ALASKA INDUSTRIAL DEVELOPMENT AND EXPORT AUTHORITY

RESOLUTION NO. G21-25

AMENDED AND RESTATED RESOLUTION OF THE ALASKA INDUSTRIAL DEVELOPMENT AND EXPORT AUTHORITY RELATING TO FIXED-INCOME INVESTMENT POLICIES

WHEREAS, AS 44.88.080(10) provides that the Alaska Industrial Development and Export Authority ("Authority") has the power to invest its funds, subject to agreements with bondholders;

WHEREAS, AS 44.88.060 provides that the Authority has the powers and responsibilities established in AS 37.10.071 with respect to the investment of amounts held in the Revolving Fund of the Authority;

WHEREAS, AS 44.88.660 provides that the Authority has the powers and responsibilities established in AS 37.10.071 with respect to the investment of amounts held in the Sustainable Energy Transmission and Supply Development ("SETS") Fund;

WHEREAS, AS 44.88.810 provides that the Authority has the powers and responsibilities established in AS 37.10.071 with respect to the investment of amounts held in the Arctic Infrastructure Development Fund;

WHEREAS, AS 37.10.071 provides that the prudent investor rule shall apply to the fiduciary of a State of Alaska fund;

WHEREAS, it is in the best interest of the Authority to set out in detail the investment policies of the Authority;

WHEREAS, Resolution G01-14 adopted policies and guidelines to be followed in the investment of Authority assets;

WHEREAS, Resolution G01-14A, Resolution G01-14B, Resolution G01-14C and Resolution G01-14D amended and restated Resolution G01-14; and

WHEREAS, the Board desires to amend and restate Resolution G01-14 again in this new resolution to reflect changes in the Authority's investment policies.

NOW, THEREFORE BE IT RESOLVED by the Board that the following policies and guidelines are to be followed in the investment of Authority assets:

I. Investment Policy for External Advisor–Managed Investment Assets

The intent of the following policy is that the Executive Director will enter an Investment Management Agreement ("IMA(s)") with external investment advisors ("Investment Manager(s)").

A. The Board authorizes the Executive Director to provide for investment in the specific instruments set forth in this section at his discretion and within the prohibitions and descriptions set forth. The Executive Director is authorized to enter into an IMA on such terms and conditions as he considers necessary to carry out the purposes of this section. In addition to the authorized investments presented herein, the IMA will provide guidelines relating to, among other things, the maximum non-U.S. dollar denominated currency exposure permitted. Such non-U.S. dollar denominated investments are permitted provided that the greater of $200 million or 60% of the externally managed investment portfolios in aggregate shall be invested in U.S. dollar denominated investments. The IMA will also provide guidelines relating to cost, minimum safekeeping requirements and reporting requirements.

B. Authorized debt investments for U.S. dollar denominated portfolios include:

1. Eligible long term securities

Investment Managers may invest in debt instruments issued or guaranteed by the U.S. Government, its agencies and instrumentalities, and Government Sponsored Enterprises (GSEs). Investment Managers may also purchase dollar- denominated debt instruments that have been issued by domestic and non-domestic entities. Eligible corporate investments include cumulative capital securities, Real Estate Investment Trust (REIT) debt obligations, equipment trust securities, enhanced equipment trust securities, and pass-through securities.

Investments must carry a rating of BB or above, at the time of purchase (subject to the BBB- weighted average credit quality of the portfolio), or if any investment is unrated or becomes unrated, the Investment Manager must deem the investment to be of investment grade credit quality (BBB- or above). The total of unrated investments may not exceed five percent (5%) of the Investment Manager's portfolio value and the unrated investments of a single issuer may not exceed 2% of the Investment Manager's portfolio value.

Investment Managers shall assign a rating for purposes of determining compliance with quality guidelines which will be the middle rating if ratings are provided by Moody's, Standard & Poor's, and Fitch; the lower rating if only two ratings exist; and the rating provided if only one rating exists. If a security is unrated, the Investment Manager shall assign an internal rating for compliance purposes. In the event that the rating of a security is downgraded below investment grade while the security is owned by AIDEA (including an unrated investment assigned a rating by the Investment Manager), it will no longer be eligible for purchase if the weighted average credit quality of the portfolio falls below BBB- (investment grade). If the security that is downgraded causes the weighted average credit quality of the portfolio to fall below BBB- (investment grade), the Investment Manager will immediately report the downgrade to AIDEA with a plan of action for monitoring the security and its orderly disposition within a six-month period. If the Investment Manager believes that the security is undervalued, the Investment Manager may request that the Executive Director grant an additional six months in which to liquidate the security; the request shall be in writing and support the Investment Manager's position that the investment is undervalued. In either case, the Investment Manager will reposition the portfolio within 6 months to represent a minimum weighted average credit quality of BBB-.

Mortgage-backed securities issued or guaranteed by Federal agencies or GSEs are permitted, as are asset backed securities, including collateralized mortgage backed securities (CMBS) and collateralized mortgage obligations (CMOs). CMOs are limited to the more stable classes, including (but not limited to) Planned Amortization Class (PAC(1)'s), Very Accurately Defined Mortgages

(VADM), Accretion Directed (AD), Z (accrual) tranches, and Sequential Pay CMOs. Prohibited CMO classes include those where principal and interest components are separated or where leverage is employed; examples include Interest Only, Principal Only, and inverse floating rate notes.

2. Certificates of Deposit and Term Deposits

Certificates of deposit and term deposits of United States domestic financial institutions which are members of the Federal Deposit Insurance Corporation provided that such entities have the highest credit rating assigned by a nationally recognized rating service and which may be readily sold in a secondary market at prices reflecting fair value**.**

3. Money Market Instruments

a. short-term domestic corporate promissory notes payable in United States dollars of the highest rating assigned by a nationally recognized rating service;

b. repurchase agreements with U.S. Treasury securities and agencies of the U.S. Government as collateral;

c. bankers' acceptances drawn on and accepted by United States banks which have a capital and surplus aggregating at least $200 million and that also have the highest credit rating assigned by a nationally recognized rating service;

d. bankers' acceptances which are issued by a United States bank or trust company located in a foreign country and are denominated in United States currency, if either (i) they may be readily sold in a secondary market at prices reflecting fair value, or (ii) the issuing bank or trust company has capital and surplus at the date of issue equaling at least $500 million and also has the highest credit rating assigned by a nationally recognized rating service; and

e. Investments in cash equivalent collective investment vehicles (money market funds) that have a primary objective of stability of principal and ready liquidity and that have been approved by staff for use by the external managers.

C. Authorized debt investments for use in portfolios permitted to invest in non-U.S. dollar denominated securities:

1. All the U.S. dollar denominated investments permitted in B of this document.
2. Non-U.S. dollar denominated obligations of foreign governments, sovereign states (including local currency emerging markets) and supranational entities.
3. No more than 20% of any portfolio's maximum permitted non-U.S. dollar investments, measured on the date of purchase, may be invested in non-U.S. dollar denominated corporate debt obligations. Corporate debt obligations must be rated investment grade or better by a recognized credit rating agency. In the event a split rating exists, the lower of the ratings shall for evaluating credit quality.
4. No more than 20% of any portfolio's maximum permitted non-U.S. dollar investments, measured on the date of purchase, may be invested in obligations denominated in currencies not included in the Citigroup World Government Bond Index ex US.
5. Managers are not allowed to hold a net short position in any currency and may not participate in hedging other than defensive hedging which is defined for purposes of this section as hedging of foreign currency exposure directly into the U.S. dollar.
6. Futures and forward contracts for the purchase or sale of currencies may be entered into only to facilitate securities transactions or for defensive hedging described in (5) above.

D. Duration – The duration of each externally managed fixed income portfolio may not exceed 25% of the duration of the Barclays Capital Aggregate Bond Index for domestic fixed income portfolios and the contractual non-U.S. dollar denominated benchmark for the portfolios(or sub-portfolio component) available for investment in non-U.S. dollar denominated instruments.

E. Portfolio Quality –The weighted average quality rating shall be BBB- (investment grade) or better, usingthe methodology described in Section I.B.1 to assign a rating for compliance purposes.

F. Diversification – The exposure of each Investment Manager portfolio to any one issuer, other than securities issued or guaranteed by the U.S. Government, its agencies or instrumentalities, or GSEs, or collateralized by securities issued or guaranteed by the U.S. Government, its agencies or instrumentalities, or GSEs, shall not exceed 5% of the market value of the portfolio at the time of purchase.

G. Performance Standards – Performance will be reviewed quarterly and evaluated annually and compared to the performance of the appropriate benchmark index and peer groups. The Barclays Capital Aggregate Bond Index is the appropriate index for domestic only external fixed income portfolios. The Citigroup World Bond Index Ex-US is the appropriate benchmark for a non-US bond portfolio. A blended index comprised of both primary indexes weighted in accordance with the manager Investment Management Agreement shall be the appropriate index for an individual portfolio that expected to invest in both U.S. and non-U.S. denominated securities. Over rolling 3 – 5 year periods, Investment Managers are expected to achieve total returns, net of fees, which at a minimum match that of the market benchmark and rank at or above the median of the peer group.

II. Investment Policy for Direct Authority-Managed Investment Assets

A. This policy applies to all funds managed directly by the Authority excluding those assets held by trustees for investment under bond covenants. Such assets shall be invested in accordance with the controlling instruments.

B. The primary investment objective of direct Authority-managed investments is to safe keep Authority funds while providing for adequate liquidity to meet immediate expenditure needs. Individual investments within the portfolio are diversified as to type of security, duration, and source in order to maintain a balanced portfolio and meet Authority bond covenants.

Investments shall be made with the exercise of that judgment and care, under circumstances then prevailing, that an institutional investor of ordinary professional prudence, discretion, and intelligence exercises in managing large investments with consideration for the purpose of the funds, the investment objectives, the continuing disposition of the fund's investments, and the probable safety of the capital as well as the probable investment returns.

Security purchases shall be based on their merits as an investment. All investments made in the internal portfolios shall be made with a primary objective of preserving principal and achieving income returns consistent with that primary objective.

C. Such Authority-managed investments shall be made by the Executive Director, and/or those person(s) assigned by the Executive Director which include, but are not limited to, the Chief Investment Officer

D. Allowable Investments:

The Executive Director and/or those person(s) assigned by the Executive Director shall invest money only in the following investment instruments:

1. Debt instruments issued or guaranteed by the U.S. Government and its agencies and instrumentalities, and GSEs.
2. Shares/units of cash equivalent collective investment vehicles (money market funds) that are authorized to invest only in assets or securities described in I.B. of this resolution and further provided that such investment vehicles shall have a primary objective of stability of principal and ready liquidity.
3. Repurchase agreements with U.S. Treasury securities and agencies of the U.S. Government as collateral.
4. Units in the investment pool or any series of the investment pool of the Alaska Municipal League Investment Pool, Inc., or any successor to that entity, or any other investment pool for public entities of the State of Alaska that is established under the Alaska Investment Pool Act. AS 37.23.010 – AS 37.23.900.

E. Any investment other than those defined in D above must be specifically approved by the Board prior to any commitment being made.

F. Duration – The portfolio duration for internally managed assets available for longer-term investments shall be 24 months or less. The maximum maturity of any issue shall be 36 months from the date of purchase. Investments released from pledges to bondholders, which have maturities of more than 36 months from the date of release may be retained.

G. Performance Standards – Performance shall be evaluated quarterly and compared to the 90-day Treasury bill and a 1-year Treasury instrument. The unrestricted liquidity portfolio is expected to produce a total return, over rolling 3 – 5 year periods that at a minimum match that of the 90-day market benchmark.

III. Safekeeping of Securities

The Executive Director shall appoint trustee(s) to act as safekeeping and custodial agent(s) for the Authority. All investment securities will be held by the trustee(s).

IV. Movement of Funds Among Accounts

The Executive Director shall determine the level of funds to be managed internally and shall have the authority to move funds in excess of this amount to the externally managed portfolios. The amount of funds managed internally should be sufficient to meet the Authority's expected liquidity requirements for the succeeding two years. Similarly, the Executive Director shall have the authority to move funds from the externally managed portfolios to the internal portfolio when the balance in the internal portfolio is insufficient to meet anticipated liquidity requirements.

V. Reporting

Each quarter the Executive Director shall cause a report to be prepared and provided to the members of the Board, which sets forth amounts invested in the externally managed bond portfolios and the internally managed unrestricted liquidity portfolio. The quarterly reports shall include information regarding the diversification and performance of each portfolio in relation to appropriate market indices. The report shall include comparative performance information that enables the reader to evaluate whether the portfolios are achieving returns that are consistent with objectives and market conditions.

Each year-end the Executive Director shall cause a report to be prepared and provided to the members of the Board, which satisfies all appropriate accounting requirements.

Additionally, a year-end report will be prepared and presented to the Board that identifies the components of the total investment portfolio by the externally managed portfolios, the internally managed unrestricted liquidity portfolio and the remaining investments, identified by restriction.

VI. Manager Selection

The Authority will select appropriate Investment Managers to manage its assets. A selection committee comprised of senior management shall utilize the Authority's investment consultant to conduct a manager search assignment. This selection process shall include the establishment of specific search criteria and documentation of analysis and due diligence on potential candidates. All Investment Manager candidates must meet the following minimum criteria:

1. Be a bank, insurance company, investment management company, or investment adviser as defined by the Registered Investment Advisers Act of 1940 or be the State of Alaska, Department of Revenue.
2. Provide historical quarterly performance numbers calculated on a time-weighted basis, based on a composite of all fully discretionary accounts of similar investment style.
3. Provide performance evaluation reports prepared by an objective third party that illustrate the risk/return profile of the manager relative to other managers of like investment style.
4. Provide detailed information on the history of the firm, key personnel, key clients, fee schedule, and support personnel and demonstrate financial and professional staff stability.
5. Clearly articulate the investment strategy that will be followed and document that the strategy has been successfully adhered to over time.
6. Selected firms shall have no outstanding legal judgments or past judgments that may reflect negatively upon the firm.

VII. Further Restrictions

A. The Authority may not buy investments on margin.

B. The Authority may enter into future contracts for the sale of investments only for the purpose of hedging an existing equivalent ownership position in these securities.

VIII. Effective Date

This Resolution amending Resolution G01-14D shall take effect immediately upon its adoption.

DATED at Anchorage, Alaska, the 11th day of October, 2001, amended the 21st day of June, 2006, amended the 19th day of July, 2011, amended the 6th day of December, 2012, amended the 1st day of October, 2013, and further amended this 30th day of September, 2021.

ALASKA INDUSTRIAL DEVELOPMENT
AND EXPORT AUTHORITY

ALASKA INDUSTRIAL DEVELOPMENT AND EXPORT AUTHORITY
CORPORATE
SEAL
1967

Chair

Secretary

Callan

August 13, 2021

AIDEA

Back Testing Performance and Portfolio Holdings Analysis

Alex Ford
Vice President

AIDEA

Meeting Agenda

I. Investment Performance

II. Forward-Looking Capital Market Assumptions

III. Portfolio Holdings Analysis

Callan

Investment Analysis

Principles of Asset Allocation

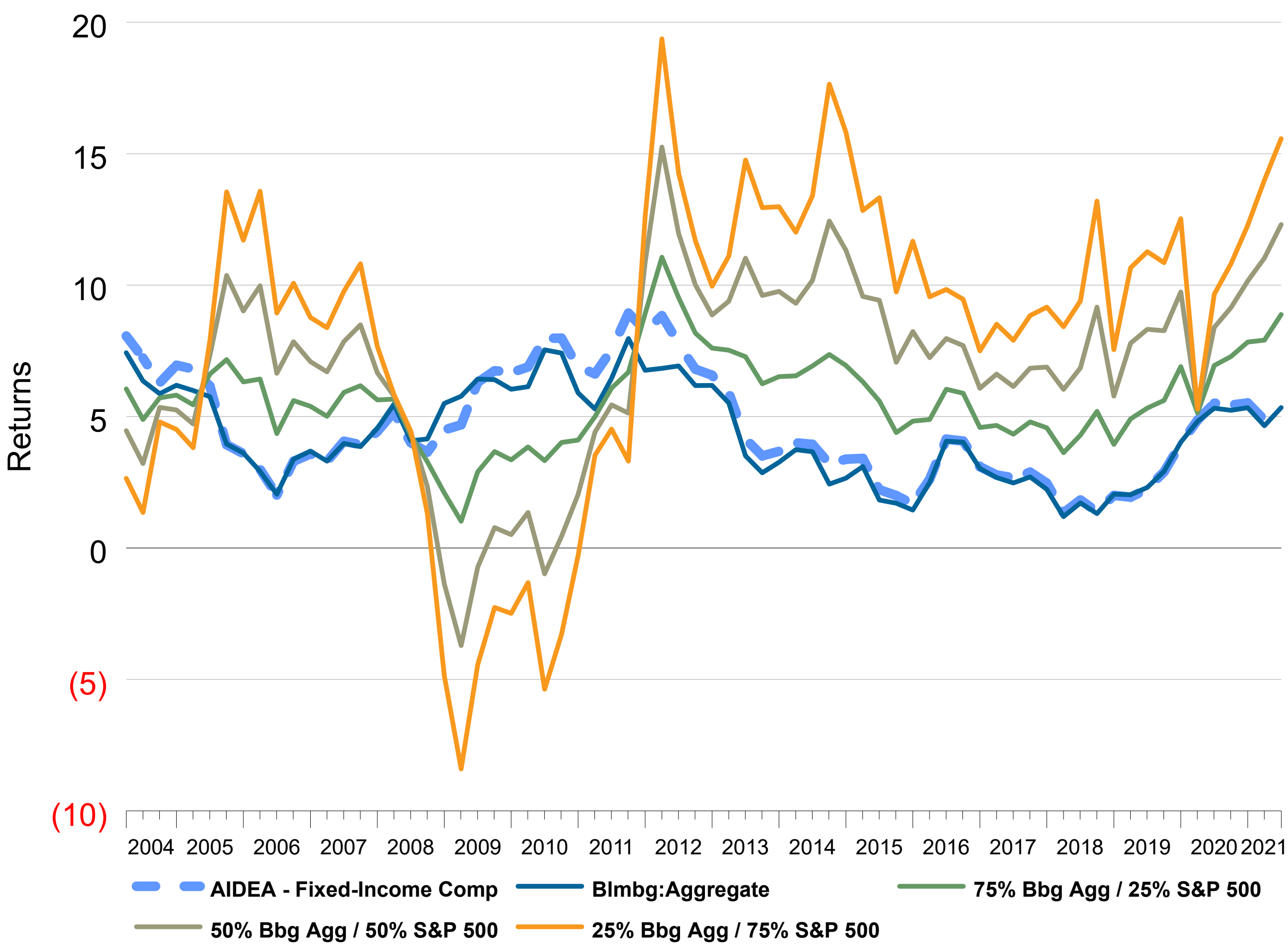
Risk tolerance and investment time horizon will shape an appropriate asset allocation

- Asset allocation is the ultimate expression of an investment fund's tolerance for risk and is the single greatest determinant of both return and volatility over time.
- Asset Allocation is defined by an investor's expectations and tolerance in three critical areas:
  1. Potential return;
  2. Risk exposure. "Risk" may be expressed as price volatility or the potential loss of capital; and
  3. Liquidity, meaning the ability – or lack thereof – to readily convert assets to cash
- Investors with an effective time horizon measured in days or months have little tolerance for downside risk (i.e. loss of capital) and do not invest in volatile assets or strategies.
- Investors with effective time horizons measured in decades can tolerate volatility since their investment priority is long-term capital appreciation *rather than* short-term loss aversion.
- An investment fund's stated purpose and its asset allocation should match. To do otherwise introduces fiduciary risk.

AIDEA Investment Analysis

Back-Testing: Performance

Rolling 3-Year Returns



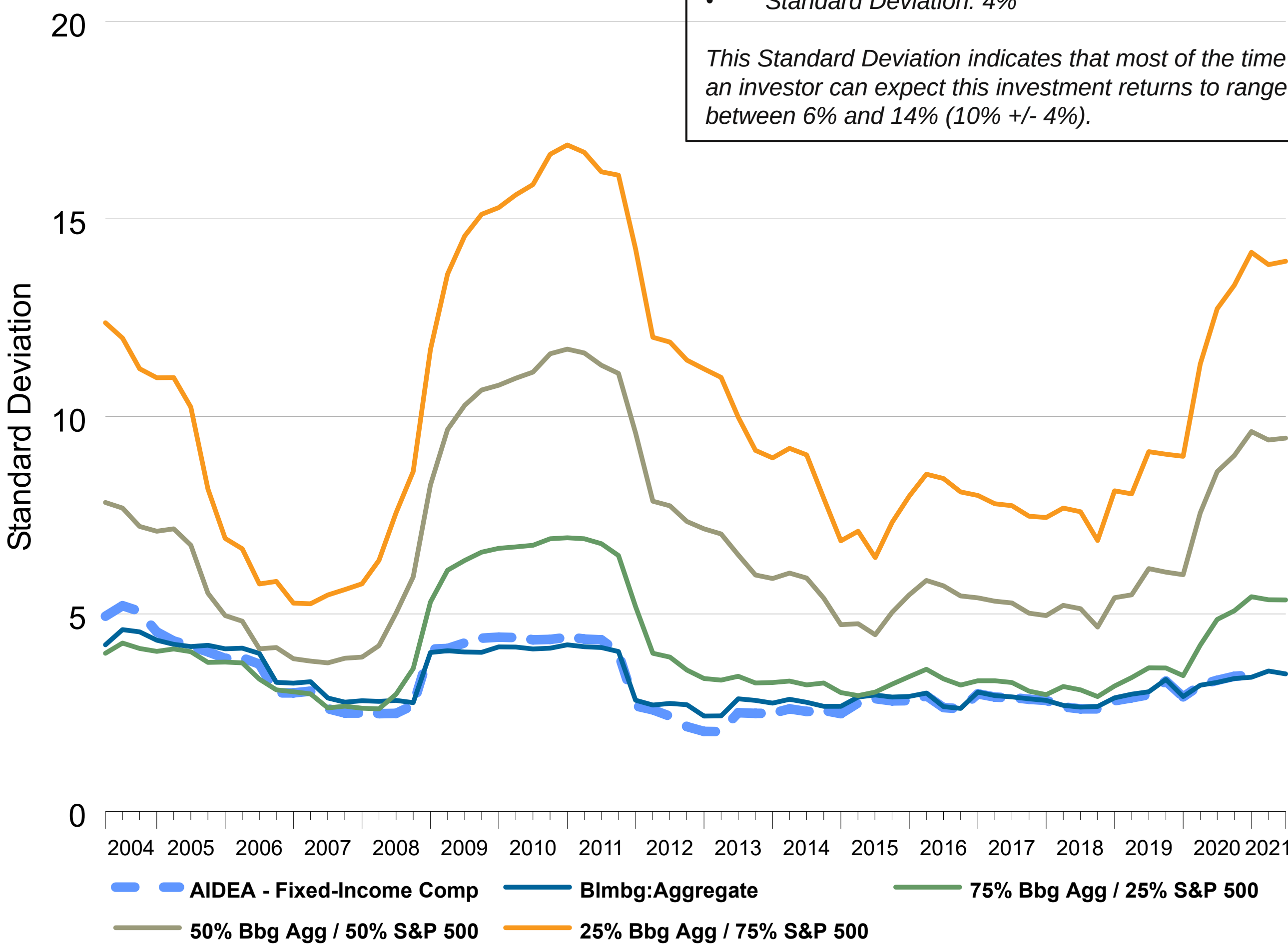
Performance shown is for AIDEA's external investment managers
Data: Quarterly return series, June 30, 2004 – June 30, 2021

Observations:

- Rolling three-year returns are used to smooth out short-term market volatility
- The past decade has been a period of strong equity market performance, often led by large-capitalization and growth-oriented companies (i.e. big tech)
- However, the prior period was a stressed environment marked by a deep recession which saw equity-linked portfolios post negative returns over consecutive rolling three-year periods
- Fixed income portfolios have lagged equity returns more recently, but outperformed during periods of market stress and did not experience negative returns over any three-years during the observation period

Back-Testing: Risk

Rolling 3-Year Standard Deviation



<u>*Example:*</u>
- *Average Investment Returns for 5 years: 10%*
- *Standard Deviation: 4%*

This Standard Deviation indicates that most of the time an investor can expect this investment returns to range between 6% and 14% (10% +/- 4%).

Observations:

- Observing the dispersion of returns around their sample mean provides a measure of portfolio risk, known as standard deviation
- The more standard deviation, or volatility, a portfolio has, the greater the investment risk
- The higher returns for equity-linked portfolios shown on the prior page come with increased levels of risk, which can surge dramatically during periods of market stress
- This scenario can present liquidity challenges when an investment program is obligated to meet financial liabilities despite risk assets (i.e. equities) having sold off
- The volatility exhibited by fixed income portfolios has been lower on an absolute basis and also more stable through time

Performance shown is for AIDEA's external investment managers

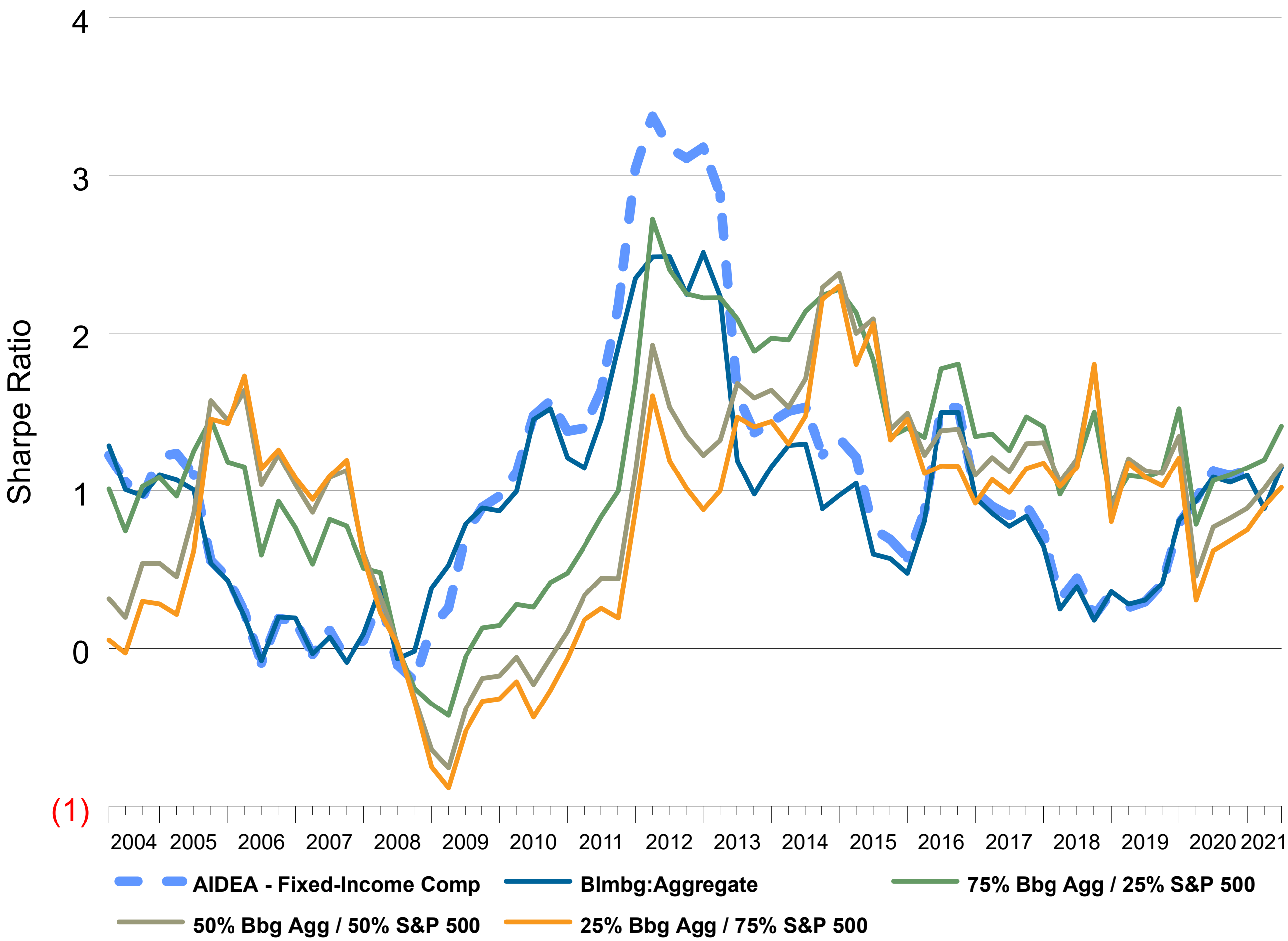
Data: Quarterly return series, June 30, 2004 – June 30, 2021

Standard Deviation is a statistical measure of portfolio risk. It reflects the average deviation of the observations from their sample mean. Standard deviation is used as an estimate of risk since it measures how wide the range of returns typically is. The wider the typical range of returns, the higher the standard deviation of returns, and the higher the portfolio risk.

AIDEA Investment Analysis

Risk-Adjusted Performance

Rolling 3-Year Sharpe Ratio



Observations:

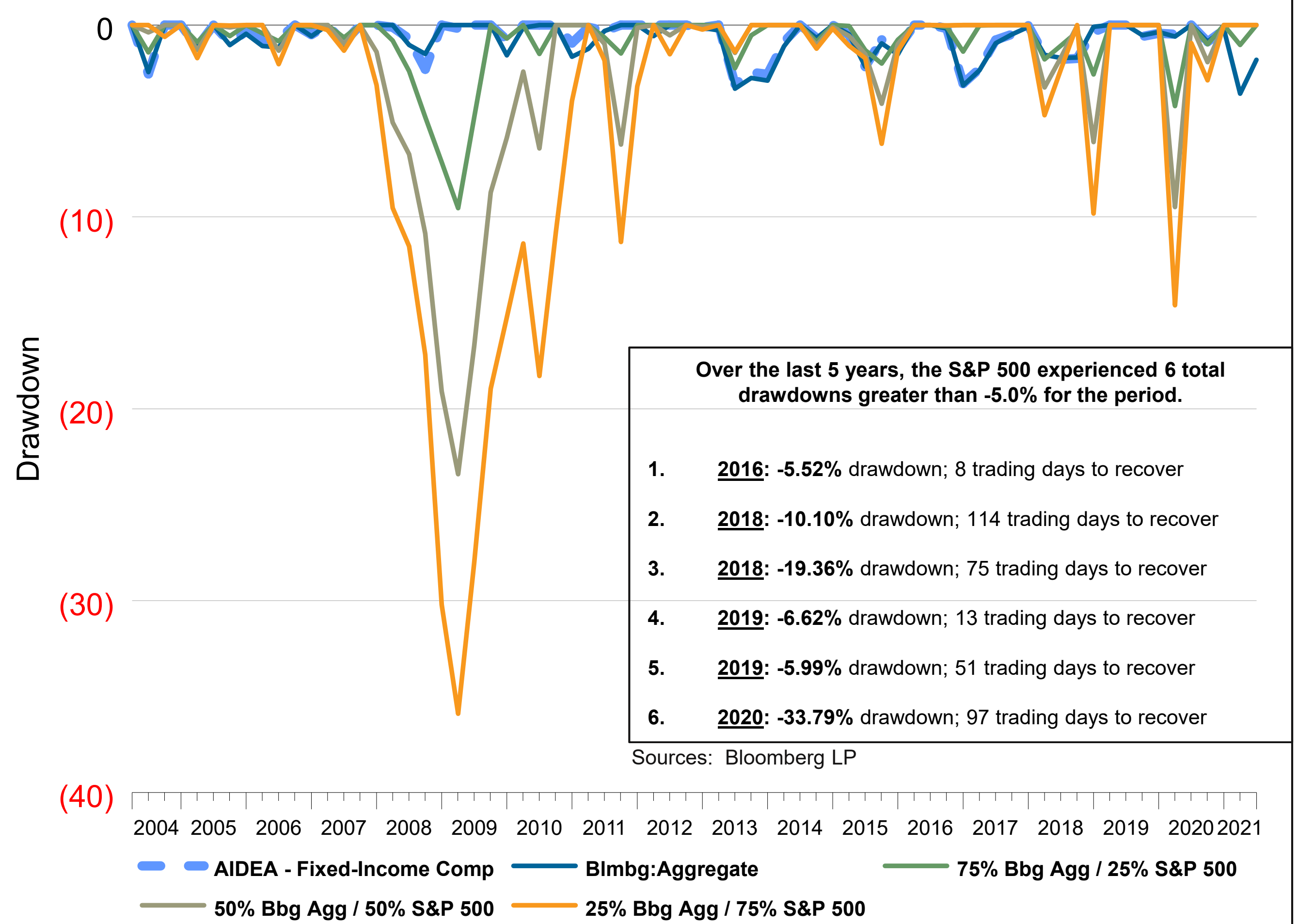
- It is important to consider the returns earned within the context of the risk taken
- Generally, the greater the value of the Sharpe ratio, the more attractive the risk-adjusted return
- The Sharpe ratio can be a useful tool in understanding whether a portfolio's returns are the result of smart investment decision-making or taking on too much risk
- Although the equity-linked portfolios have often delivered higher returns than fixed income, the Sharpe ratio is frequently lower
- This indicates poorer risk-adjusted performance

Data: Quarterly return series, June 30, 2004 – June 30, 2021

Sharpe Ratio is a commonly used measure of risk-adjust return. It is calculated by subtracting the "risk-free" return from the portfolio return, and dividing the resulting "excess return" by the portfolio's risk level (standard deviation). The result is a measure of return gained per unit of risk.

AIDEA Investment Analysis

Drawdown



Performance shown is for AIDEA's external investment managers
Data: Quarterly return series, June 30, 2004 – June 30, 2021

Observations:

- Drawdown is measure of downside volatility, and reflects the maximum loss to a portfolio from its prior peak
- Both the depth of the loss and time to recover are important considerations
- Volatility and drawdown can pose liquidity challenges for investment programs that have financial obligations (i.e. cash flows) irrespective of the prevailing market environment
- *Beware the impact of negative returns*: a 20% drawdown requires a 25% return to reach the prior peak ("get back to even"); a 50% drawdown requires a 100% increase!

A **Drawdown** is a peak-to-trough decline in a portfolio's value before it recovers back to the prior peak, typically quoted in percentage terms. The time it takes to recover should also be considered when assessing drawdowns. Drawdowns are a measure of "downside volatility"

AIDEA Investment Analysis

Historical Risk, Return, and Sharpe Ratio

- AIDEA's external fixed income managers typically lagged equity-linked portfolios in terms of return, but have delivered far less volatility in most calendar years. The external managers delivered superior returns in calendar years 2018 and 2008.

- AIDEA's external fixed income managers have delivered ***superior risk-adjusted returns more than half of the time over the last 15 years.***

	Return (net of fees)				***Volatility (Standard Deviation)***				***Sharpe Ratio***			
Date	AIDEA Ext. Managers	75% Bonds 25% Equity	50% Bonds 50% Equity	25% Bonds 75% Equity	AIDEA Ext. Managers	75% Bonds 25% Equity	50% Bonds 50% Equity	25% Bonds 75% Equity	AIDEA Ext. Managers	75% Bonds 25% Equity	50% Bonds 50% Equity	25% Bonds 75% Equity
12/31/20	8.39	10.74	13.66	16.22	3.56	7.58	13.53	19.71	2.17	1.33	0.96	0.79
12/31/19	8.76	14.25	19.89	25.64	3.47	3.31	6.03	9.39	1.87	3.62	2.92	2.49
12/31/18	-0.33	-0.87	-1.90	-3.07	2.99	3.93	7.41	11.32	-0.74	-0.70	-0.51	-0.44
12/31/17	3.66	7.88	12.37	17.02	1.54	1.43	2.04	2.94	1.82	4.91	5.65	5.50
12/31/16	2.73	5.03	7.38	9.69	3.60	3.36	5.08	7.57	0.67	1.40	1.39	1.24
12/31/15	1.02	0.94	1.21	1.36	3.10	3.54	6.59	10.07	0.31	0.25	0.18	0.13
12/31/14	5.59	7.91	9.85	11.77	2.20	2.99	4.54	6.36	2.52	2.63	2.16	1.85
12/31/13	-1.47	5.77	14.08	22.94	2.90	3.69	5.00	6.67	-0.53	1.54	2.80	3.43
12/31/12	6.21	7.18	10.13	13.07	1.78	2.49	4.97	7.72	3.42	2.83	2.02	1.68
12/31/11	6.53	6.64	5.28	3.77	2.17	3.75	7.64	11.76	2.96	1.74	0.68	0.31
12/31/10	6.99	9.03	11.29	13.30	2.29	3.96	8.86	14.03	3.00	2.25	1.26	0.94
12/31/09	11.39	11.16	16.34	21.45	3.42	7.42	12.27	17.25	3.27	1.48	1.31	1.23
12/31/08	2.47	-6.90	-17.94	-27.95	6.49	8.07	11.91	16.35	0.06	-1.11	-1.68	-1.84
12/31/07	6.36	6.71	6.38	5.97	2.28	2.35	4.41	6.98	0.59	0.73	0.31	0.14
12/31/06	4.71	7.13	9.97	12.86	2.45	2.78	3.45	4.47	-0.06	0.82	1.48	1.79

AIDEA- External Managers	**Fixed Income**	**Fees**	**Blended Fee**	**SMA/Pooled**
Barrow Hanley	100%	0.21%	0.16%	SMA
Alaska Permanent Capital	100%	0.11%		

SMA vs Pooled:
Separately Managed Account (SMA) is a portfolio of individual securities managed by an asset management firm that directly owns all securities in the account. This can provide the investor more control and transparency of the investments.
Pooled Investment Vehicles collect money from multiple investors and puts it in one managed portfolio. Pooled investment funds allocate the combined funds over a variety of investments that are professionally managed by one company. Other investor contributions and withdrawals can affect all pooled investor returns.

Standard Deviation is a statistical measure of portfolio risk. It reflects the average deviation of the observations from their sample mean. Standard deviation is used as an estimate of risk since it measures how wide the range of returns typically is. The wider the typical range of returns, the higher the standard deviation of returns, and the higher the portfolio risk.
Sharpe Ratio is a commonly used measure of risk-adjust return. It is calculated by subtracting the "risk-free" return from the portfolio return, and dividing the resulting "excess return" by the portfolio's risk level (standard deviation). The result is a measure of return gained per unit of risk.

10 Year Correlation Matrix

	AK Trans. GDP	AK Govt. GDP	AK Edu. GDP	AK Min. GDP	Crude (CL)	ANS Crude
S&P 500	-0.08	0.03	0.05	-0.05	0.44	0.16
Barclays US Aggregate	-0.54	-0.43	-0.37	-0.01	0.10	-0.27

Sources: AIDEA, Bloomberg LP, www.statista.com

Largest Components of Alaska's GDP

- Mining, Oil and Gas Extraction (*AK Min. GDP; Crude(CL); & ANS Crude*)
- Government and Government Enterprises (*AK Govt. GDP*)
- Transportation and Warehousing (*AK Trans GDP*)
- Education Services (*AK Ede. GDP*)

Observations:

- Correlation is measured on a scale of -1.0 to 1.0.
  - *A value near 1.0 indicates a strong positive correlation*
  - *A value near -1.0 indicates a strong inverse correlation*
  - *A value near 0.0 indicates very little or no correlation*
- Correlation measures the strength of the linear relationship between two variables
- Relationships between asset classes are as important as standard deviation
- This matrix exemplifies the hedge like performance of the Barclays US Aggregate against the main economic drivers of the Alaskan economy

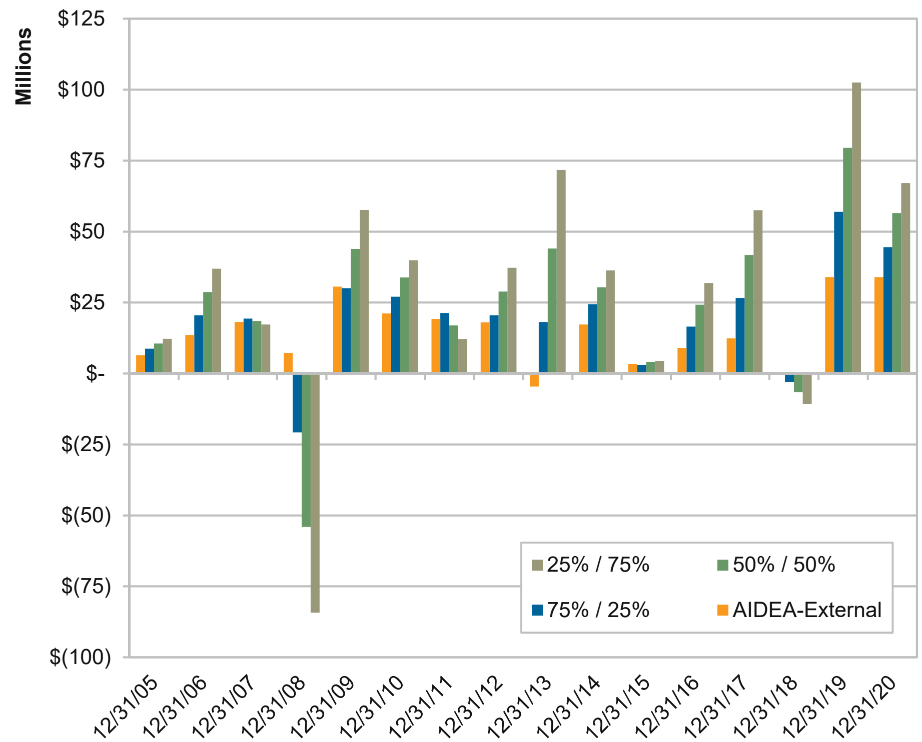
Standard Deviation is a statistical measure of portfolio risk. It reflects the average deviation of the observations from their sample mean. Standard deviation is used as an estimate of risk since it measures how wide the range of returns typically is. The wider the typical range of returns, the higher the standard deviation of returns, and the higher the portfolio risk.

AIDEA Investment Analysis

Dollar returns through time

Year	AIDEA Ext Managers	75% AIDEA / 25% Equity	50% AIDEA / 50% Equity	25% AIDEA / 75% Equity
12/31/20	$ 33,843,098	$ 44,434,232	$ 56,491,567	$ 67,084,123
12/31/19	$ 33,897,937	$ 56,933,404	$ 79,493,114	$ 102,475,251
12/31/18	$ (302,833)	$ (3,040,020)	$ (6,632,611)	$ (10,735,081)
12/31/17	$ 12,357,913	$ 26,598,243	$ 41,758,850	$ 57,454,878
12/31/16	$ 8,984,553	$ 16,522,739	$ 24,239,113	$ 31,836,530
12/31/15	$ 3,333,127	$ 3,064,089	$ 3,940,055	$ 4,418,534
12/31/14	$ 17,219,260	$ 24,364,119	$ 30,328,384	$ 36,264,924
12/31/13	$ (4,602,019)	$ 18,028,778	$ 44,019,069	$ 71,733,043
12/31/12	$ 17,995,172	$ 20,425,102	$ 28,837,162	$ 37,219,333
12/31/11	$ 19,215,017	$ 21,269,059	$ 16,906,808	$ 12,064,847
12/31/10	$ 21,118,743	$ 27,025,192	$ 33,788,824	$ 39,824,488
12/31/09	$ 30,600,695	$ 29,978,223	$ 43,909,889	$ 57,651,296
12/31/08	$ 7,132,550	$ (20,808,881)	$ (54,106,830)	$ (84,297,139)
12/31/07	$ 18,107,667	$ 19,353,492	$ 18,396,867	$ 17,228,491
12/31/06	$ 13,478,987	$ 20,449,952	$ 28,602,724	$ 36,896,992
12/31/05	$ 6,377,834	$ 8,744,461	$ 10,549,760	$ 12,229,898
Total	$ 238,757,700	$ 313,342,184	$ 400,522,744	$ 489,350,409
	Δ	*$ 74,584,484*	*$ 161,765,044*	*$ 250,592,708*

Investment Earnings

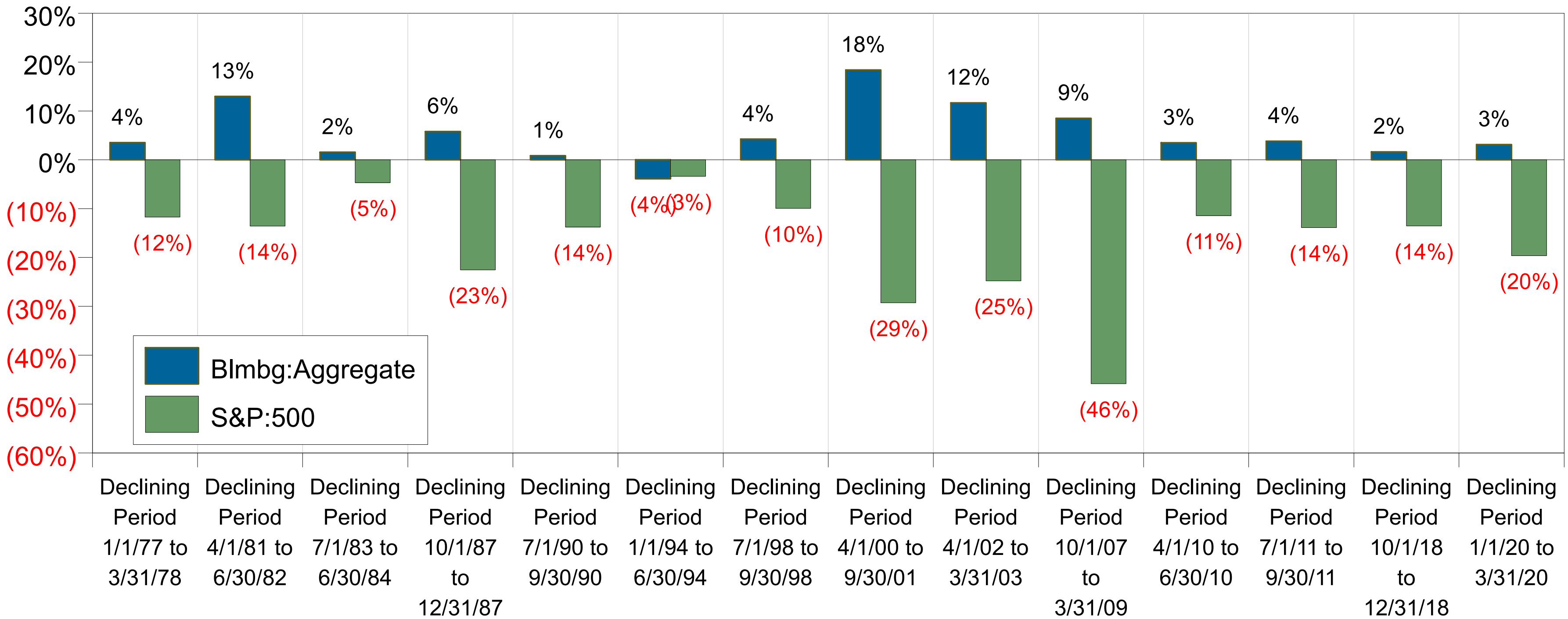


- Since 2005, AIDEA's external fixed income managers have delivered cumulative earnings of nearly $240 million to the investment program.
- Hypothetical blended portfolios with increasing equity exposure would have delivered more earnings, with the exceptions being 2008 and 2018.

Fixed Income

Role as the "Anchor to Windward"

Cumulative Returns for Domestic Equity Declining Periods



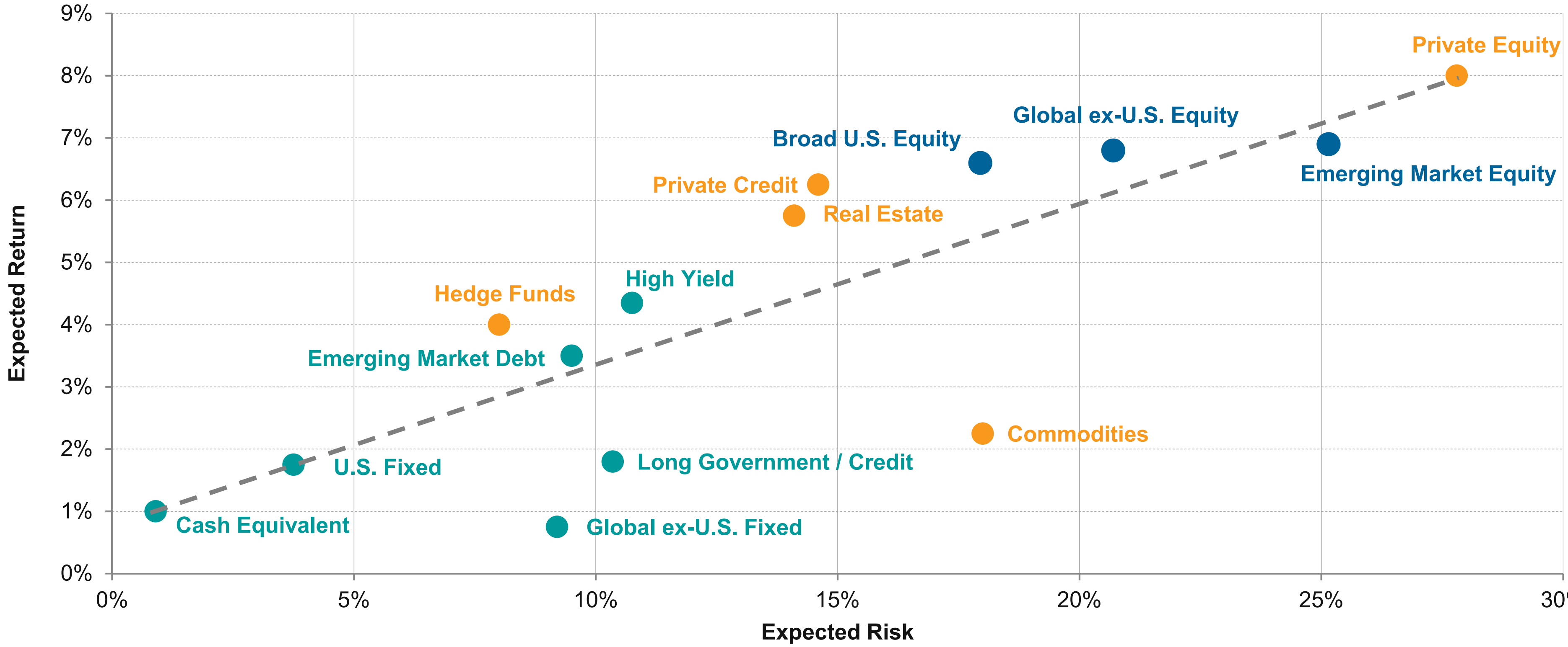
- Within calendar years, equity portfolios can see steep drawdowns. During these periods, fixed income portfolios tend to deliver positive returns.
- For example, during the first quarter of 2020 equity markets were down over 20%; meanwhile, fixed income was positive by 3%.

Callan

2021 Capital Markets Assumptions

Relationship Between Expected Return and Risk – Capital Market Line

Visualizing Callan's 2021–2030 capital markets assumptions



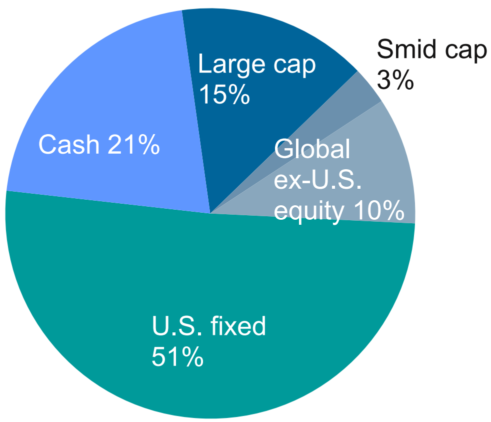
Our forecasts link expected return to risk

For example, investors demand a greater return from private equity than public equity as compensation for higher risk

Source: Callan

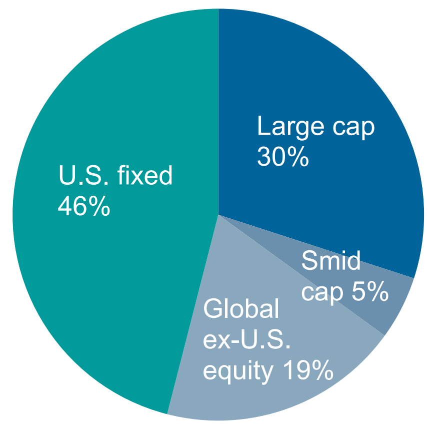
5% Expected Real Returns Over Past 30+ Years

Increasing Complexity



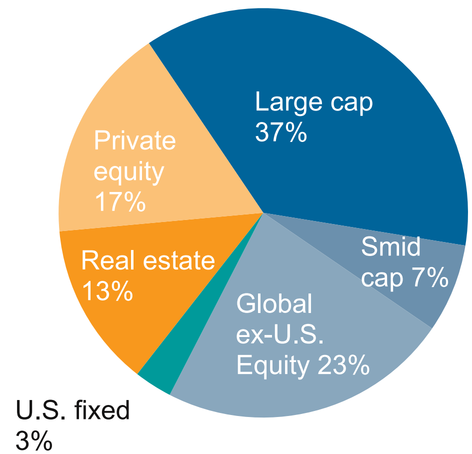
1991

Inflation:	**5.00%**
Real Return:	**5.0%**
Risk:	**6.6%**



2006

Inflation:	**2.75%**
Real Return:	**5.0%**
Risk:	**9.3%**



2021

Inflation:	**2.00%**
Real Return:	**5.0%**
Risk:	**17.3%**

Increasing Risk

Despite a 5% inflation projection, an investor could have almost three-quarters of the portfolio in low-risk assets (cash and fixed income) and still earn a 5% projected real return in 1991

15 years later, an investor would have needed over half of the portfolio in public equities to achieve a 5% projected real return

Today an investor must have 97% in return-seeking assets to earn a 5% projected real return at over 2.5x the volatility compared to 1991

Source: Callan

Callan

Portfolio Holdings Analysis

AIDEA Portfolio Holdings Analysis

Restricted List

This is an AIDEA generated list that was provided to Callan for the historical portfolio holdings analysis. This is a non-exhaustive list of companies that have been publicly identified as having commentary, business practices or policies against Arctic drilling and development.

350 Colorado	Central Sierra Audubon Society	Earth Ministry/Washington Interfaith Power & Light	InterAmerican Clean Energy Institute	Northern Arizona Audubon Society	Sisters of the Presentation of the BVM
350 Eastside	Central Sierra Environmental Resource Center	Earthworks	Interfaith Center on Corporate Responsibility	Nuclear Information and Resource Service	Skandinaviska Enskilda Banken (SEB)
350 Maine	Cetacean Society International	EcoFlight	Interfaith Power & Light	Oakland Audubon Society	Skye Advisors LLC
350 Seattle	Charlton-Pollard Historical Neighborhood Association	Ecology Center of Southern California	Iowa Audubon	Olympic Climate Action	Société Générale
350 Silicon Valley	Chequamegon Audubon Society	EEECHO	Izaak Walton League Mangrove Chapter	Olympic Forest Coalition	South Umpqua Rural Community Partnership
350 Vermont	Chicago Audubon Society	EGG350.org, Elgin Green Groups350.org	JP Morgan Chase	Omni Center for Peace, Justice & Ecology	Southern Maine Conservation Collaborative
350.org	Christian Council of Delmarva	Endangered Species Coalition	Juniata Valley Audubon Society	Onondaga Audubon	Southern United Neighborhoods
350Brooklyn	Citi	Environment America	Keeper of the Mountains Foundation	OUT There Adventures	Stand.earth
350NH	CitiBank	Environment Council of Rhode Island	Kentucky Interfaith Power & Light	OVEC-Ohio Valley Environmental Coalition	Standard Chartered
350NYC	Citizen's Committee for Flood Relief	Environmental Protection Information Center	Kern Audubon Society	Pennsylvania Council of Churches	Staten Island Coalition for Wetlands and Forests
A Community Voice	Citizens Local Energy Action Network	Evansville Audubon Society, Inc.	Kids Speak For Parks	Perpetual Motion NW	Staten Island Urban Center, Inc.
ABN AMRO	Clean Energy Action	Everence and the Praxis Mutual Funds	Klamath Forest Alliance	Physicians for Social Responsibility Maine Chapter	Stockbridge Audubon Chapter
Acadia Center	Clean Energy Action - Colorado	Eyak Preservation Council	Labor Network for Sustainability	Polly Dyer Cascadia Great Old Broads for Wilderness	Sunrise Movement
Al Carter Consulting	Clean Yield Asset Management	Fairbanks Climate Action Coalition	Lake Co. Audubon Society	Project Coyote	Sustaining Way
Alaska Community Action on Toxics	Climate Action Now!	Families for a Livable Climate	Laughing Whitefish Audubon Society	Protect Our Winters	SustainUS
Alaska Wilderness League	Climate Action Rhode Island	Figure 8 Investment Strategies	LBC Action	Pueblo Action Alliance	Swedbank
Alaska Wildlife Alliance	Climate Generation: A Will Steger Legacy	First Peoples Worldwide	Leadership Team of the Felician Sisters of NA	Rabobank	TD
Alaskans For Wildlife	Climate Hawks Vote	Florida Division of the Izaak Walton League of America	League of Conservation Voters	Rachel Carson Council	Tennessee Wild
Alaskans Take A Stand	Coalition for Wetlands and Forests	Florida Keys Chapter of the Izaak Walton League of America	Lloyds Banking Group	Rainforest Action Network	The American Alpine Club
Alternatives North	Commerzbank AG	Fox Valley Citizens for Peace & Justice	Lloyd's of London	Rapid Shift Network	The Climate Center
Amazon Watch	Commonwealth Bank of Australia	Franciscan Action Network	Local 100, United Labor Unions	Raptors Are The Solution	The Climate Museum
American Bird Conservancy	Conejos Clean Water	Franciscan Peace Center	LPESM Riau	Region VI Coalition for Responsible Investment	The Land Institute
American Packrafting Association	Congregation of Sisters of St. Agnes	Franciscan Sisters of Perpetual Adoration	Maine Audubon	RESTORE: The North Woods	The Lands Council
Anthropocene Alliance	Conservation Alabama	Friends of Alaska National Wildlife Refuges	Maine Conservation Voters	Rio Grande Indivisible	The Mountain Pact
Arctic Audubon Society	Conservation Congress	Friends of Great Salt Lake	Market Forces	Rivers & Birds, Inc.	The Wilderness Society
Arctic Treks LLC	Conservation Northwest	Friends of the Earth	Michigan League of Conservation Voters	Rocky Mountain Recreation Initiative	Trustees for Alaska
Arctic Wild	Conservationist Wilderness Com	Fund Our Future	Minnesota River Valley Audubon Chapter	Rocky Mountain Wild	Turtle Island Restoration Network
Artic Solar Inc	Conservatives for Responsible Stewardship	Georgia Interfaith Power and Light	Morgan Stanley	Royal Bank of Canada (RBC)	UBS
Audubon Society of Omaha	Cottonwood Institute	Glasswaters Foundation	Movement Rights	Safe Alternatives for our Forest Environment	UniCredit Group
AXA Insurance Company	Crédit Agricole	Global Urban Solutions	Mt. Zion Community Outreach, Inc.	San Diego Audubon Society	Unitarian Universalist Service Committee
Bank of America	Crédit Mutuel	Goldman Sachs	National Audubon Society	San Juan Citizens Alliance	US Bancorp
Bank of Montreal (BMO)	Credit Suisse Group	Great Basin Resource Watch	National Australia Bank	San Luis Valley Ecosystem Council	Utah Physicians for a Healthy Environment
Barclays	Cultural Survival	Great Old Broads for Wilderness	National Wildlife Refuge Association	Santander	Vermont Conservation Voters
Basin and Range Watch	Cypress Chapter of the Izaak Walton League of America	Green America	Native American Rights Fund	Save Our Canyons	Voices for Earth Justice
BBVA	Danske Bank	Green Chalice of the Christian Church (Disciples of Christ)	Native Movement	Save Our Illinois Land	Vote Climate
Bernstein Construction	Decatur Audubon Society	Green Latinos	Natixis	Scotiabank	Washington Wild
BNP Paribas	Defenders of Wildlife	GreenFaith	Natural Resources Council of Maine	Scott Community College Environmental Club	Wells Fargo
Braided River	Detroit Audubon	Greenpeace USA	Natural Resources Defense Council	Seventh Generation Interfaith	Western Environmental Law Center
Brighter Green	Deutsche Bank	Green-Rock Audubon Society	Nature Abounds	Sheep Mountain Alliance	Western Watersheds Project
Bucks County Audubon Society	DNC Environment and Climate Crisis Council	Gwich'in Steering Committee	NatWest	Sierra Club	Westpac
Caixabank	Dominican Sisters ~ Grand Rapids	Harrington Investments, Inc.	NDN Collective	Sierra Club Foundation	Wild Heritage
Californians for Western Wilderness	Dominican Sisters of Sinsinawa Peace and Justice Office	HBCUs Outside	New Energy Economy	Sierra Forest Legacy	WildEarth Guardians
Call to Action Colorado	Dominican Sisters of Sparkill	Hip Hop Caucus	New Jersey Sierra Club, Ocean Group	Sisters of Bon Secours USA	Wilderness in the City
Canadian Arctic Resources Committee	Dominican Sisters of the Roman Congregation	Hispanic Access Foundation	New Mexico Horse Council	Sisters of Charity of Saint Elizabeth	Wilderness Watch
Canadian Imperial Bank of Commerce (CIBC)	DownRiver Alliance	Hrrrl Scouts	New Mexico Sportsmen	Sisters of Mary Reparatrix	Wildlife Adventures
Canadian Parks and Wilderness Society, Yukon Chapter	Dunes-Calumet Audubon Society	HSBC	New Mexico Voices for Children	Sisters of Mercy of the Americas Justice Team	Winter Wildlands Alliance
Cass County MN Chapter, Izaak Walton League of America	Duval Audubon Society	Illinois Division of the Izaak Walton League	North Cascades Audubon Society	Sisters of St. Dominic of Blauvelt, New York	Wintu Audubon Society
Catholic Network US	Earth Action, Inc	Indigenous Environmental Network	Northcoast Environmental Center	Sisters of St. Dominic of Tacoma and Associates	Wisconsin Conservation Voters
Center for Biological Diversity	Earth Ethics, Inc.	Information Network for Responsible Mining	Northeastern Wisconsin (NEW) Audubon Society	Sisters of St. Francis-Dubuque	Wisconsin Metro Audubon Society
Central Colorado Wilderness Coalition	Earth Island Institute	ING	Northern Alaska Environmental Center	Sisters of the Holy Names, U.S.-Ontario Province	Women's Earth and Climate Action Network (WECAN)
					Zumbro Valley Audubon
					Zurich Insurance Group

AIDEA Portfolio Holdings Analysis

Barrow Hanley

Findings:

- As of June 30, 2021 Barrow Hanley identified 21 issues (12 distinct companies) held in the investment portfolio that are on the potential restricted companies list provided by AIDEA
- All of the issues are banks, and cumulatively represent 7% or the portfolio or a market value of $13.4 million
- Barrow Hanley has historically had an overweight allocation to banks, which has varied over time and ranged from a 2.6% o/w three years ago to a 3.5% o/w on June 30.
- Currently, the Financials sector makes up 8.1% of the Bloomberg Aggregate Bond Index, and Bank make up 5.5% of that total.

Cusip	Security	Coupon	Maturity Date	Pct Assets (%)	Market Value Plus Accrual ($)
06051GFC8	Bank of America	5.000	1/21/2044	0.6	1,162,929.27
06051GJS9	Bank of America	1.734	7/22/2027	0.5	879,931.34
06051GJZ3	Bank of America	2.087	6/14/2029	0.1	287,732.45
06367WHH9	Bank of Montreal	3.300	2/5/2024	0.4	731,842.87
06739GCR8	Barclays	1.700	5/12/2022	0.2	319,289.25
172967MP3	Citigroup Inc	4.412	3/31/2031	0.8	1,587,557.30
38141GYA6	Goldman Sachs Gp	1.431	3/9/2027	0.4	716,474.33
38141GYB4	Goldman Sachs Gp	2.615	4/22/2032	0.2	308,309.83
38141GYG3	Goldman Sachs Gp	1.542	9/10/2027	0.3	574,250.58
46625HRY8	JPMorgan Chase	3.782	2/1/2028	0.3	647,819.88
46647PAJ5	JPMorgan Chase	3.882	7/24/2038	0.3	583,976.00
46647PBF2	JPMorgan Chase	2.301	10/15/2025	0.5	1,051,635.77
6174468R3	Morgan Stanley	0.864	10/21/2025	0.1	220,300.52
6174468U6	Morgan Stanley	1.794	2/13/2032	0.3	571,578.53
61744YAK4	Morgan Stanley	3.591	7/22/2028	0.3	668,244.80
78015K7C2	Royal Bank of Canada	2.250	11/1/2024	0.3	672,836.80
902674YA2	UBS AG London	1.750	4/21/2022	0.2	339,868.95
91159HJA9	US Bancorp	1.375	7/22/2030	0.2	469,428.94
94974BGU8	Wells Fargo Co	4.750	12/7/2046	0.2	393,131.06
95000U2J1	Wells Fargo Co	2.572	2/11/2031	0.5	941,283.70
961214ER0	Westpack Banking	1.150	6/3/2026	0.2	300,480.75
				6.9	$ 13,428,902.92

AIDEA Portfolio Holdings Analysis

Barrow Hanley

Attribution:

- Over a 1-year period through June 30, 2021 the return differential between the existing portfolio and the portfolio that excludes the restricted companies is **+12 bps**.
- The return differential over a 3-year period is **+8 bps**.
- The analysis assumes an increase in the remaining credit holdings within the portfolio, as banks were reduced, in order to keep the portfolio equally allocated to credit as the composite strategy.

Portfolio 1yr Return	0.15%
Portfolio 1yr Return ex holdings list	0.27%
Differential	0.12%

Portfolio 3yr Return	6.00%
Portfolio 3yr Return ex holdings list	6.08%
Differential	0.08%

Forward-Looking Assessment:

- As of June 30, 2021 Banks represented 5.5% of the Bloomberg Barclays Aggregate Index and nearly 18% of the Bloomberg Barclays U.S. Investment Grade Index. Having little or no exposure to the subsector can certainly impact performance over time.
- Although the period under evaluation shows that excluding banks would have helped, there will likely be a point in time when their contribution to excess returns is meaningful. One such example would me a more normalized interest rate environment.
- Since the GFC there has been greater regulatory oversight on money center banks and also unprecedented monetary stimulus which has resulted in extremely low interest rates.
- Barrow Hanley continues to be supportive of banks:
  - Banking subsector less likely to experience M&A activity which can be harmful to bond holders
  - Prefer the cyclical outlook for Financials, in general, over Industrials; Banks' partial hedge against higher rates is favorable
  - Banks are higher quality issues due to their strong capital ratios
  - Banks provide liquidity to the portfolio
- If AIDEA decides to restrict these companies, Barrow Hanley's Charles River Compliance System can be hardcoded so that the portfolio does not receive an allocation to these specific issues.

AIDEA Portfolio Holdings Analysis

Alaska Permanent Capital Management

Findings:

- As of June 30, 2021 APCM identified 7 issues held in the investment portfolio that are on the potential restricted companies list provided by AIDEA
- All of the issues are banks, and cumulatively represent 5.7% or the portfolio or a market value of $10.5 million. This exposure has been roughly stable over the past three years.

Security	Percent of Portfolio	Market Value
BNS 1 5/8 05/01/23	0.38%	$715,372
GS 3 5/8 01/22/23	0.85%	$1,574,715
JPM 3 7/8 02/01/24	1.16%	$2,166,260
WFC 3.3 09/09/24	0.58%	$1,078,130
MS 3 7/8 04/29/24	0.61%	$1,128,950
BAC 4.443 01/20/48	1.00%	$1,859,670
C 4.281 04/24/48	1.07%	$1,990,128

AIDEA Portfolio Holdings Analysis

Alaska Permanent Capital Management

Attribution:

- The combined annualized return for the seven issuers owned by APCM was approximately **16 basis points** to the portfolio taken in account at the time of purchase. This compares to similar Treasuries over the same time periods of **10 basis points.**
- The holdings on the restricted list drove approximately **6 basis points** of outperformance cumulatively versus treasuries since the time of purchase.
- Looking at other financial names (such as regional banks) with similar durations, the outperformance driven by the holdings on the restricted list drops to a few basis points, becoming effectively negligible.

Forward-Looking Assessment:

- Most of these names are highly liquid and generally come to market with new issues throughout the year. These names commonly have a higher credit rating than regional banks within the index.
- Exiting the positions should not have an effect on the portfolio corporate duration over time. The duration of the combined restricted list securities is similar in duration to that of banking sector of the Bloomberg aggregate.
- Currently when corporate spreads are at historical tights, the impact to the performance moving forward would be low over the near future. Very little outperformance will be gained from companies on the restricted list compared to other options.
- There may be slight challenges in finding more financial names as the names represented on the restricted list are very liquid, but overall, APCM believes there are enough credit names and spread product to make up for yield that may be lost.
- If it is the desire of the AIDEA board to remove these names the immediate impact on the portfolio would be rotating out of these into more regional bank names and/or pushing up exposure to other financial names and/or sectors already in the portfolio.

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