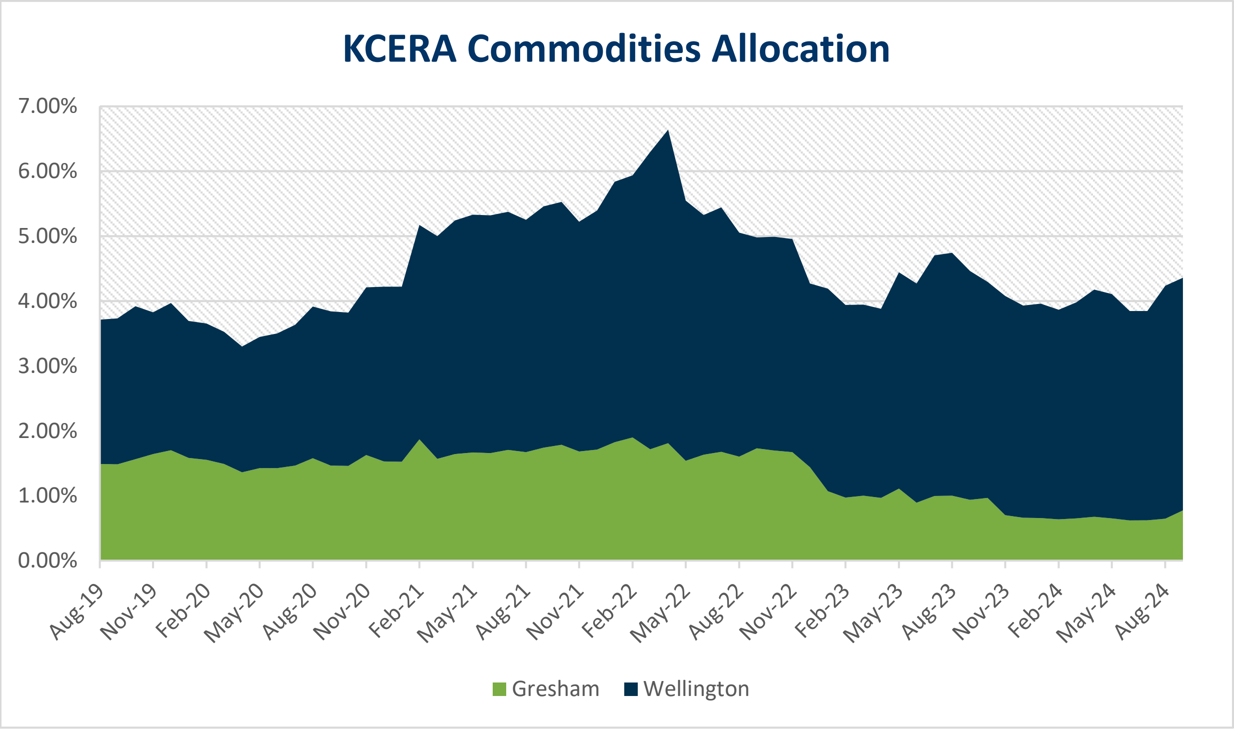


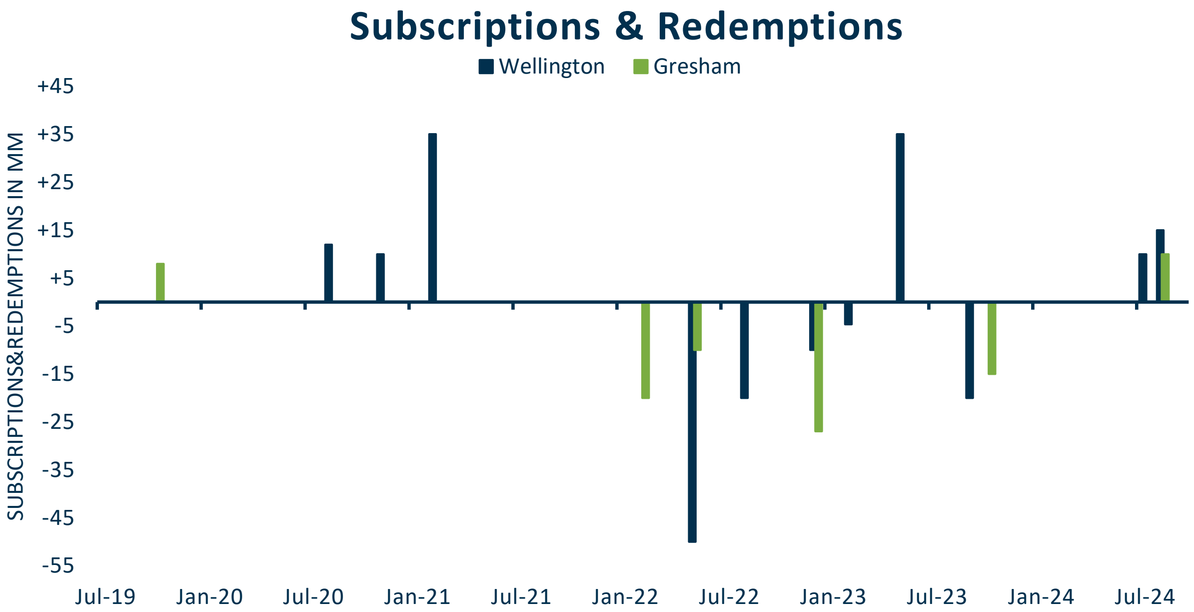


Note: Returns are based on a 5 –year annualized basis, from August 2019 to September 2024.

KCERA's Commodities Portfolio

- Commodities have been part of the KCERA Total Portfolio since 2013.
- Staff has tactically shifted the KCERA commodities exposure over time to capitalize on short-to-intermediate-term opportunities.
- The Wellington allocation has been the majority of the KCERA Commodities portfolio, reflecting staff's conviction among the two strategies.

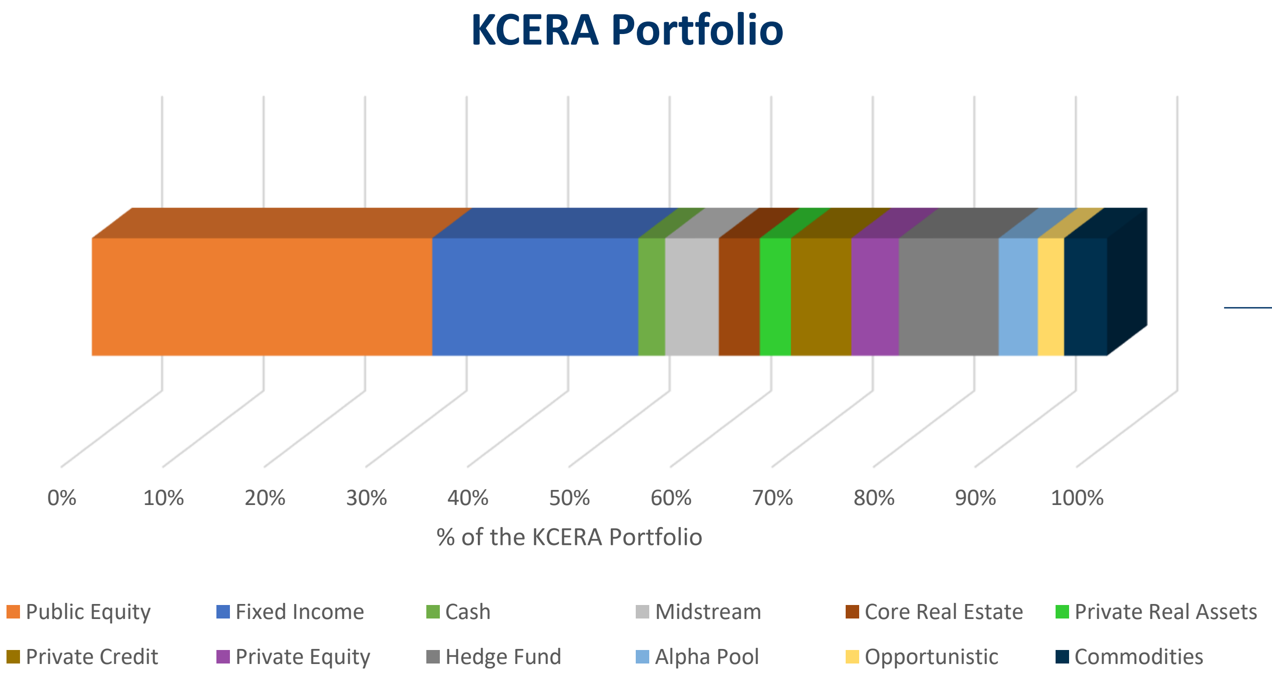


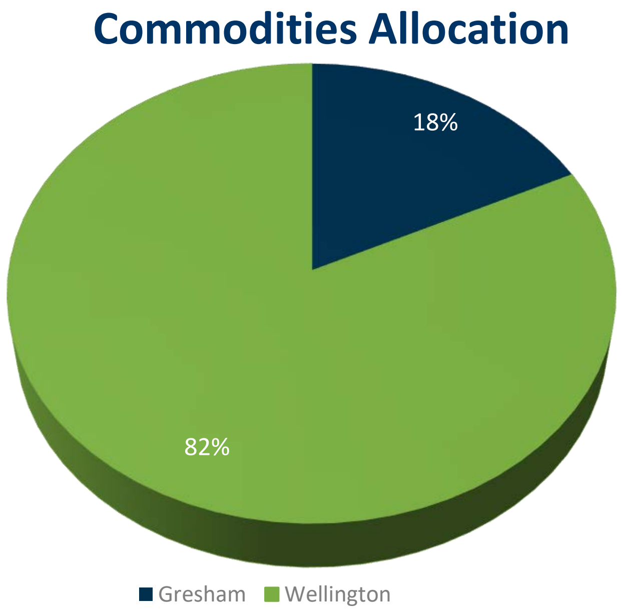


Note: Analysis was conducted from August 2019 to September 2024.

KCERA's Commodities Portfolio Cont.,

- KCERA Strategic Asset Allocation targets a 4% Commodities allocation.
  - As of November 2024, the commodities allocation is inline with the policy target
- The portfolio has historically been overweighted to Wellington.
  - Allocation as of November 2024, 82% to Wellington and 18% to Gresham





Performance

- Performance has been solid over the past 5-years. Both managers exceeded their benchmarks with volatilities below or close to inline with their benchmark. The overall Commodities Portfolio exceeded the policy benchmark.
- Both managers generated healthy information ratios (IR).
  - Gresham – IR (0.85) is a function of lower tracking error (3.03%) and lower excess return (+2.57%). Gresham has underperformed Wellington regarding excess returns.
  - Wellington – IR vs BCOM (0.85) is a function of higher tracking error (6.74%) and higher excess return (+5.75%). Despite the higher tracking error, Wellington's excess return was generated with lower volatility than Gresham. Wellington's IR relative to the S&P GSCI declines to 0.52, a function of higher tracking error (7.75%) and lower excess return (+4.00%).
  - Information ratio (IR) is a measure of excess return for risk taken (IR = Excess Return / Tracking Error)
- The overall KCERA Commodities portfolio IR generated a strong IR of 0.98

	Wellington	S&P GSCI (benchmark)	BCOM (benchmark)	Gresham	BCOM (benchmark)	KCERA Commodities	BCOM (benchmark)
5-Yr. Ann. Return	10.50%	6.50%	4.75%	7.32%	4.75%	9.72%	4.75%
3-Yr. Ann. Return	8.21%	-0.27%	-0.14%	5.38%	-0.14%	7.44%	-0.14%
YTD Ann. Return	11.60%	6.33%	2.29%	7.56%	2.29%	11.21%	2.29%
Ann. Return	11.60%	6.33%	2.29%	7.56%	2.29%	11.21%	2.29%
Volatility (5- year)	14.95%	18.86%	15.72%	16.03%	15.72%	15.01%	15.72%
TE (5- year)	7.75%			3.03%		5.09%	
TE (BCOM) (5- year)	6.74%			3.03%		5.09%	
ER (5- year)	4.00%			2.57%		4.97%	
ER (BCOM) (5- year)	5.75%			2.57%		4.97%	
IR (5- year)	0.52			0.85		0.98	
IR (BCOM) (5- year)	0.85			0.85		0.98	

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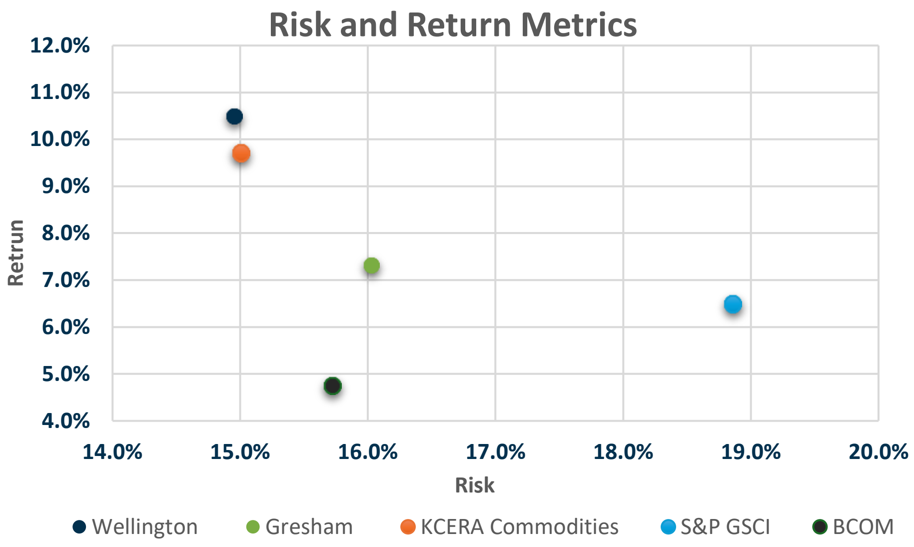
Performance, Cont.

- The chart below shows total return and risk (volatility)
- The KCERA Commodities portfolio (orange dot) tracks very closely to the Wellington strategy, for two reasons 1) the relatively large size of Wellington in the portfolio, and 2) the high correlation (i.e. limited diversification benefit) between the Wellington and Gresham strategies
- It is interesting to note that both the Wellington and Gresham portfolios have stronger risk adjusted returns relative to the S&P GSCI and BCOM indices, as evidenced by dots that are in the upper left quadrant



Note: The analysis was conducted on the 5- year monthly returns for each asset.

Performance, Cont.

- Over the past 5-years, both managers have added value, but the benefit to the Commodities portfolio from Gresham is limited
- Assessing the performance since inception reveals that Gresham has been a drag on performance with a negative excess return of -0.21% on an annualized basis
- Both managers outperformed their respective benchmarks and the policy benchmark, however, the drag effect of Gresham depicts the limited benefit of the strategy.

Year	Wellington	Gresham MTAP
2013	-5.44%	-2.93%
2014	-14.67%	-16.14%
2015	-26.28%	-25.13%
2016	14.81%	12.55%
2017	9.15%	7.04%
2018	-12.28%	-12.78%
2019	12.50%	8.39%
2020	5.87%	-1.93%
2021	24.72%	25.20%
2022	10.00%	16.78%
2023	2.45%	-7.93%
2024	8.77%	5.62%
ITD Returns	**19.05%**	**-3.21%**
Annualized Return	**1.59%**	**-0.29%**

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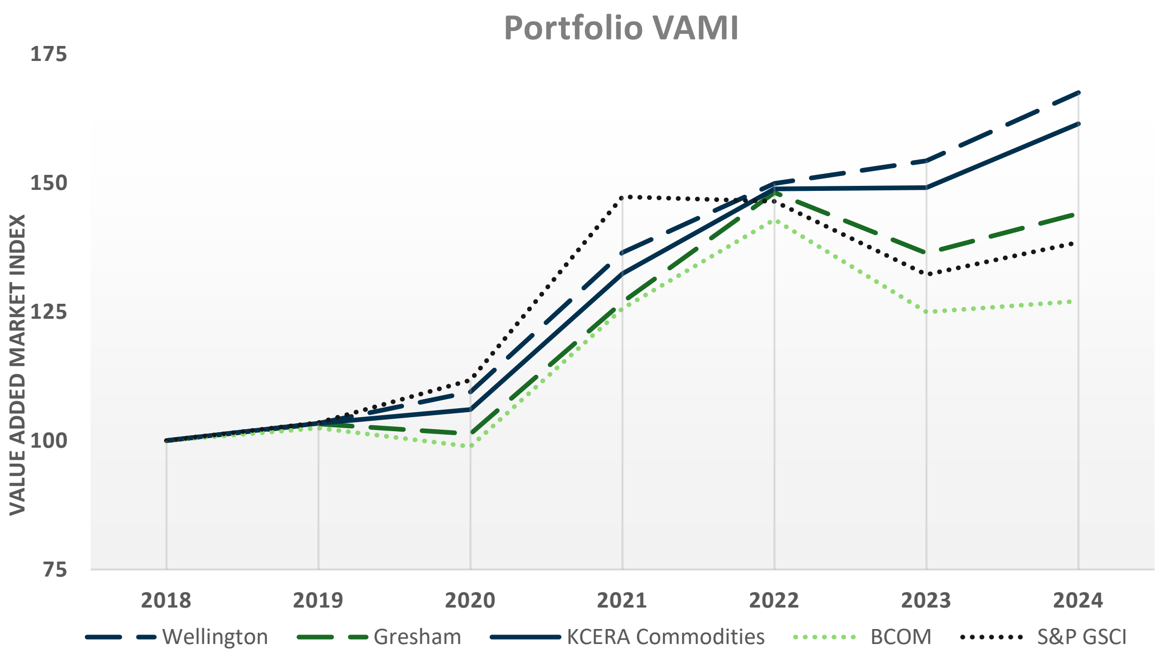
Considerations

- Wellington has show better performance and with lower volatility than Gresham
- Gresham has a high correlation to Wellington, offering limited diversification benefits.
- Staff recommends a reducing the Gresham allocation and adding an asset like California Carbon Allowances (CCAs) which can have improved return profile and higher diversification benefits.



Correlation of Gross Returns

	Wellington	Gresham	**KCERA Commodities**	BCOM	S&P GSCI
Wellington	1.00				
Gresham	0.92	1.00			
KCERA Commodities	**0.99**	**0.96**	**1.00**		
BCOM	0.90	0.98	0.95	1.00	
S&P GSCI	0.92	0.83	0.91	0.82	1.00

Note: The analysis was conducted on the 5- year monthly returns for each asset.

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California Carbon Allowances

Presented by:

Daryn Miller, CFA
Chief Investment Officer
Melekte Yohannes
Investment Analyst

December 2024

Contents

- Executive Summary
- What is a Carbon Allowance
- Program mechanism
- History of CCA
- Local covered entities
- Why Carbon
- Carbon in the portfolio
- Risks & Mitigants
- Conclusion

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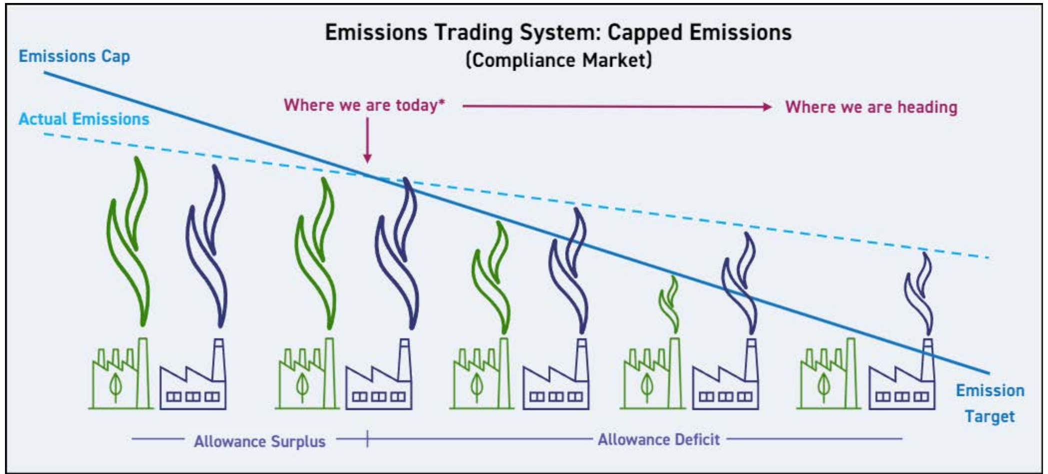
Executive Summary

- KCERA's California Carbon Allowances (CCA) thesis is embedded in the following:
  - The CCA program shrinking supply of carbon allowances (reduced supply).
  - California implements floor and ceiling mechanisms to ensure the integrity and security of the market.
    - Limits downside risk for market participants
  - We believe the CCA program has solid political tailwinds
- CCAs would be a diversifier to the KCERA Commodities portfolio.
- CCAs have a strong return potential with a potential 5-year annualized return of 16%.

What is a "Carbon Allowance"?

- Program designed to mitigate greenhouse gas (GHG) emissions via a market mechanism by creating a negative price impact on carbon, through a tradable permit called an allowance. The allowance grants firms the ability to emit a metric ton of carbon.
  - The CCA program is administered by California Air Resources Board (CARB)
  - Allowances are issued through a primary market and can be traded on the secondary market.
    - Primary market – Quarterly auctions
    - Secondary market – physical trading through facilitators (limited liquidity) and futures market (ICE)
  - Emission levels are measured relative to 1990 levels
- The program covers approximately 400 entities translating to 76% of the state's GHG Emissions. Covered entities and sectors are expected to grow, which will expand the total emissions covered by the program.



Program Mechanism

- California Air Resources Board (CARB) administers quarterly auctions, primary market mechanism.
  - 1 allowance = 1 metric ton of CO_2
    - Market participants are subject to a holding limit (10M allowances or approximately $350M dollars)
  - Vintages do not expire, past vintages can be utilized in the current or future year
  - Entitles must have a Compliance Instrument Tracking System Service (CITSS) account to hold physical CCAs
- Entities can also purchase allowances on the futures market.
  - Futures that expire are delivered physically—must have CITSS account
- CARB requires Mandatory Reporting of Greenhouse Gas Emissions (MRR) for covered entities.
  - Mandatory reporting is usually done in the second quarter of each year.
  - CARB also has an enforcement division which ensures compliance

California Carbon Allowance History

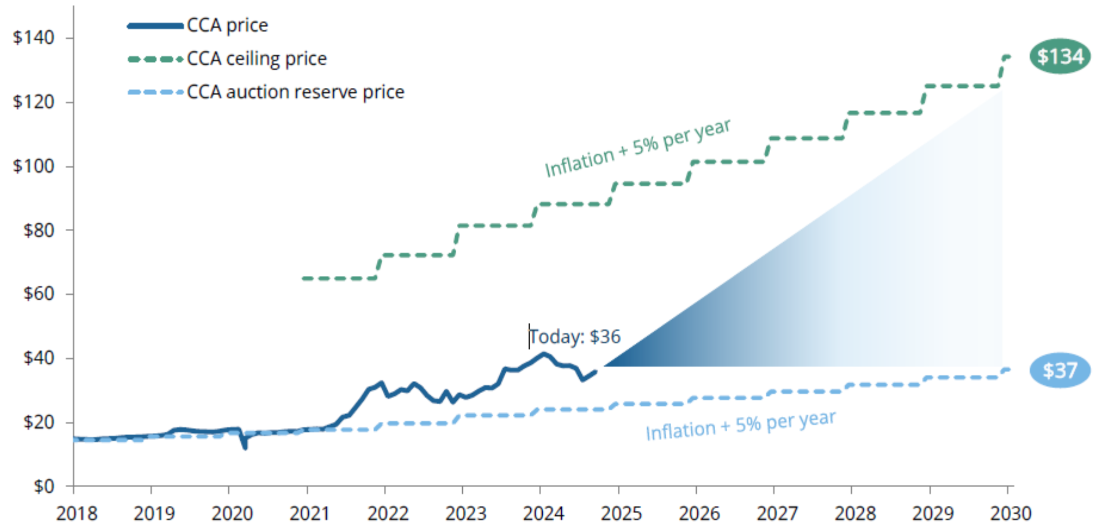
- A compliance program was launched in 2012 by California Air Resources Board (CARB) to mitigate carbon emission through a compliance market.
- CARB conducts periodic reassessment to further limit carbon emissions by increasing the covered entities or decreasing the total amount of future allowances available.
- Compliance phases:
  - 1st compliance phase (2012-2014) ~ 2% decline in emissions annually
  - 2nd compliance phase (2015- 2017) ~ 3.1% decline in emissions annually
  - 3rd compliance phase (2018 – 2020) ~ 3.3% decline in emissions annually
  - 4th compliance phase (2021 – 2023) ~ 4% decline in emissions annually
  - 5th compliance phase (2024-2026) ~ 4% decline in emissions annually
    - Final figures are not available for the 5th compliance phase

Source: UC Davis, California Air Resources Board Workshop November 2023

Why CCAs

- The inclusion of CCAs in the KCERA commodities portfolio would be consistent with the primary objectives of the commodities allocation.
- Return generation -- Carbon is expected to provide solid returns through price appreciation
  - Bullish scenario: 5- year annualized return is +16%
  - Neutral scenario: 5- year annualized return is +7.5%
  - Bearish scenario: 5- year annualized return is -0.4%
- Diversification – CCAs have a low correlation with traditional asset classes as well as the current commodities portfolio.
- Inflation hedge – CCAs have a mechanism to increase floor and ceiling prices at the rate of inflation.

CCA prices vs. auction reserve and ceiling



CCAs in the portfolio

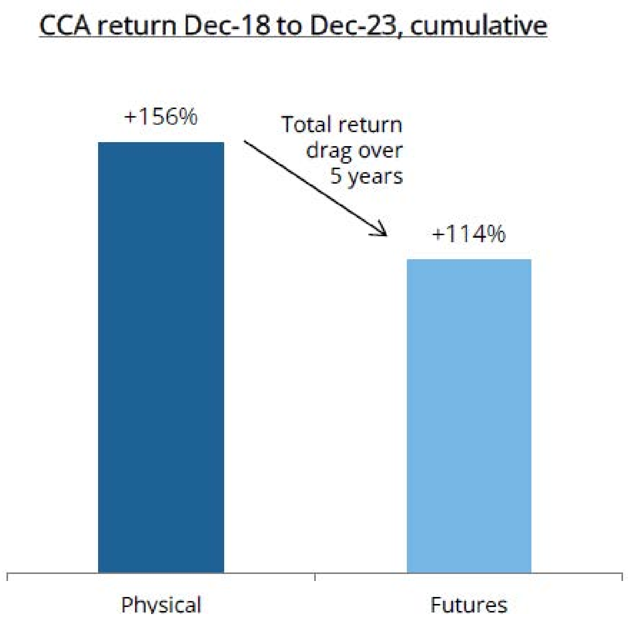
- Staff is considering the addition of CCAs to the Commodities portfolio, funded by Gresham allocation.
  - California Carbon allowances have a thematic tailwind – Global decarbonization
  - CARB has implemented a floor mechanism which increases annually to ensure the continued sustainability of the market.
    - Floor is annually adjusted at a rate of CPI plus a 5% escalator.
    - Limiting downside risk
  - Uncorrelated with traditional assets classes as well as the existing KCERA Commodities portfolio
    - Diversifier to the KCERA Commodities portfolio

Correlation Gross Returns	CCAF (Physicals)	KCCA (Futures)	KCERA Commodities	Gresham -- (KCERA)	Wellington -- (KCERA)	S&P GSCI	BCOM
CCAF (Physicals)	1.00						
KCCA (Futures)	0.92	1.00					
KCERA Commodities	0.17	0.15	1.00				
Gresham -- (KCERA)	0.05	0.03	0.92	1.00			
Wellington -- (KCERA)	0.19	0.17	0.99	0.87	1.00		
S&P GSCI	0.26	0.22	0.84	0.79	0.83	1.00	
BCOM	0.08	0.02	0.92	0.97	0.87	0.77	1.00

1. *Analysis period for the Correlation of Gross Returns is from July 2021 to July 2024, the analysis period was chosen due to the inception of the earliest physicals CCA Fund, CCAF.*
2. *Current KCERA Commodities allocation consists of Wellington and Gresham.*
3. *Bloomberg Commodities Index (BCOM) is the benchmark for the KCERA Commodities portfolio and Gresham*
4. *S&P Goldman Sachs Commodities Index (S&P GSCI) Equal weight is the benchmark for Wellington*
5. *Data was sourced from respective managers and data vendors.*

CCAs in the portfolio, cont.

- Staff believes physical CCA exposure, has benefits over CCA futures
  - Physicals – Less liquid than the future market, however, more return upside.
  - Futures – Liquid but negative roll yield with holding CCA futures, dragging down returns.
- Staff has held a number of conversations with investments managers that run CCA portfolios (both physical CCAs and futures)
  - Staff has identified 8 CCA managers
  - Staff has distilled the investment universe down to a finalist group
  - Verus is supporting staff with the investment and operational due diligence



Risks

- Political risk
  - The CCA program was created via State legislation, and exists as a mechanism to reduce carbon emissions
  - At the State level, legislative and/or regulatory changes could have material negative impacts on the program
    - We believe the political environment at the State level is tailwind for CCAs
  - There is potential risk at the Federal level, especially give the outcome of the Presidential election and the new Administrations
    - The Trump Administration unsuccessfully came after the program in 2019.
    - The program falls within the State's authority and is likely not at risk from the new Administration
  - Delays in CARB rule making process and supply reduction, could create near-term risk and increase CCA price volatility
    - Near-term volatility, should not impact long-term returns
  - Concerns around program extension beyond 2030; program expiration is currently set for December 31, 2030.
    - California state legislature has a favorable view of the program
- Volatility
  - CCAs have exhibited a higher volatility than the Commodities index and KCERA's Commodities managers.
    - We believe the return expectations, and the distribution of potential outcomes, provides for an attractive risk adjusted returns
    - In addition, the diversification benefit of CCAs improves the overall risk and return characteristics of the Commodities portfolio

Source: UC Davis, California Air Resources Board

Conclusion

- Staff believes that CCAs fit within the IPS goals of the Commodities allocation.
- In addition, the return potential, limited downside, and diversification benefit of CCAs present a compelling risk and return profile which would likely be additive to the KCERA portfolio.

KERN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

Currency Management

Presented by:

Daryn Miller, CFA

Chief Investment Officer

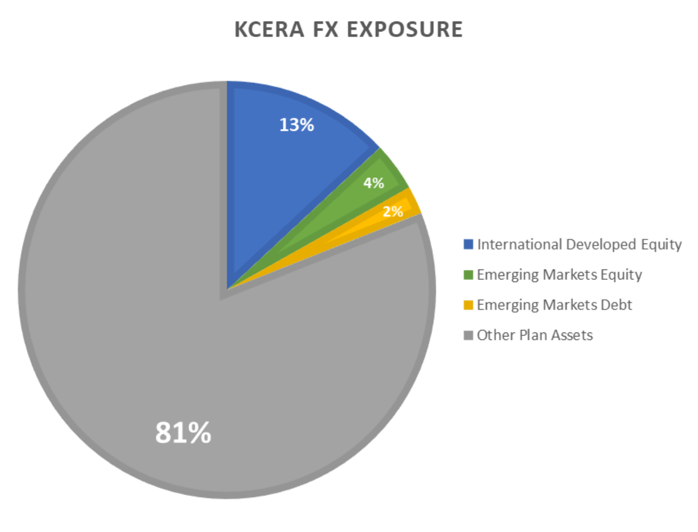
Rafael A. Jimenez, CFA

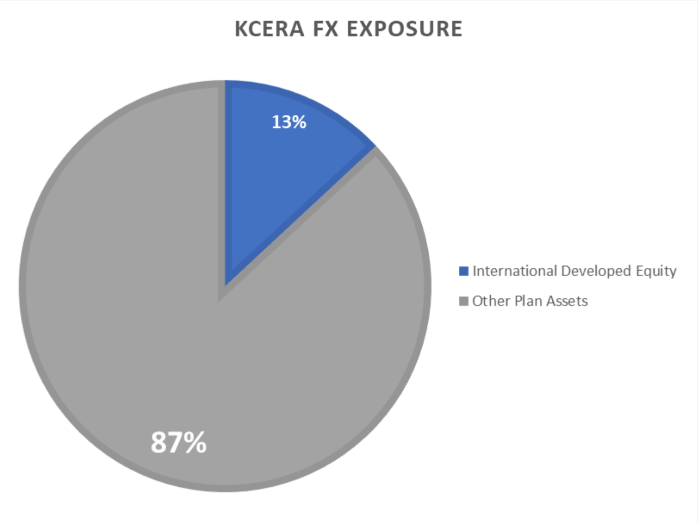
Senior Investment Analyst

December 2024

KCERA Foreign Currency (FX) Exposure

How much FX exposure is in the KCERA Portfolio?





- As of September 30th, 2024, 19.0% of the KCERA Portfolio's assets were denominated in a foreign currency
  - International Developed Equity 13.1%
  - Emerging Markets Equity 3.8%
  - Emerging Markets Debt* 2.1%
- The return of these asset classes can be separated into the return earned on foreign securities and the return of the foreign currency relative to the US Dollar (USD)
- Fixed Income managers tend to form an assessment on FX and incorporate their view into investment decisions
  - The managers in the Emerging Markets Debt Portfolio select the currencies they want exposure to
  - As part of the broader Fixed Income reconstitution, the KCERA Portfolio will move to *hard currency* EM Debt exposure denominated in USD
- Equity managers tend to be agnostic to FX and do not incorporate a view into investment decisions under the premise that over a long-term horizon, FX is not expected to add or detract from performance

**As of September 30th, 2024*

KCERA Foreign Currency (FX) Exposure, cont.

How much FX volatility is the Plan's International Developed Equity Portfolio exposed to?
What benchmark is representative of the exposure?

- As of September 30th, 2024, the Market Value of the International Developed Equity Portfolio was $797M and represents 13.1% of Total Plan Assets
- The MSCI World ex-US Index can be used to represent the Plan's FX exposure
    - The Plan maintains an **overweight** to the Japanese Yen because of the dedicated Japanese Equity mandates
- The Plan's risk from FX exposure, using the MSCI World ex-US Index as a proxy, is 7.17% at the International Developed Equity Level and 0.94% at the Total Plan Level

	Currency	MSCI World ex-US Currency Exposures (%)	Individual Currency Risk (%)
EUR	Euro	29.87%	6.26%
JPY	Japanese Yen	19.90%	9.92%
GBP	British Pound	13.14%	6.69%
CAD	Canadian Dollar	10.91%	4.92%
CHF	Swiss Franc	8.81%	6.25%
AUD	Australian Dollar	6.91%	8.99%
DKK	Danish Krone	2.99%	7.06%
SEK	Swedish Krona	2.99%	9.52%
HKD	Hong Kong Dollar	1.82%	0.84%
SGD	Singpaore Dollar	1.31%	5.60%
ILS	Israeli Shekel	0.69%	11.75%
NOK	Norwegian Krone	0.51%	10.59%
NZD	New Zealand Dollar	0.16%	9.68%
	Total		**7.17%**

Volatility as of September 30th, 2024
Individual Currency Risk based on one-month implied volatility
Sources: MSCI and Record Financial Group

History of KCERA Currency Management

Has the Plan previously had exposure to FX management?

The Clifton Group

- KCERA maintained an asset allocation overlay program with *The Clifton Group* between 2001 and 2008
  - The program included exposure to MSCI EAFE through local market futures, which required holding local currencies to replicate the unhedged exposure to the index
- The program was terminated following the market volatility that followed the Global Financial Crisis
  - At that time, KCERA had been subject to frequent margin calls to rebalance exposures as required by the Plan's policy targets

BlackRock International Alpha Tilts

- KCERA held an investment in the *BlackRock International Alpha Tilts* product between 2003 and 2021
  - The manager formed a part of the International Developed Equity portfolio and represented approximately 40% of the International Developed allocation at the time of termination
- International Alpha Tilts is classified as a systematic active strategy that seeks to generate excess return through stock selection, country allocation, and **direct incorporation of currency management**
- The currency component of the strategy involved a US Dollar-agnostic long-short portfolio of Developed Market G10 currencies
  - The sole objective was the generation of alpha and there was no consideration for risk reduction or the US Dollar as a base currency
  - The manager relied on carry, value, and trend signals to determine positioning
- The currency management element of the mandate was eliminated in 2016 on the basis that it was not additive to return

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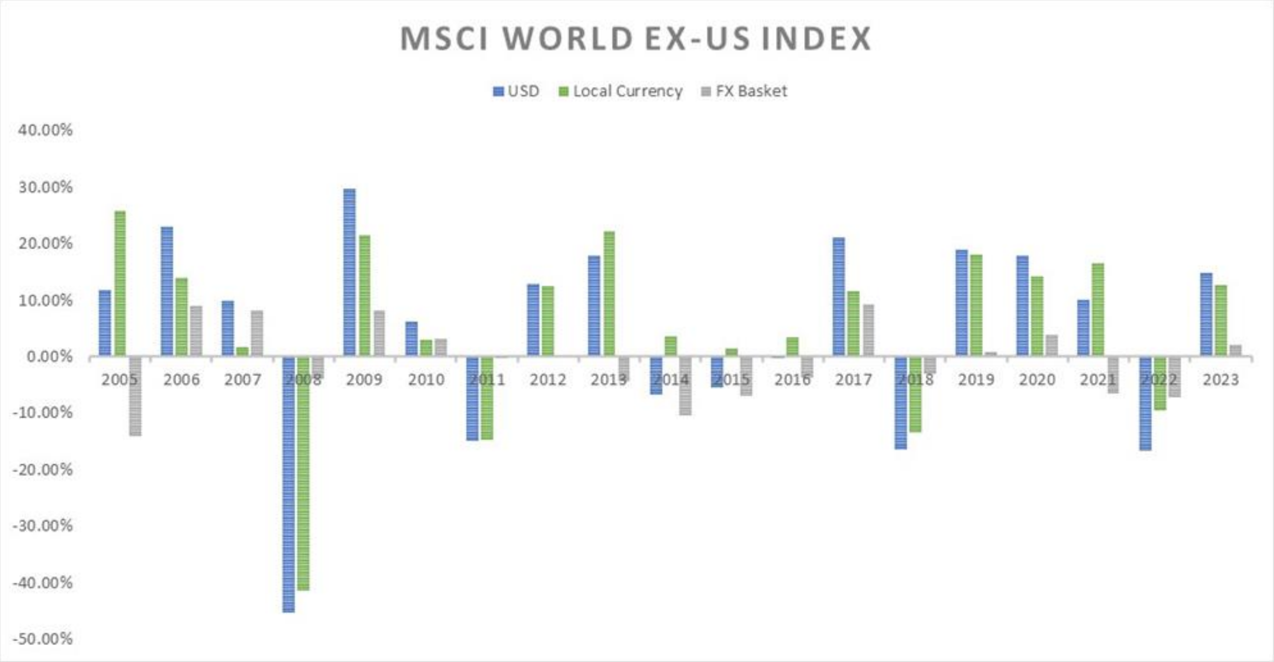
Currency Management

Historical Performance of Equity Market Return in Local Currency Index and USD Index

January 2005 - June 2024	World ex-US, USD	World ex-US, Local Curr.	FX Basket
Annualized Return	**2.33%**	**3.60%**	**-1.28%**
Cumulative Return	**56.59%**	**99.40%**	**-42.81%**
Annualized Standard Deviation	**16.89%**	**13.44%**	**6.85%**
Return Per Unit of Risk	**0.14**	**0.27**	**-0.19**

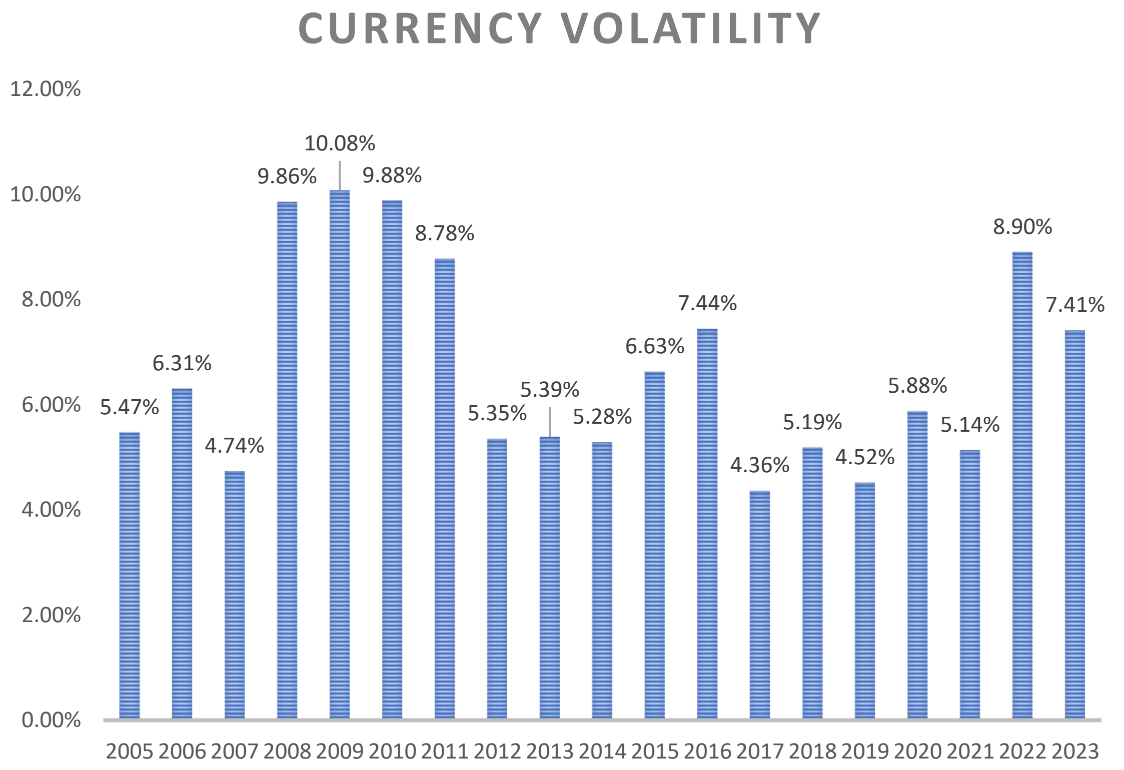


- The volatility of the index in USD, as measured by standard deviation, is *less than* the aggregate volatility of the local currency index + the FX Basket
- The return of the embedded currency portfolio is **not** perfectly correlated with the return of the index in local currency terms
  - The embedded currency portfolio provides investors with a degree of diversification

Currency Management, cont.

Historical Volatility of *Embedded Currency Portfolio*

- Over a long-term investment horizon, the expected return of the embedded currency portfolio is 0
- Between 2005 – 2023, the annual return of the FX basket inherent in the MSCI World ex-US Index ranged between **-13.9%** and **9.3%**
- FX exposure is an *uncompensated risk* because it is a source of volatility and has a long-term expected return of 0



Annual volatility of FX Basket in MSCI World ex-US Index measured by Standard Deviation

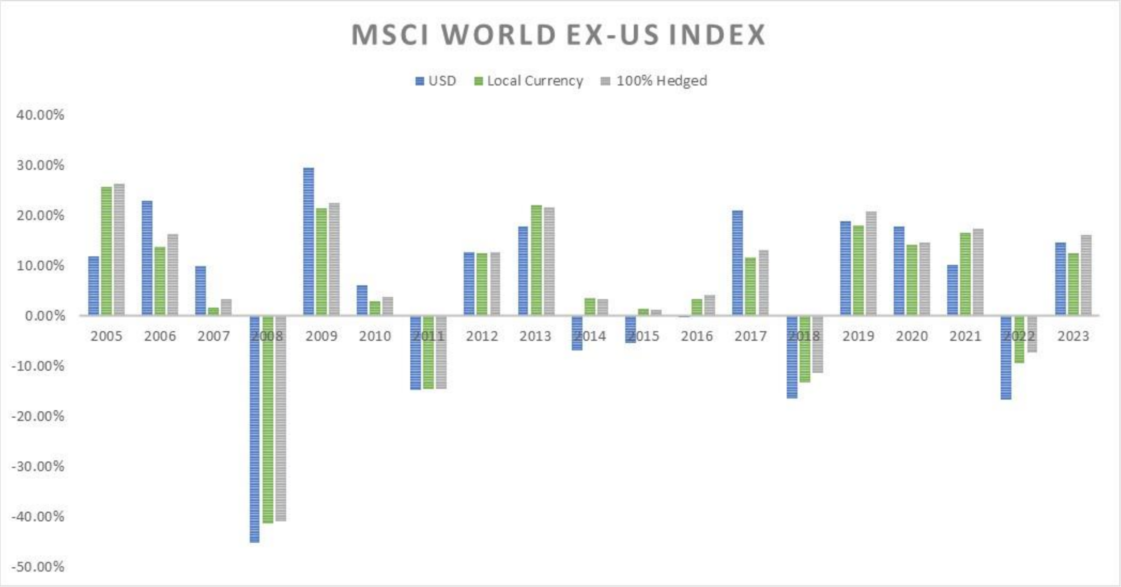
Should FX Exposure by Managed?

The difference between the return in Local Currency and the 100% Hedged Portfolio is the carry benefit as the US Dollar has historically had higher interest rates.

If there was no interest rate differential, the return in Local Currency and the 100% Hedged Portfolio would be equal.

- An investment manager can be used to separate R_{FC} (the return equity managers earn on foreign securities) and R_{FX} (the foreign currency return relative to USD)
  - The equity manager and currency manager can each focus on their area of expertise
- In periods of a strengthening US Dollar, hedging foreign currency exposure can be additive
  - Staff has evaluated both *passive* and *active* approaches to currency management
- A currency management program can be structured to achieve the following objectives simultaneously:
  - Taking purposeful currency risk
  - Generating an incremental return

January 2005 - June 2024	World ex-US, USD	World ex-US, Local Curr.	World ex-US, **100% Hedged**
Annualized Return	2.33%	3.60%	**4.77%**
Cumulative Return	56.59%	99.40%	**148.05%**
Annualized Standard Deviation	16.89%	13.44%	**13.36%**
Return Per Unit of Risk	0.14	0.27	**0.36**

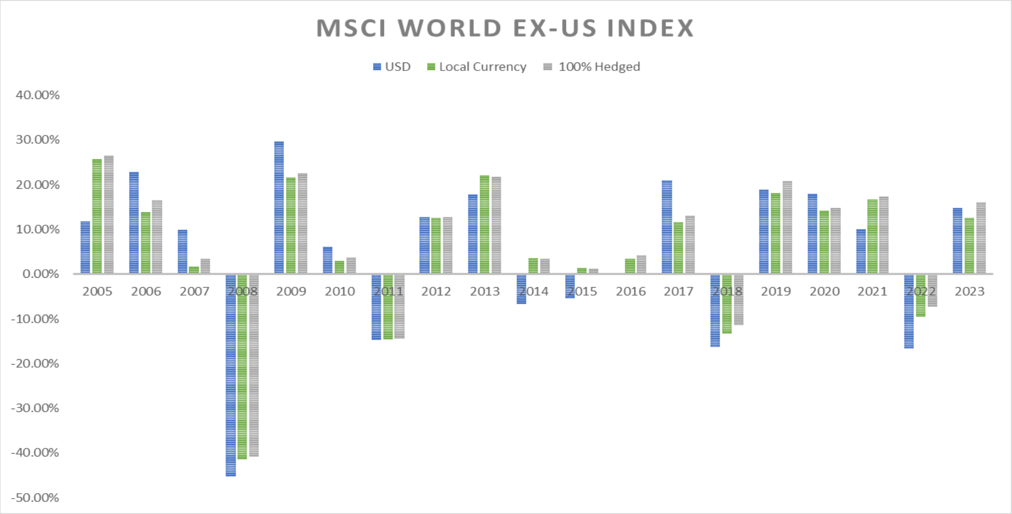


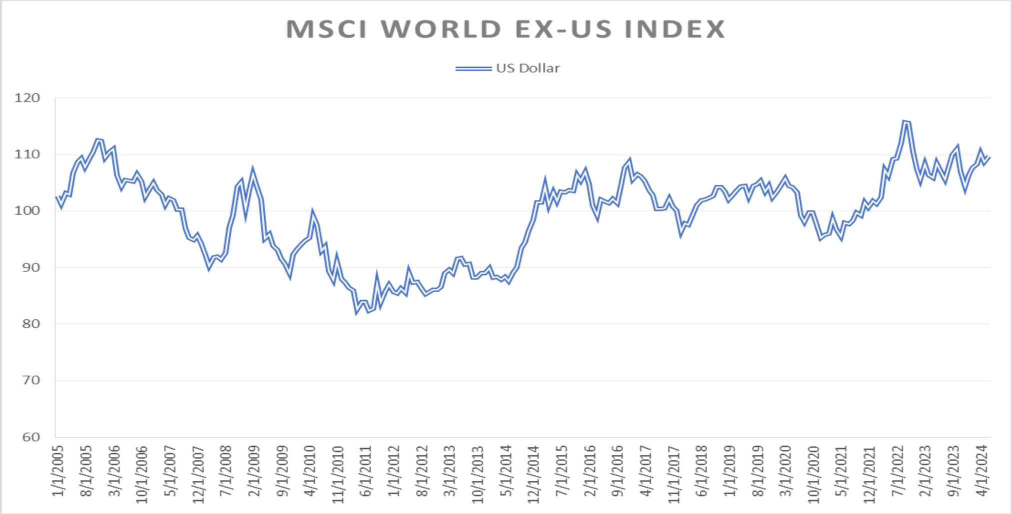
Active vs Passive Approach to Currency Management

What approach best achieves the Plan's objectives?

- As illustrated on the previous slide, the 100% *passive* hedge reduced aggregate volatility and generated a greater return than the index denominated in USD
  - The objectives were achieved over a long-term investment horizon
  - The relative performance of the passive hedge can be attributed to the strengthening US Dollar over the time horizon

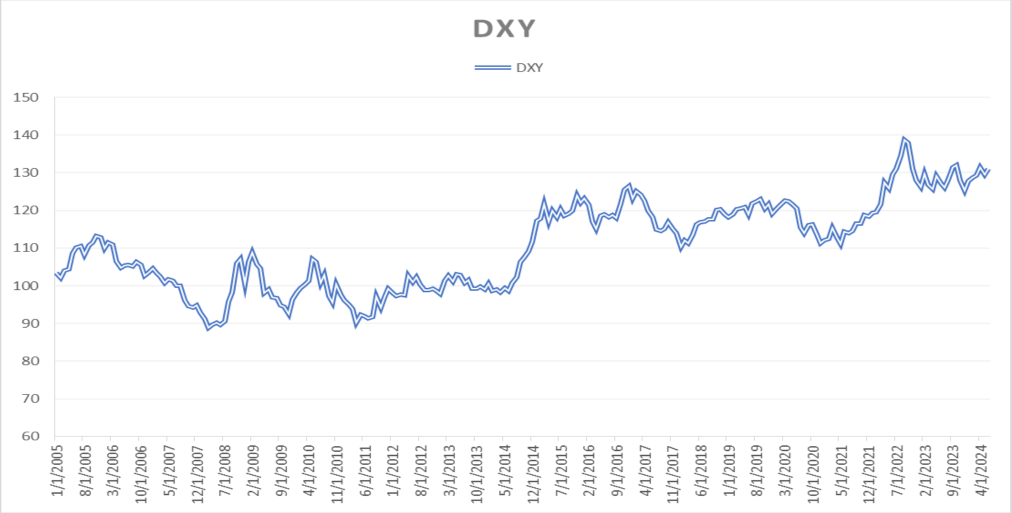
- However, the USD can also experience bouts of weakness
- **What happens in a period of USD weakness?**
  - A passive approach will not be able to benefit from foreign currency appreciation
- An approach that can be additive in periods of US Dollar strength and weakness is better positioned to achieve the Plan's objectives in a **consistent** and **repeatable** manner

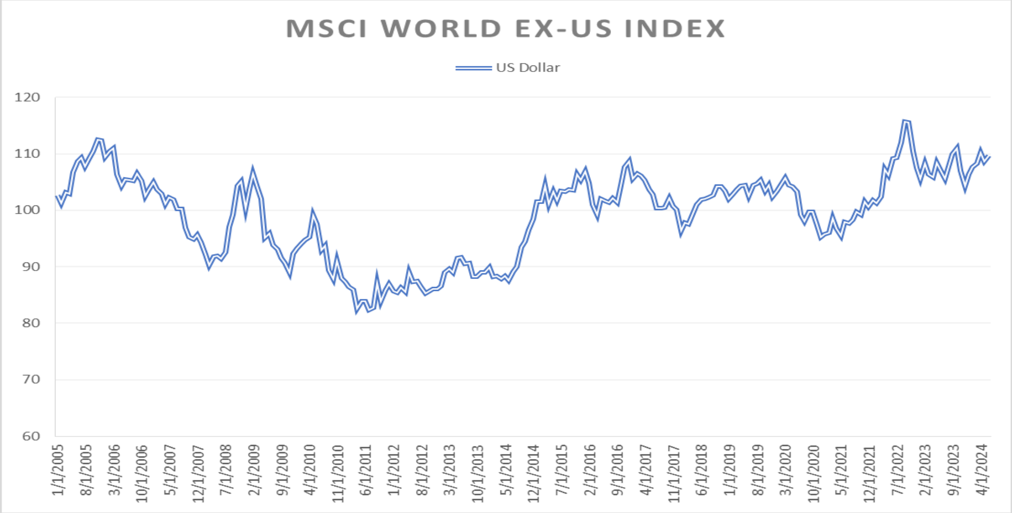


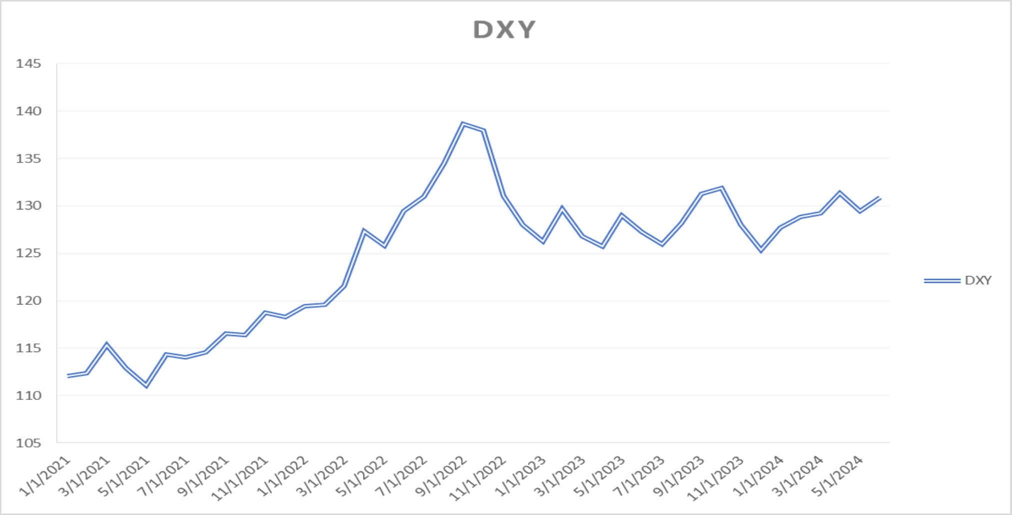


Historical Strength of the US Dollar

Can investors identify the potential drivers of strength and weakness?







- The Dollar experienced notable appreciation during the COVID-19 pandemic due to its role as a safe-haven asset and in 2022 as the Fed embarked on its rate-hiking regime to combat domestic inflation
- The Dollar weakened heading into 2023 on the expectation for a series of Fed rate cuts to support an anticipated faltering US economy
- Dollar volatility has been driven by the outlook for global growth and monetary policy differentiation between central banks

The US Dollar Index (DXY) measures the value of USD relative to a basket of developed market currencies

- DXY has a greater weight in EUR than MSCI World ex-US

Historical Strength of the US Dollar, cont.

What drives the value of a currency and determines exchange rates?

- The value of a currency is driven by **supply** and **demand**

- Equilibrium is driven by global differences in:
  - **Interest Rates** > Currencies of countries with higher interest rates tend to increase in value because assets denominated in that currency will offer a higher expected return
  - **Capital Flow** > Capital flow represents a large portion of the demand for a currency
    - Capital inflow has the potential to appreciate currency; capital outflow has the potential to depreciate a currency
    - Capital flows are influenced by the demand for a country's goods, such as commodities and financial securities
  - **Inflation** > High inflation increases the cost of local goods and erodes the purchasing power of a currency
    - Countries that experience higher inflation, or that are expected to, may experience depreciation in currency value

- The result of these economic dynamics is the determination of a **foreign exchange rate**
  - Currency markets are inefficient
  - A fundamental equilibrium can be measured, and deviations can be exploited to add incremental value

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Historical Strength of the US Dollar, cont.

What factors can help explain the relative performance of currencies?

- Academic research suggests that there are 3 primary factors which could explain a large portion of a currency's return:

A **Factor** is an investment characteristic with which asset risk and return is correlated

1. **Carry:** This is based on empirical evidence that currencies of countries with higher interest rates tend to appreciate against currencies of countries with lower interest rates. This relationship is known as the *forward rate bias* and involves buying a high-interest rate currency and selling a low-interest rate currency.

2. **Value:** This is based on the economic principle of the Law of One Price or *Purchasing Power Parity*, which states that the cost of a basket of goods in one country should be identical to the cost in another country as determined by the exchange rate. Over a shorter-term horizon, currencies may deviate from their long-term equilibrium rate.

3. **Trend:** This is based on empirical evidence that suggests that past returns can be useful in predicting future returns, also know as momentum. This factor is technical and is based on the belief that the winners of the past will be the winners of the future.

- Currency managers can gather insight from these factors and use them as signals to inform their investment process and determine an *optimal* amount of hedging

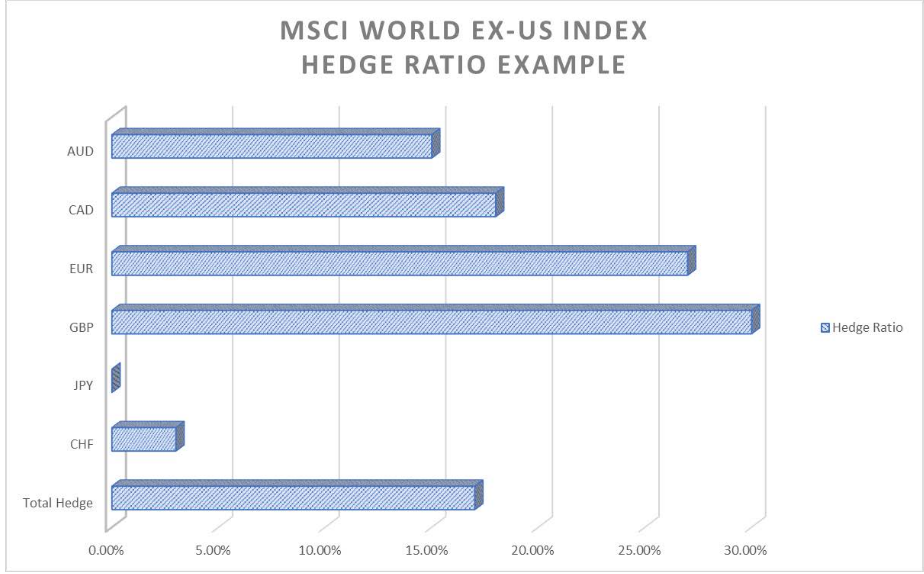
Constructing a Currency Management Program

What is a Hedge Ratio?

- The outcome of a currency manager's investment process is the determination of a **Hedge Ratio**
  - The Hedge Ratio can range between 0 – 100% and measures the proportion of a portfolio's currency exposure that is hedged to achieve the investor's objective
  - The aggregate portfolio Hedge Ratio is the weighted sum of the Hedge Ratio of each individual currency

- Currencies with shared characteristics can be expected to have similar Hedge Ratios
  - AUD & CAD: The Australian Dollar and Canadian Dollar are currencies with significant exposure to commodities.
  - EUR & GBP: The Euro and British Pound are considered risk-on currencies that perform well when market sentiment is optimistic. These currencies are linked to countries with robust economies that benefit from increased investor confidence and economic growth.
  - USD, JPY, & CHF: The US Dollar, Japanese Yen, and Swiss Franc are considered risk-off or "safe haven" currencies that may appreciate during times of market uncertainty or economic downturns. These currencies are considered more stable and less volatile.

- The *Hedge Ratio Example* would potentially suggest that market sentiment is weak
  - The program is hedging exposures to EUR & GBP to provide downside protection from the currencies depreciating
  - Exposures to JPY & CHF are left unhedged to benefit from expected currency appreciation in a risk-off market environment



The bar chart above is based on the currencies in the MSCI World ex-US Index and their respective weights. The currencies in the example comprise approximately 90% of the index and the aggregate portfolio hedge ratio is scaled accordingly. To be mindful of tracking error, currency managers can be expected to participate primarily in the hedging of these currencies.

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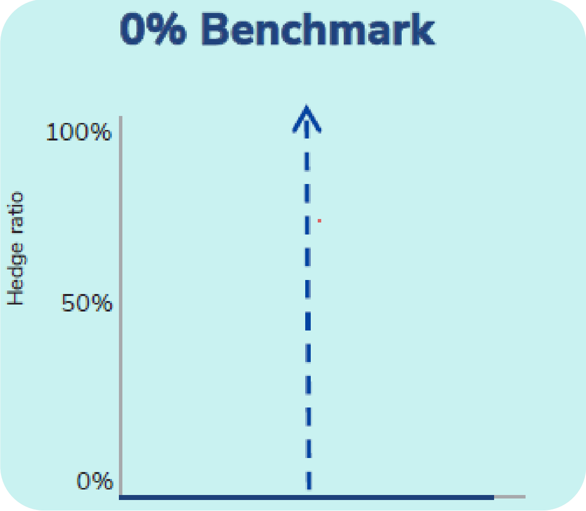
Constructing a Currency Management Program, cont.

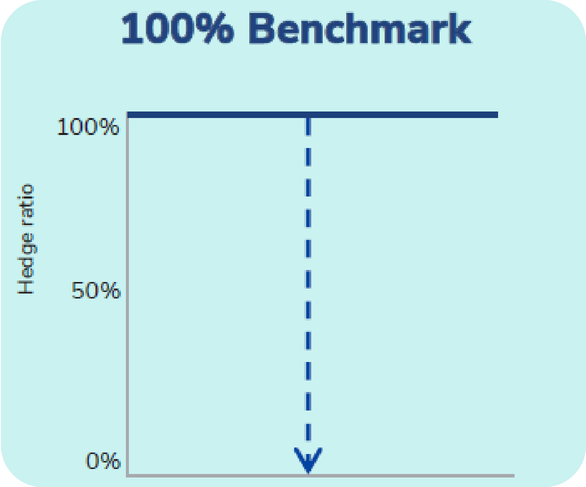
What are the considerations for determining a suitable Hedge Ratio Benchmark?

- The **Hedge Ratio Benchmark** should be determined in consideration of the program's objectives
  - Taking purposeful currency risk
  - Generating an incremental return
- The Hedge Ratio Benchmark serves as a starting point around which a currency manager can make active decisions to add value
- The 100% passive hedge accomplishes the goal of risk reduction but the ability to generate an incremental return is constrained because **the hedge limits participation in potential FX appreciation**

- A **Dynamic** Hedge Ratio Benchmark gives a currency manager the latitude to simultaneously meet both objectives
- This approach is designed to adjust the hedge ratio through time, with the goal of providing downside protection while allowing for upside participation



- The **0% Benchmark** starts with unhedged exposure and increases the hedge ratio during periods of expected local currency weakness
- The starting point is allowing for upside participation
  - The manager can provide downside protection by hedging currencies expected to depreciate

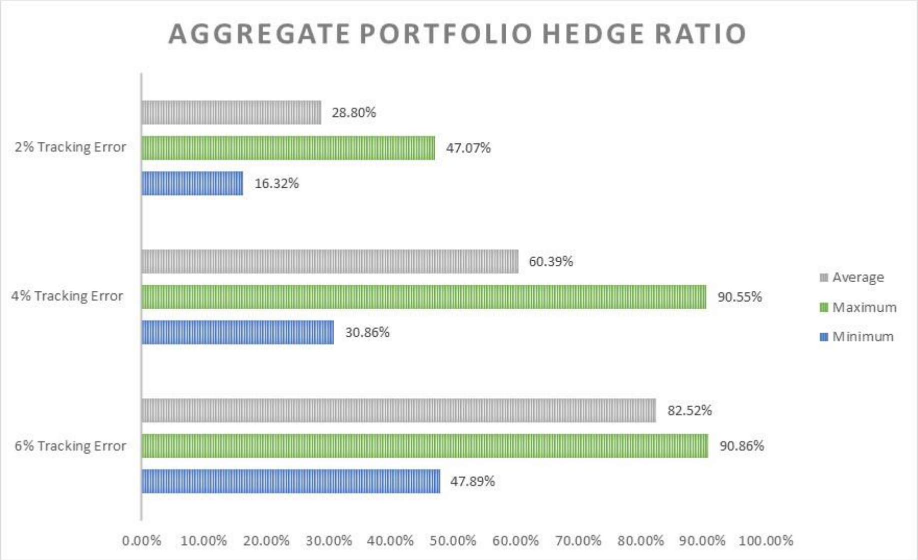


- The **100% Benchmark** starts with hedged exposure and reduces the hedge ratio in anticipation of local currency strength
- The starting point is providing downside protection
  - The manager can participate in upside appreciation by reducing the hedge ratio for currencies expected to appreciate

Constructing a Currency Management Program, cont.

How should an optimal level of tracking error be determined?
How should active risk be interpreted?

- Tracking Error is a measure of the difference in volatility between the return of the currency management program and the return of its benchmark
  - The level of tracking error dictates the amount of active risk that a currency manager can assume to meet the objectives of the program
  - The determination of a tracking error target is fundamental to the structure of a currency management program
- The optimal tracking error level should consider the Plan's objectives and should:
  - Ensure that risk-taking is judicious and reflects good judgement
  - Allow the manager to express their view with enough magnitude to be additive to return
- It is important for the tracking error target to be broad enough to not constrain the size of a hedge a manager would put on



- Currency Managers are mindful of the weight of underlying currencies in the benchmark when allocating the active risk budget. Investors can expect positioning in the **EUR**, **GBP**, and **JPY** to explain most a program's return.
  - Managers may not initiate positions in currencies that represent an immaterial part of the benchmark (e.g., >5%).

**Hedge Ratios based on the model output of a prospective manager between January 2014 and December 2023. The actual hedge ratios of a currency management program are dependent on the respective manager's investment process.*

Hedge Ratios in this exercise are constrained between 0–100%.

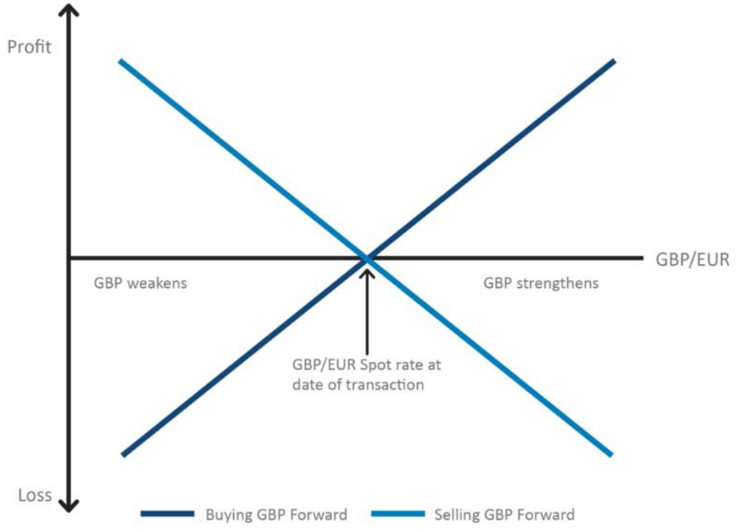
Implementation of a Currency Program

What financial instruments are used to implement a currency management program?
How do these instruments work?
What are the liquidity considerations for a currency management program?

- A Currency Forward is a contract in the foreign exchange (FX) market that locks in the exchange rate for the sale of a currency on a future date
  - A currency manager can take a position by selling FX in the forward market
  - This position conversely involves purchasing US Dollars in the spot market
- The forward contract locks in the exchange rate and protects against fluctuations in the market until the contract's maturity date

- The value of a Currency Forward fluctuates based on movement in the underlying exchange rate after the position is initiated
  - The position can be *marked-to-market* to determine if there is a profit or loss
  - Depreciation of the FX results on a profit; Appreciation results in a loss
- At maturity, a profit in the forward position results in a positive cash inflow and a loss results in a negative cash outflow

- The severity of adverse cash flow risk can be mitigated through:
  - Pursuing a laddered maturity structure in favor of a bullet structure
    - The notional amount is divided into three separate 3-month contracts that mature one month apart



The above example illustrates the profit & loss structure of a currency forward position (Euro as the base currency)
The position profits as the currency that is sold forward weakens and suffers losses as the foreign currency appreciates

KCERA Program Guidelines

Equity Exposure Benchmark:	MSCI World ex-US Index
Hedge Ratio Benchmark:	0%
Tracking Error Target:	4%
Forward Contract Maturity:	3-Month Laddered

Staff is conducting further diligence on prospective currency managers based on the parameters presented.

The prospective managers are currently managing a **live** paper portfolio that Staff is monitoring with the objective to better understand investment process, performance, drivers of return, and cash flow considerations.

Staff intends to conclude diligence and bring a recommendation for an active currency manager to a Board of Retirement meeting in Q1 2025.

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Questions

Date: December 2, 2024

To: Trustees, Investment Committee

From: Daryn Miller, CFA, Chief Investment Officer
Geoff Nolan, Senior Investment Officer
Rafael A. Jimenez, CFA, Senior Investment Analyst

Subject: **Aristotle Short Duration Bond Strategy**

RECOMMENDATION

Staff recommends an investment of up to $240M in the Aristotle Short Duration Bond Strategy ("Fund" or "Strategy"). The Strategy will pursue a tailored investment mandate that invests primarily in investment grade corporate bonds with maturities of 1-3 years. The proposed recommendation fulfills the Plan's 4% allocation to Short Term Investment Grade Credit.

FIXED INCOME CORE ALLOCATION

The Plan's Strategic Asset Allocation (SAA) includes a 25% allocation to Fixed Income. The Fixed Income allocation is bifurcated into a 15% *Core* allocation and a 10% *Credit* allocation, each allocation serves a unique purpose in the context of the greater SAA. The Core allocation serves the primary goal of providing liquidity and risk mitigation. The Credit allocation serves the secondary objective of income generation and diversification. The 4% allocation to Short Term Investment Grade Credit is a part of the broader Core allocation.

In August 2023, Staff conducted a Fixed Income Strategic Review to assess the efficacy of the asset class to fulfill its role within the broader KCERA Portfolio. Staff concluded that a structural shift in the Fixed Income Portfolio was necessary to meet the objectives stated in the Investment Policy Statement (IPS) and these changes were instituted in the Plan's updated SAA. This recommendation is part of the broader reconstitution of the Fixed Income Portfolio consistent with the goal of de-risking the current portfolio to meet the objective of the asset class to mitigate risk and serve as a source of liquidity.

As of September 30th, 2024, the Fixed Income Portfolio had a market value of $1.2B with $723M (11.8% of Plan Assets) in Core Fixed Income.

ARISTOTLE PACIFIC CAPITAL

Aristotle Pacific Capital, LLC ("Aristotle Pacific", "Manager", or "Firm"), an affiliate of Aristotle Capital Management, is a Newport Beach, California-based firm that specializes in corporate debt. Aristotle Pacific's investment team was originally founded in 2007 and manages $29B of assets across bank loans, high yield, investment grade, and securitized strategies. In 2023, Aristotle Capital Management completed the acquisition of Pacific Asset Management LLC and was renamed Aristotle Pacific Capital, LLC. Prior to the acquisition, the former parent company of Pacific Asset Management LLC was Pacific Life Insurance Company.

Aristotle Pacific manages four corporate bond strategies totaling over $5.7B of assets as of September 30th, 2024. All four of the Firm's corporate bond strategies emphasize the BBB sector of the credit quality spectrum and are managed by the same investment team. The Aristotle Short Duration Bond Strategy has an AUM of $1.2B and a January 2012 inception.

INVESTMENT PHILOSOPHY & PROCESS
Aristotle Pacific focuses on capital preservation, liquidity, relative value, and credit selection to capture the most attractive risk/return opportunities. The Firm's investment philosophy is based on the belief that a focus on credit fundamentals will lead to outstanding long-term performance through security selection.

The investment process combines top-down considerations with bottom-up analysis. The top-down analysis incorporates an assessment of macroeconomic conditions and technical factors that can impact credit markets; this assessment results in a framework for risk positioning and sector allocation decisions. The team's process focuses on identifying companies with a sustainable competitive advantage, strong management team, and the ability to generate free cash flow.

The Strategy is predicated on the notion that corporate bonds in the BBB sector outperform on account of yield and spread advantages. The team has developed and demonstrated credit expertise in identifying attractive spreads and relative value. The structural overweight to the BBB sector demonstrates consistency it the Firm's investment philosophy.

PORTFOLIO MANAGERS & TEAM
David Weismiller, CFA is the lead portfolio manager for the Strategy and was a founding member of the former Pacific Asset Management LLC. Mr. Weismiller counts on 27 years of investment experience and has been the key decision-maker for the Strategy since inception in 2012. Weismiller is supported by co-portfolio manager, Ying Qiu, CFA. Qiu has 25 years of experience; she joined Aristotle Pacific in 2017 and has served in the co-portfolio manager capacity for 5 years.

The Short Duration platform counts on 12 credit research analysts that span across Bank Loans, Securitized Products, High Yield, and Investment Grade Corporates.

RISKS & CONSIDERATIONS
Staff partnered with PIMCO's Client Solutions & Analytics (CS&A) team to assess the implications of allowing the Manager the latitude to invest in *off-benchmark* asset classes to generate incremental return. In consultation with the Manager and Investment Consultant, Staff determined an allocation of up to 20% in a combination of Treasuries or Investment Grade Securitized is appropriate with the objectives of the mandate.

PIMCO's analysis revealed that a 10% allocation to either Treasuries or Securitized in isolation could be expected to contribute 9 basis points of Tracking Error relative to the Bloomberg US Corporate Credit 1-3 Year Index. However, because the asset classes are not perfectly correlated, there is an expected diversification benefit from allocating to both. The analysis of the CS&A team revealed that based on an average annual return over a 5-year horizon, the Securitized asset class exhibits a more attractive risk/return profile measured by Sharpe Ratio. The outcome of the assessment suggests that while adding an equal-weight blend is more additive than allocating to one asset class alone, an overweight to Securitized is more optimal. Staff determined it was suitable to grant the Manager autonomy to utilize the 20% *off-benchmark* allocation as needed based on the market environment, subject to a prudent Tracking Error target.

VEHICLE & TERMS
Staff recommends an investment in Aristotle Pacific in a Separately Managed Account (SMA) format subject to an Investment Management Agreement & Guidelines. The SMA structure is suitable given the degree of customization necessary to execute the tailored mandate. The manager has proposed a competitive flat management fee of 9 basis points.

INVESTMENT PROCESS
Staff utilized eVestment to screen the universe of prospective managers for a Short Term Investment Grade Credit mandate. Given the narrow breadth of the Bloomberg US Corporate Credit 1-3 Year Index in eVestment, Staff screened the Bloomberg US Government/Credit 1-3 Year Index to arrive at a preliminary list of managers that demonstrated the ability to generate excess return in consistent manner over tenured trailing and rolling time horizons. Staff requested a decomposition of the manager's monthly return by sub-asset class and focused the analysis on the relevant asset classes; the return of the corporate bond sleeve was emphasized.

Staff conducted diligence on the portfolio manager(s) and team to confirm the team that would manage a corporate bond mandate with opportunistic exposure to investment grade asset classes is the same team that produced the track record that surpassed the eVestment screen. Staff further reduced the universe of prospective managers after thoughtful consideration of the manager's risk profile; managers with a tracking error profile that is not commensurate with the level of excess of return generated were withdrawn from consideration.

VERUS
Verus undertook an independent assessment of the Manager to determine their institutional quality and provided a complementary memorandum that is supportive of Staff's recommendation. The Verus memorandum is appended to this document.

SUMMARY
The recommended investment in Aristotle Pacific represents an attractive opportunity for the Plan to gain access to a high conviction manager that has developed expertise in corporate credit and demonstrated the ability to generate excess return in a consistent and repeatable manner. The investment in Aristotle Pacific allows the Plan to earn a return that is consistent with the objective of the Fixed Income Core allocation.

Verus

Memorandum

To: Investment Committee, Kern County Employees' Retirement Association
From: Brian J. Kwan, CFA, CAIA, Managing Director and Senior Consultant
Scott J. Whalen, CFA, CAIA, Managing Director and Senior Consultant
Date: December 2nd, 2024
RE: Short Duration Core Fixed Income Mandate

Background

KCERA's Strategic Asset Allocation includes a 15% target allocation to Core Fixed Income, a portion of which (initially $240 million or 4% of the Total Fund) is dedicated to Short Duration. There is currently no dedicated Short Duration exposure in the KCERA portfolio. Earlier this year, KCERA Investment Staff (with support from Verus) initiated a search to fulfill the dedicated Short Duration mandate. The search process has culminated in a recommendation to the Investment Committee to hire the following manager and strategy to fulfill the mandate:

— Aristotle Pacific Capital Short Duration Bond Fund

This memo provides a review of the comprehensive due diligence process that led to the recommendation, a description the recommended strategy, and a statement affirming our favorable view of Staff's recommendation.

Evaluation and Due Diligence Process

A thorough search analysis was carried out in multiple stages, including:

— A review of eVestment's database of Short Duration investment managers and strategies
— Deep quantitative analysis
— Identification of eight prospective managers based on eVestment screen, focused on consistent alpha generation
— Internal discussions and a review of higher conviction strategies
— Additional due diligence interviews with four candidates
— Structure analysis with other components of the Fixed Income portfolio
— Mandate sizing analysis

Through these stages, Staff assessed various factors and attributes, including:

— Historical risk and return
— Investment team, philosophy, and process
— Approach to risk management
— Discreet periods of out and underperformance
— Factor exposures across managers
— Inclusion and sizing of off-benchmark asset classes

Verus supported Staff through the evaluation process by providing additional analytical and research resources.

Strategy Description
Aristotle Pacific Capital, LLC (formerly Pacific Asset Management LLC) was founded in 2007 as a division of Pacific Life Fund Advisors LLC. It was reorganized in 2019 as an indirect subsidiary of Pacific Life Insurance Company. In April 2023, Aristotle Capital Management, LLC acquired Pacific Asset Management LLC, renaming it Aristotle Pacific Capital, LLC. Now part of Aristotle Capital's organization, which manages approximately $85 billion in assets, Aristotle Pacific consists of 27 investment professionals with nearly two decades of experience, focusing on fixed income strategies. Key employees have long-term ownership interests, and non-investment functions are supported by Aristotle Capital's shared services team.

The Short Duration Bond Strategy ("the Strategy") focuses on relative value, liquidity, capital preservation, and selectivity within credits to capture the best long-term risk/return opportunities. The investment process combines bottom-up and top-down analysis, starting with an assessment of the macro-economic environment and technical factors impacting credit markets. This analysis informs portfolio risk positioning and sector allocations. The team screens investment opportunities, focusing on companies with a sustainable competitive position, strong management, and the ability to generate free cash flow. Fundamental analysis, drawing on the team's research and experience, ensures investment decisions undergo intense scrutiny. Portfolios are constructed to offer the best risk/reward proposition in accordance with investment guidelines.

Investments with the most favorable risk/reward analyses tend to have a greater weight in the portfolio, which are typically diversified by sector, company size, ratings, and maturity. The Strategy is managed by three portfolio managers: David Weismiller, Michael Marzouk, and Ying Qiu. They are jointly responsible for all aspects of the Strategy, which includes determining appropriate risk at the absolute, cross-sectional, and portfolio-level.

On a daily basis, the team meets to discuss regular market and opportunity developments. On a weekly basis, performance and risk are communicated by portfolio managers to the broader firm, including compliance and operations. On a quarterly basis, each portfolio management team conducts an in-depth formal review with the broader firm.

Credit monitoring takes place daily, and updates are captured in a centralized hub to disseminate across teams. Research on individual issuers is typically updated quarterly and/or as developments warrant. The monitoring of duration and spreads is more systematic, where the Head of Investment Risk Management is responsible for maintaining the integrity of the information that feeds into the portfolio management teams.

Verus Position
Based on our review of the evaluation and due diligence work of Staff and the independent work conducted by Verus, we are supportive of Staff's recommendation.

achieved. Investing entails risks, including possible loss of principal.
Verus – also known as Verus Advisory™.