#### VII. STANDING COMMITTEES

#### B. Finance, Audit & Facilities Committee

Consolidated Endowment Fund Asset Allocation Review

This item is for information only.

Attachment Consolidated Endowment Fund Asset Allocation Review

#### **F-9**



**Consolidated Endowment Fund Asset Allocation Review** 

A Report to the Board of Regents May 13, 2010

> Treasury Office University of Washington

F-9.1/205-10 5/13/10

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### **Executive Summary**

The Consolidated Endowment Fund (CEF) policy asset allocation is reviewed annually with UWINCO. Historically, changes to the asset allocation policy are presented to the Board of Regents for approval every two to five years and are reflective of the continuing evolution of the investment program and the capital markets.

The proposed changes to the CEF asset allocation are summarized below:

- The asset allocation is structured around two distinctive "Funds", one focused on Capital Appreciation and the other on Capital Preservation. Strategic asset allocation targets are defined by asset class and policy ranges are provided only at the broad Fund level.
- Proposed asset class targets differ from the current policy as follows:

•	Emerging markets equity	+4%	(to 17% of the CEF)	
•	Fixed income	+3%	(to 15% of the CEF)	The proposed policy portfolio offers a similar expected return as the
•	Developed markets equity	-7%	(to 36% of the CEF)	current policy portfolio but with an improved risk profile.
•	Opportunistic (NEW)	+6%	(to 6% of the CEF)	
•	Real assets	-4%	(to 11% of the CEF)	
•	Absolute return	-3%	(to 15% of the CEF)	

Risk control guidelines place constraints on single manager, country and sector exposure. Liquidity controls ensure adequate short term liquidity to funding requirements. Exposure to private investments (current exposure plus unfunded commitments) is limited to 50% of the CEF.

Endowment spending is considered in the context of asset allocation and the topic for an upcoming Board meeting.

# **Roles and Responsibilities**

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#### **UW Investment Program**

The Board of Regents of the University of Washington is vested by statute with responsibility for the management of the properties of the University, including the Consolidated Endowment Fund and other University funds.

Investment program oversight resides with the Finance, Audit and Facilities Committee (FAF), a subcommittee of the Board of Regents. In May 2001, the Board approved the establishment of an advisory committee, the University of Washington Investment Committee (UWINCO), consisting of Board members and external investment professionals. In 2004, the Board approved the appointment of the University's first Chief Investment Officer (CIO) to manage the day to day activities of the investment portfolios.

From the "Statement of Investment Objectives and Policy for the Consolidated Endowment Fund"

#### Governance

University of Washington Investment Committee (UWINCO)

#### Advises the CIO

- Investment planning
- Asset allocation
- Manager identification
- Market trends

Advises the Board of Regents

• Investment program oversight

#### Chief Investment Officer (CIO)

#### Implements investment program

- Day-to-day management
- Tactical asset allocation
- Manager appointments
- Manager terminations
- Risk management
- Research

#### **Monitors results**

Performance reporting

Governance of the investment program is defined around clearly established roles and responsibilities.

Investment progr

#### **Board of Regents**

Sets Investment Policy

- Spending rate
- Strategic asset allocation
- Delegations

Appoints investment officers / advisors

- Chief Investment Officer
- UWINCO Members
- Investment consultants

**Review results** 

Program oversight/accountability

### The University of Washington Consolidated Endowment Fund

In 1905, the University of Washington received its first cash endowed gift of \$400, thus beginning the accumulation of endowed funds that are held today. By December 31, 2009, the University of Washington's endowment totaled \$1.8 billion and contained 3,207 individual endowment funds. Approximately 80% of the funds held in the Consolidated Endowment Fund (CEF) are restricted. These funds can be used solely to support programs specified by the donor. The remaining 20% consists primarily of long-term operating monies invested by policy in the CEF by the Board of Regents.

Donor-designated gifts in the CEF are currently funding scholarships and fellowships (28%), professorships and chairs (25%), research (9%), general academic support (18%) and other university activities. Nearly half of the endowment benefits the overall University, with the remaining focused on specific units, including Academic Medical Affairs (24%), Arts and Sciences (12%), Engineering (7%), and the Business (5%) and Law (4%) Schools.

Individual endowment funds are commingled in the CEF for investment purposes and unitized much like a mutual fund. Distributions to endowed programs are made quarterly.

Over the past ten years, the CEF provided \$638 million in endowed program support. This represents approximately 3% of the University's annual operating revenues.

#### **Consolidated Endowment Fund Characteristics**

as of December 31, 2009 (\$ = MM)



The Consolidated Endowment Fund consists of 3,207 individual endowments which are commingled for investment purposes much like a mutual fund. Most endowments in the CEF are restricted to the purpose designated by the donor.

# **Asset Allocation Process**

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### **The Endowment Model**

Endowment portfolios are commonly managed around a core set of objectives focused on the need to provide support for endowed programs in perpetuity. The concepts of 'intergenerational equity' and 'purchasing power parity' are used to underscore an institutional commitment to provide the same level of program support in the future as is provided today.

The investment approach designed to meet these objectives is often referred to as the Endowment Model. It implies a high allocation to equity including a substantial investment in alternative assets in order to provide ongoing program support and grow the endowment at the rate of inflation.

The trend towards higher equity exposure over the past several decades led to superior performance by endowments, particularly larger endowments with more aggressive portfolios. Diversification was seen as key in the management of portfolio risk and endowment portfolios became increasingly diverse.

### **CEF Asset Allocation Over Time**



<sup>1</sup>Proposed change to asset allocation in 2011 will create a new asset class "Developed Markets Equity" using funds from the existing classes: Non-Marketable Alternatives, Domestic Equity and International Equity.

Over the past twenty-five years, the CEF has grown significantly in size and complexity. The portfolio today is diversified across many dimensions: asset classes, countries, sectors, investment styles, managers.

## **The 2008 Financial Crisis**

Questions as to the efficacy of the Endowment Model were raised following the 2008 global market crisis. Diversification failed to protect endowment values as all assets – with the exception of U.S. Treasuries – dropped together. Some endowments with high allocations to alternatives found themselves squeezed for liquidity, and forced to sell their more liquid assets at the worst possible time in order to fund their liabilities. Some attempted to sell private investments at steep discounts in the secondary market. Others secured lines of credit. Liquidity became a buzzword in the industry – a risk not fully considered by most endowments prior to 2008 in structuring their investment portfolios.

Several factors differentiated the UW endowment from its peers during the financial crisis:

- The CEF represents a relatively small part (3%) of the UW annual operating budget.
- Most CEF endowments are restricted as to use. Many of the largest private universities rely on their endowments for a significant portion of their annual operating budget.
- Illiquid investments in the CEF were already constrained as to exposure. The market value of private equity investments plus unfunded commitments totaled less than 40% in 2008 as compared to percentages 60%, 70% and even higher for some endowment peers.
- Liquidity was strong with higher than normal cash and fixed income levels so that liabilities such as program distributions and capital calls on unfunded commitments were covered for an extended period.
- A strong liquidity position also enabled the UW to take advantage of opportunities to upgrade its portfolio as managers previously inaccessible opened their doors to new capital.
- The Board of Regents was quick to lower spending until markets have a chance to recover.

#### **Asset Allocation Trends at Other Universities**



Asset allocation trends among large endowments mirror the UW's experience.

## **The Policy Portfolio**

Asset allocation policies provide the framework within which institutional investors allocate capital across various asset classes, each with distinct risk and return characteristics. A policy portfolio is an embodiment of endowment's long-term asset allocation and is intended to provide the flexibility to perform well under varying conditions.

The policy portfolio is an explicit expression of the risk tolerance of an institution. Once established by the Board, the policy portfolio provides a set of guidelines around which portfolio decisions can be made and active bets measured.

Absent a compelling reason to act otherwise, the policy portfolio represents the most appropriate long-term asset allocation to meet the institution's objectives. It should be revisited annually but revised infrequently.

## **CEF Policy Portfolio**

#### Current Asset Allocation as of December 31, 2009 (\$ in MM)



The policy portfolio provides a set of guidelines around which portfolio decisions can be made and active bets measured.

#### **Developing the Policy Portfolio**

The Policy Portfolio is structured using a combination of quantitative modeling and informed market judgment. Propriety statistical models, developed and enhanced over the past eight years in partnership with the UW Computation Finance Program, are employed to estimate risk and return profiles of various asset allocation alternatives and to test the sensitivity of results to changes in input assumptions. These models are based upon the sound statistical and economic principles that underlay modern portfolio theory and are used primarily to understand portfolio risk rather than to identify the best asset allocation. The models are useful tools in understanding the interaction among asset classes. The modeling approach used by the UW is summarized below:

- Forecasts and models are based on sound statistical and economic principles.
- Broad asset class returns are difficult to forecast unless the team has a strong view otherwise, use equilibrium return/risk forecast.
- Risk is modeled from a conservative perspective taking into account outliers and market trends.
- Multiple models and perspectives are employed to mitigate bias.
- Models are linked to portfolio liabilities.
- Market outlook is used to evaluate opportunities and tactical positioning.
- Judgment is critical. Prescriptive acceptance of model outputs is avoided.

#### **Quantitative Asset Allocation Modeling**



Quantitative models are used primarily as a means of understanding portfolio risk rather than for the exact answer to the asset allocation question.

### **The Efficient Frontier**

What It Is: Different combinations of portfolio securities and asset classes produce different levels of return and risk. The efficient frontier represents the best of these combinations -- those that produce the maximum expected return for a given level of risk.

In 1952, Harry Markowitz set the efficient frontier idea in motion when he published a formal portfolio selection model in *The Journal of Finance*. Markowitz continued to develop and publish research on the subject over the next twenty years, and other financial theorists contributed to the work. Markowitz won the 1990 Nobel Prize in Economics for his work on the efficient frontier and for related contributions to modern portfolio theory.

**How It Works:** Every point on the efficient frontier represents at least one portfolio. The relationship that asset classes have with each other is an important aspect of the efficient frontier. Some asset classes move the same direction through time – that is, they are correlated. Other asset classes move differently through time. The more out of sync the asset classes in the portfolio are (that is, the less correlated they are), the smaller the risk (volatility) of the portfolio that combines them. The curved shape of the efficient frontier is formed because there is a diminishing marginal return to risk. Each unit of risk added to a portfolio gains a smaller and smaller amount of return.

Why It Matters: When Markowitz introduced the efficient frontier, it was groundbreaking in many respects. One of its largest contributions was its clear demonstration of the power of diversification.

Investors tend to choose, directly or indirectly, portfolios that generate the largest possible returns with the least amount of risk. In other words, they tend to seek portfolios that are near or on the efficient frontier. With respect to the endowment, the efficient frontier framework is used to evaluate possible asset allocations in context of risk and return.

#### **Modeling the CEF Efficient Frontier**



The proposed policy changes improve the risk profile of the CEF. This can be seen in the leftward movement of the portfolio relative to the 2005 and 2008 CEF policy portfolios.

### **Liability Risk Indicator**

<u>Purchasing power impairment risk</u> is a long-term measure commonly used in developing the definition of an institution's risk appetite. It refers to the likelihood of losing half of the purchasing power of the endowment through capital depreciation over a 50-year horizon. This is a forward looking risk measure. It gauges intergenerational equity – whether the spending level today will compromise spending for future generations. For example, if an endowment is worth \$100 thousand today, this measure indicates the chance that in 50 years the real (inflation-adjusted) value of the endowment will be \$50 thousand or less.



### **Impairment Risk**

	Spending Level	Impairment Risk	
The spending level includes distributions to endowed programs and administrative fees	6.5%	64%	
	6.0%	53%	
	5.5%	41%	Impairment risk is the probability of a real
	5.0%	28%	value over a fifty year
	4.5%	19%	periou.
	4.0%	11%	
	3.5%	7%	
	3.0%	3%	

Through its spending and asset allocation policies, an endowed institution balances the competing demands of current and future generations.

# **Asset Allocation Recommendation**

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## **Summary of Proposed CEF Policy Changes**

The investment team recommends a more integrated approach to asset allocation that allows greater flexibility in allocating investments among asset classes while managing the portfolio within a long-term risk framework. The proposed policy changes are summarized below:

- 1. Portfolio strategies are split between the two broad investment categories of "Capital Appreciation" and "Capital Preservation".
- 2. Policy ranges are provided only at the broad investment category level.
- 3. Asset classes are defined as follows:

#### 70% CAPITAL APPRECIATION

- <u>17% Emerging Markets Equity</u> includes public and private international emerging markets equity
- <u>36% Developed Markets Equity</u> includes public and private domestic and international developed markets equity
- <u>11% Real Assets</u> includes public and private investments in real estate, commodities and timber
- <u>6% Opportunistic</u> includes credit investments formerly a meaningful piece of the absolute return strategy but with credit investments drawn also from real assets and private equity

#### **30% CAPITAL PRESERVATION**

- <u>15% Absolute Return</u> includes diversifying investments with a low correlation to global equity markets
- <u>15% Fixed Income</u> typically includes a 1% to 3% allocation to cash
- 4. Risk control guidelines constrain exposure to individual managers, countries and sectors.
- 5. Private investments are more broadly defined to include not only private equity but private real assets and other illiquid long-term investments. The maximum exposure to private investments is 50% of the CEF and includes the current market value of the private investments' portfolio plus unfunded commitments.

#### **Proposed CEF Policy Portfolio**

Current Asset Allocation as of December 31, 2009 (\$ in MM)



The proposed changes to the CEF asset allocation support a more integrated approach to portfolio management within a defined long-term risk profile.

### **Policy Change Rationale**

The proposed changes to the policy asset allocation are informed by the recent turmoil in the capital markets. The focus – and the impact – is on the risk profile of the endowment. The proposed asset allocation meaningfully lowers the volatility of the CEF relative to the current policy portfolio. The expected return is essentially unchanged at 8.0% but the Sharpe Ratio is improved as a result of the lower volatility.

A higher allocation to fixed income provides improved liquidity to the CEF and helps ensure that the Fund will be able to satisfy the full range of portfolio commitments. Increased awareness of illiquidity risk led the Investment Team to institute new measures for monitoring and managing portfolio liquidity over the past year.

Even before the global financial crisis, rising correlations had blurred the distinction among asset classes making strict adherence to policy targets less useful as means of managing portfolio risk. The proposed asset allocation clearly separates the CEF into two simply defined categories of investments: those which facilitate growth or appreciation and those which preserve endowment values.

The proposed asset allocation deemphasizes distinct asset classes thereby facilitating a more integrated approach to managing the endowment. This change is consistent with the effort since the CIO's arrival in 2005 to build a team of portfolio generalists able to approach decision-making from the perspective of total portfolio impact rather than in the confines of a single asset class.

# Impact of Proposed Changes on CEF Risk / Return Profile

	C	EF Policy Portfolic	DS	Current CEE	Implementation to
Asset Class	2005	2008	2010 Proposed	Asset Allocation	2010 Proposed Policy Portfolio
	(A)	(B)	(C)	(D)	(C) - (D)
<b>Emerging Markets Equity</b>	10%	13%	17%	15%	+2%
Developed Markets Equity	50%	43%	36%	43%	-7%
Real Assets	12%	15%	11%	10%	+1%
Opportunistic / Credit	0%	0%	6%	8%	-2%
Capital Appreciation Fund	72%	71%	70%	76%	-6%
Absolute Return	16%	18%	15%	12%	+3%
Fixed Income	12%	11%	15%	12%	+3%
Capital Preservation Fund	28%	29%	30%	24%	+6%
Volatility	11.3	11.2	10.7	11.3	-0.6 Reduction in volatility
Sharpe Ratio	.69	.70	.74	.69	+.05 Improved Sharpe Ratio

The proposed asset allocation offers a similar return as previous policies (8%) but with an improved risk profile.

# Liquidity

As long-term investors, endowment investors frequently accept illiquidity in exchange for opportunities to generate excess returns. Historically, many larger endowments questioned the need for short-term liquidity in light of their long-term time horizon. As demonstrated in the 2008 market meltdown, liquidity matters. Without short-term liquidity, investors become forced sellers in distressed markets. Prudence dictates that investors maintain sufficient liquidity to meet the full range of portfolio commitments. For endowments, this includes distributions to endowed programs and contractual commitments to external private equity managers.

The proposed asset allocation addresses liquidity from several perspectives. It provides two years of liability coverage largely through a higher allocation to cash and fixed income securities. In addition, private investment exposure (net asset value plus unfunded commitments) is limited to 50% of the CEF. This change is consistent with the current positioning of the CEF where cash levels rose before and during the market crisis to take advantage of opportunities to upgrade the portfolio. Likewise, the constraints on private investment exposure have been in place for nearly a decade and it is these constraints that provided the UW with the flexibility to invest capital at a time when our peers were constrained by their current commitments.

## **CEF Liquidity Estimates**

	Weekly	Monthly	Quarterly	1-Year	Total
Cash / Fixed Income	204	204	204	204	204
Public Equity	342	612	647	697	718
Absolute Return / Hedge Funds		4	147	351	397
Private Funds					521
Cumulative Total	546	820	998	1252	1840
As a % of the CEF	30%	45%	54%	68%	

\* Time required to cash out portfolios

#### **Private Investments**

	Current CEF Exposure			Uncalled ( Commitn	Capital nents	Current CEF Exposure
	\$ Net Asset Value	% of CEF		\$	% of CEF	plus Uncalled Capital (% of CEF)
Private Equity	267	15%		138	8%	22%
Private Real Assets	133	7%		94	5%	12%
Private Credit Opportunities	121	7%	_	10	1%	7%
Total Private Investments	521	28%		242	13%	41%
						Maximum 50%

The efficient management of liquidity suggests a level that provides for two years of endowed program distributions along with sufficient capital to meet contractual commitments to private investment managers. Heightened sensitivity to illiquidity risk since the 2008 financial crisis led to enhanced liquidity monitoring and controls.

# Spending

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### **Endowment Spending**

The mechanism for determining the annual distribution level to endowed programs is defined by the Board of Regents in the endowment investment policy. A well defined spending policy takes for its conceptual framework the two principle goals of endowment management:

- 1. Provide a significant and stable flow of funds to operating budgets
- 2. Maintain the purchasing power of the endowment over the long term

These objectives are typically met by establishing a spending rate consistent with the institution's tolerance for risk. A higher spending rate requires a higher allocation to risk assets. Stability in the distribution flow is managed through the use of a smoothing mechanism, commonly three to five years, to soften the disruptive impact of short term capital market volatility.

#### **Historical Capital Markets and Sustainable Spending Levels**

U.S. Equity / U.S. Bond Ratio	S. 1900–2009 (110 years)	1900–1979 (80 years)	1900–1969 (70 years)	Deflationary Period 1928–33 (6 yrs)	Inflationary Period 1968–81 (14 yrs)
0/100 <sup>1</sup>	2.4	1.1	1.5	9.7	(3.8)
10/90	3.0	1.8	2.2	9.3	(3.5)
20/80	3.5	2.4	2.9	8.8	(3.2)
30/70	4.0	2.9	3.5	8.2	(2.9)
40/60	4.4	3.5	4.1	7.5	(2.6)
50/50	4.8	3.9	4.7	6.6	(2.4)
55/45	5.0	4.2	4.9	6.2	(2.3)
60/40	5.2	4.4	5.2	5.7	(2.2)
65/35	5.3	4.6	5.4	5.2	(2.1)
70/30	5.5	4.8	5.7	4.6	(2.0)
80/20	5.8	5.2	6.1	3.4	(1.8)
90/10	6.0	5.5	6.5	2.1	(1.6)
100/0 <sup>2</sup>	6.2	5.8	6.9	0.7	(1.5)
Inflation	3.0	2.8	2.2	(4.4)	7.0

<sup>1</sup> Bonds only <sup>1</sup>2Equities only

Sources: Citigroup Global Markets, Common-Stock Indexes (Cowles Commission), Federal Reserve, Global Financial Data, Inc., Standard & Poor's, and U.S. Department of Labor - Bureau of Labor Statistics

Historically, a 70% allocation to equity was sufficient to support an inflation adjusted spending level of 5%. Higher spending was possible only through a higher allocation to risk assets.

## **CEF Spending Policy**

Per unit distributions to endowed programs were decreased by 25% in both FY '09 and FY '10 after which distributions are held constant at the FY '10 level. This interim policy went into effect in March 2009 and will be revisited by the Board of Regents no later than June 30, 2013 to determine the appropriate next steps.
Spend 5% of the average market value of the CEF for the previous three years.
Intergenerational Equity: This concept balances the needs of current and future beneficiaries. It requires policies that allow spending to change at approximately the same rate as inflation with impairing principal over the long term.
Distributions are administered on a quarterly basis.
Changes to the spending policy require approval of the Board of Regents.
A 1.0% annual administrative fee is charged against the endowment: 0.8% to the Advancement Office and 0.2% to the Investment Office.

### **Spending and Inflation**

Required to Meet the Long Term Spending Target							
Endowment Distributions	5.0%	Long Term Policy Rate					
Advancement Office	0.8%						
Treasury Office	0.2%	Administrative Fees					

#### Expected Inflation3.0%Consumer Price IndexTotal Nominal Return Required9.0%

\* Return is assumed net of investment fees (manager, consulting, custodial and legal) of approximately 50 b.p.

	Distribution	Rate plus A	dministrati	ve Fees	
	3.0%	4.0%	5.0%	6.0%	7.0%
1.0%	4.0%	5.0%	6.0%	7.0%	8.0%
2.0%	5.0%	6.0%	7.0%	8.0%	9.0%
3.0%	6.0%	7.0%	8.0%	9.0%	10.0%
4.0%	7.0%	8.0%	9.0%	10.0%	11.0%
5.0%	8.0%	9.0%	10.0%	11.0%	12.0%
6.0%	9.0%	10.0%	11.0%	12.0%	13.0%
7.0%	10.0%	11.0%	12.0%	13.0%	14.0%
8.0%	11.0%	12.0%	13.0%	14.0%	15.0%
100					

#### Required Nominal Return Matrix

Long Term spending plus inflation rate estimate

Program distributions, administrative fees and inflation are critical factors in defining a sustainable level of program support.

### **Next Steps in Endowment Spending**

Endowment spending will be reviewed in detail at an upcoming Board of Regents meeting. The review will include the identification of criteria for lifting the interim spending policy and discussions of potential changes to the long-term spending policy.

In addition, Cambridge Associates will provide an update on spending at other colleges and universities since the 2008 financial crisis.

#### **Lower Return Environment Ahead**

Asset Class / Fund	UW	Investment Managers & Bank	Investment Consultants	Historical Returns *
Emerging Markets Equity	11%	10%	9%	14%
Developed Markets Equity	9%	9%	8%	10%
Real Assets	8%	7%	7%	8%
Opportunistic / Credit	7%	7%	7%	11%
<b>Capital Appreciation Fund</b>	6.4%	6.0%	5.6%	7.3%
Absolute Return	7%	6%	6%	11%
Fixed Income	3%	3%	4%	6%
<b>Capital Preservation Fund</b>	1.5%	1.4%	1.5%	2.5%
TOTAL CEF RETURN	7.9%	7.4%	7.2%	9.8%

\* Historical returns represent the longest time series available for each asset class. Composite returns are calculated using the 2010 proposed CEF asset allocation.

# Most market experts anticipate a lower return environment over the next three to five years compared with historical averages.