Contact: Patrice Sayre

<u>Diversified Portfolio Investment Alternative (Non-endowment funds)</u>

<u>Action Requested</u>: Receive the information and give initial consideration. No authorization requested at this time.

<u>Executive Summary</u>: The Regents Investment Policy stipulates that it is the intent of the Board that investment portfolios be broadly diversified, that the approach to investment shall be disciplined and consistent over time and among asset classes, and that allocations among asset classes shall be modified or new classes or investment strategies added when such actions are expected to produce incremental returns, to reduce risk, or both.

In accordance with Regents Investment Policy, the University of Iowa has worked closely with Wilshire Consulting over several months and now suggests for the committee's initial consideration the addition of a Diversified Portfolio Investment Alternative. This strategy includes a number of distinct investments that when taken together have the capability of providing increased return potential with effective management of overall risk. Wilshire Consulting has modeled this portfolio over extended historical periods.

Background: The University of Iowa has three externally managed investment pools:

- Long term endowment pool totals $246 million
- Intermediate pool (quasi-endowment) totals $94 million,
- Operating pool totals $377 million.

The largest of these pools, the operating pool, consists of non-endowment funds which are managed by three external fund managers - BlackRock, Wellington, and the Commonfund. In addition to these pools, the University of Iowa manages internally and through money market accounts a liquidity pool of between $250 million - $300 million and has restricted funds separate from this that represent bond proceeds and restricted debt service reserves.

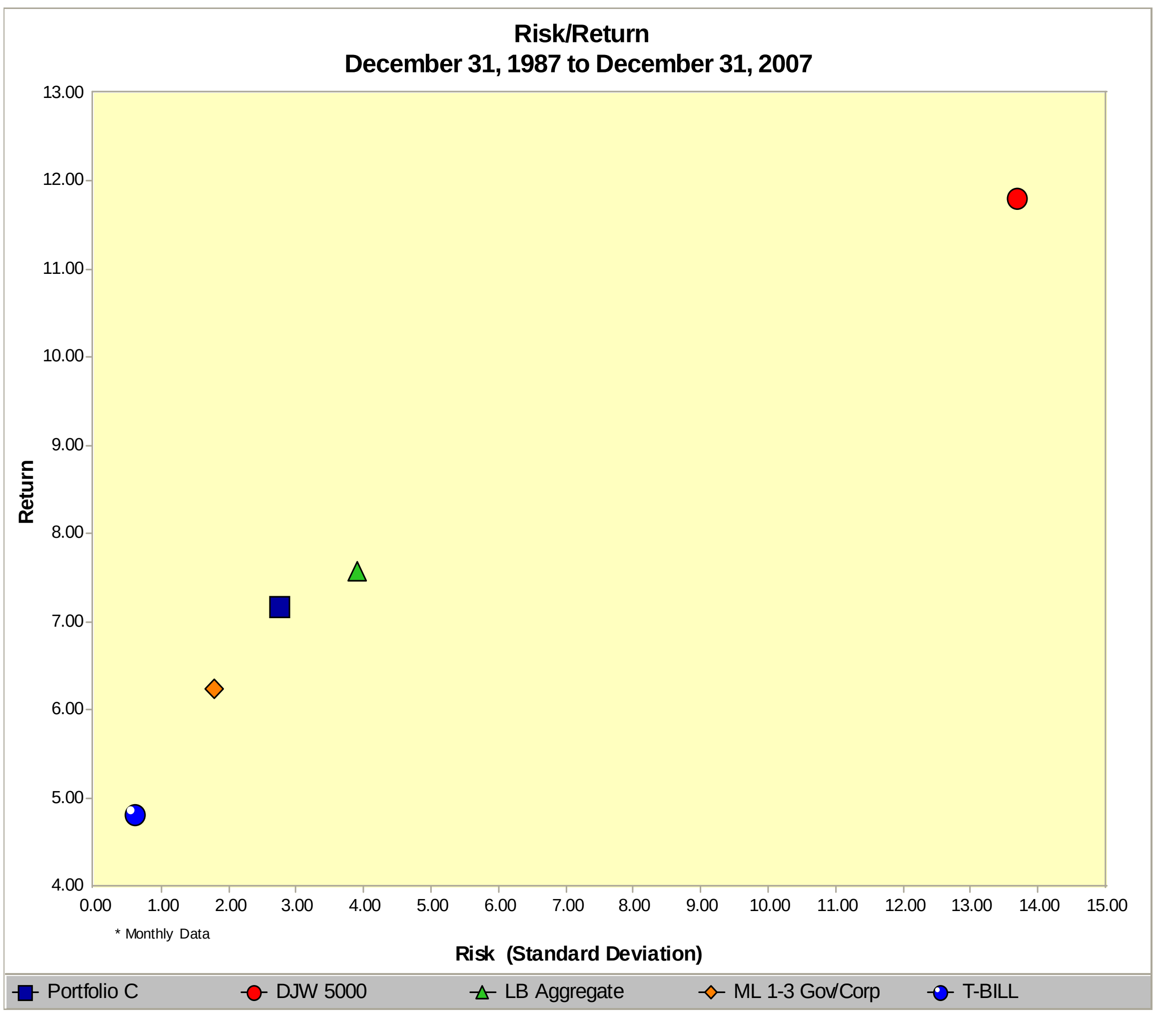
After a careful study of operating cash flows and consultations with current and past business partners, including our current investment fund managers - BlackRock, Wellington and the Commonfund, the University of Iowa engaged in active discussions of investment changes with the University of Iowa's Investment Advisory Committee and Wilshire Consulting.

The following University of Iowa faculty serve on the Investment Advisory Committee: Tippie College of Business, Associate Dean and Professor of Economics Marlynne Ingram and Professor of Economics George Neumann, Associate Finance Professors Matthew Billett & Ashish Tiwari, Clinical Finance Professor John Spitzer, Assistant Finance Professor Todd Houge, and College of Law Professor Sheldon Kurtz. Consultation and additional analysis is on-going with Wilshire Consulting.

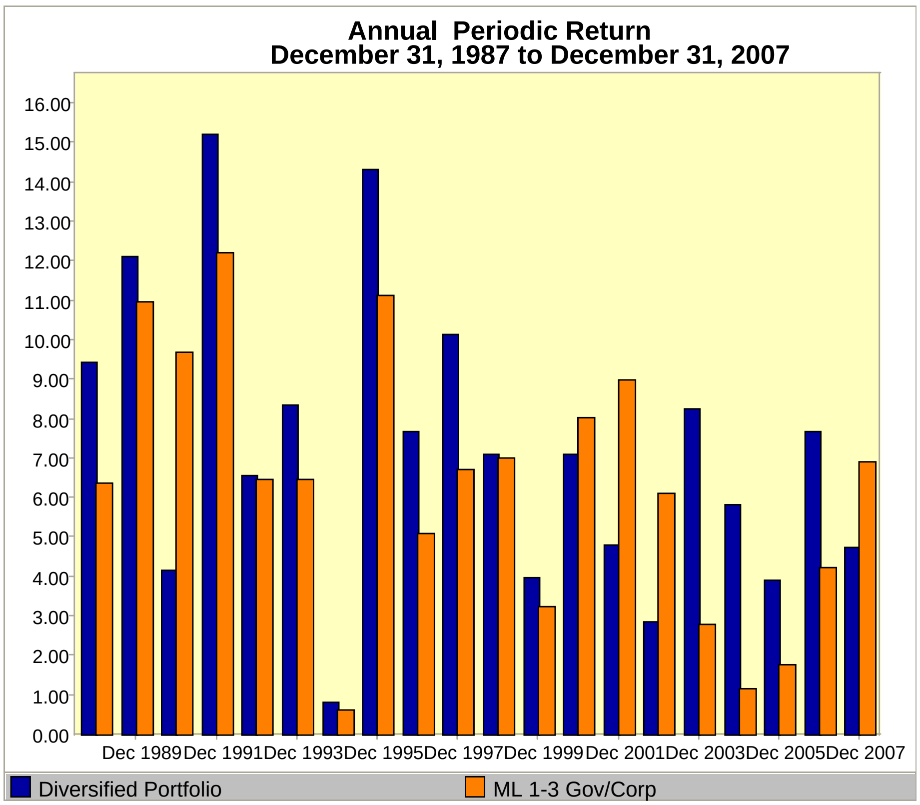
Preliminary Proposal: The initial target asset allocation of a Diversified Portfolio and the individual benchmarks proposed by Wilshire Consulting are as follows. Wilshire Consulting also recommends implementation of the diversified pool approach utilizing low cost index funds available in these asset categories.

Asset Class	Target	Benchmark
Cash	40%	T-Bill (91 day)
Core Fixed Income	30%	Lehman Aggregate
High Yield	5%	Lehman US Corp HY Index
TIPS	10%	Lehman US TIPS Index
U. S. Equities	8%	MSCI US Broad Mkt Index
Non-US Equities	2%	FTSE All-World ex US Index
REITS	5%	MSCI US REIT Index

Wilshire Consulting prepared the following risk/return analysis that compares the risk and return profile of the proposed Diversified Portfolio as compared to the T-Bill (91 day) and benchmarks used for the current intermediate pool (Lehman Aggregate) and the externally managed operating pool (Merrill Lynch 1-3 Year Government/Corporate):



The Diversified Portfolio provides increased return potential with a similar level of risk to the Merrill Lynch 1-3 Year Government/Corporate Index – the current benchmark for the operating portfolio externally managed by BlackRock and Wellington. The Diversified Portfolio also provides a similar level of return potential but decreased risk as compared to the Lehman Aggregate – the current benchmark for the intermediate portfolio (quasi-endowment) managed by Reams and Dodge & Cox. Wilshire Consulting projects an increase in expected return of approximately 75 basis points compared to the current 100% fixed income operating pool externally managed and benchmarked to the Merrill Lynch 1-3 Year Government/Corporate Index. Comparative Annual Return is provided in the following chart:



Implementation: Certain Regent Investment Policy amendments would be required to allow for the establishment of an alternative investment pool with the diversified approach outlined above. The policy modifications would include adding a definition of operating funds, and the University of Iowa recommends adding a definition of operating funds similar to the definition used in Iowa Code 12B.10A Public Investment Maturity and Procedural Limitations, subsection 1. The policy modifications would effectively allow prudent investment alternatives for non-endowed funds.

Implementation may be done over a period of several months. No funds from the University of Iowa's liquidity pool or short term funds would be included. The liquidity pool includes all funds needed to meet day to day and month to month cash flow requirements.

Summary: The University of Iowa suggests review of this information with the Audit/Compliance and Investment Committee. Following Committee consultation and comments, the University of Iowa will return at a subsequent meeting with a specific proposal for Committee consideration and action.

University of Iowa

Diversified Investment Pool

Mark E. Brubaker, CFA
Managing Director

Michael J. Dudkowski
Managing Director

June 11, 2008

Executive Summary

- This presentation evaluates alternatives for the investment of short- and medium-term funds (i.e. those funds held outside the long-term endowment pool).
- The alternatives presented herein offer potential for incremental return while being mindful of the funds' investment horizons and objectives.
  - Maintain the safety of the principal
  - Maintain the necessary liquidity to support operational needs
  - Obtain a reasonable level of return for a prudent level of risk
- Specifically, this presentation recommends a "diversified pool" approach with specific asset mix targets and rebalancing ranges that can be implemented with low cost index fund vehicles. By broadly diversifying the portfolio beyond cash and fixed income investments, overall risk can be managed while pursuing higher overall returns.

Considerations

1. Authorized investments
   - Iowa code
   - Fund investment guidelines
2. Asset class categories
   - Cash equivalents
   - Short term fixed income
   - Core fixed income
   - High yield fixed income
   - TIPS (Treasury Inflation Protected Securities)
   - US Equities
   - Non-US Equities
   - REITs (Real Estate Investment Trusts)
3. Available investment pools
   - Liquidity pool
   - Intermediate-term fixed income (operating accounts)
   - Long-term fixed income (quasi funds)

Asset Allocation Process

1. Determine cash flow requirements*
   - Determine appropriate investment constraints

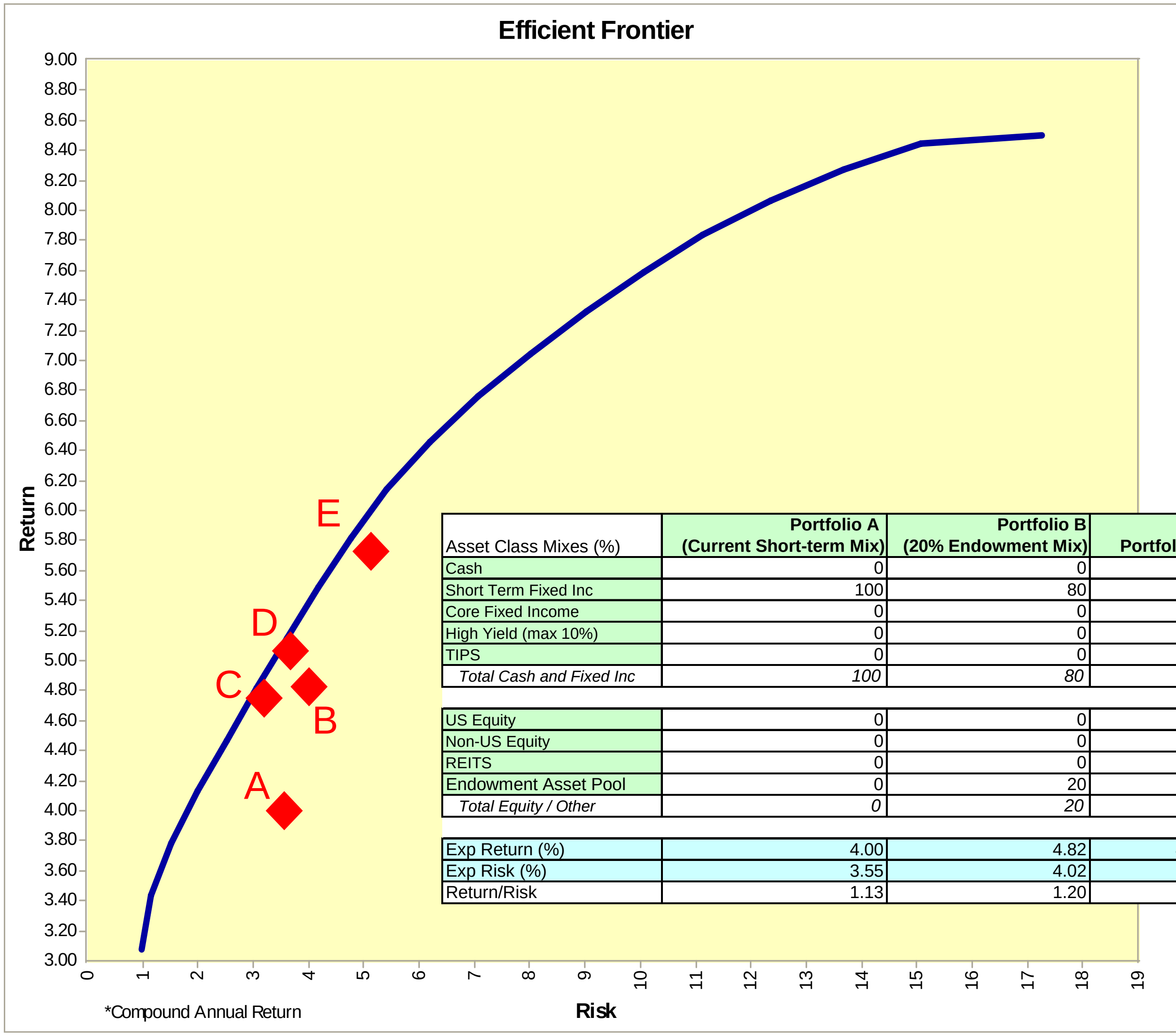
2. Develop various efficient asset mixes
   - Wilshire's analysis considers two broad alternatives
     - Investment of available funds in an asset mix consistent with that of the long-term endowment pool
     - Investment in a diversified mix of assets using low-cost index fund vehicles

3. Compare alternative asset mixes using stochastic simulation
   - Distribution of expected returns
   - Distribution of expected market values
   - Probability of expected outcomes
   - Value at Risk
   - Summarize results graphically

4. Evaluate the probability of satisfying fund objectives

* Information provided by University of Iowa identifies daily liquidity requirements of approximately $250 - $300 million thereby leaving approximately $400 million from other pools to be invested in pursuit of incremental returns

Efficient Frontier



Asset Class Mixes (%)	Portfolio A (Current Short-term Mix)	Portfolio B (20% Endowment Mix)	Portfolio C	Portfolio D	Portfolio E
Cash	0	0	40	30	20
Short Term Fixed Inc	100	80	0	0	0
Core Fixed Income	0	0	30	35	30
High Yield (max 10%)	0	0	5	10	10
TIPS	0	0	10	10	10
Total Cash and Fixed Inc	*100*	*80*	*85*	*85*	*70*
US Equity	0	0	8	8	16
Non-US Equity	0	0	2	2	4
REITS	0	0	5	5	10
Endowment Asset Pool	0	20	0	0	0
Total Equity / Other	*0*	*20*	*15*	*15*	*30*
Exp Return (%)	4.00	4.82	4.75	5.07	5.73
Exp Risk (%)	3.55	4.02	3.19	3.66	5.12
Return/Risk	1.13	1.20	1.49	1.38	1.12

- Various asset mixes are shown on the unconstrained efficient frontier.
- At higher levels of return, the optimizer utilizes certain asset classes such as high yield and non-US equity in amounts greater than appropriate for the nature of short term funds. This explains why Portfolio E is slightly below the frontier.

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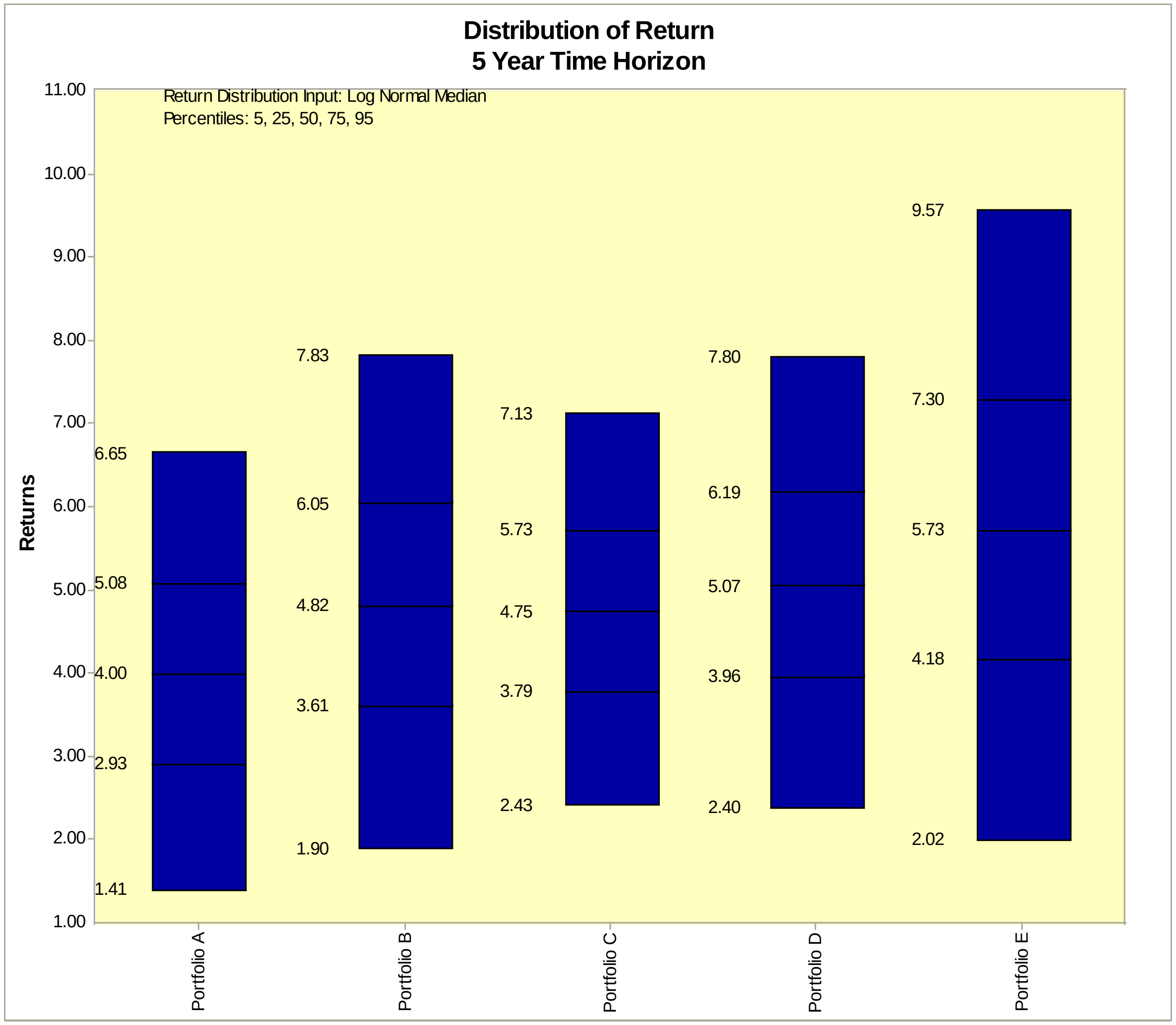
Distribution of Expected Returns – 60 Months



- Long-term return expectations provide rationale for broadening the asset class exposure of the operating funds
  - Increase level of return
  - Reduce downside risk in “worst case” scenarios (bottom 5% of outcomes)

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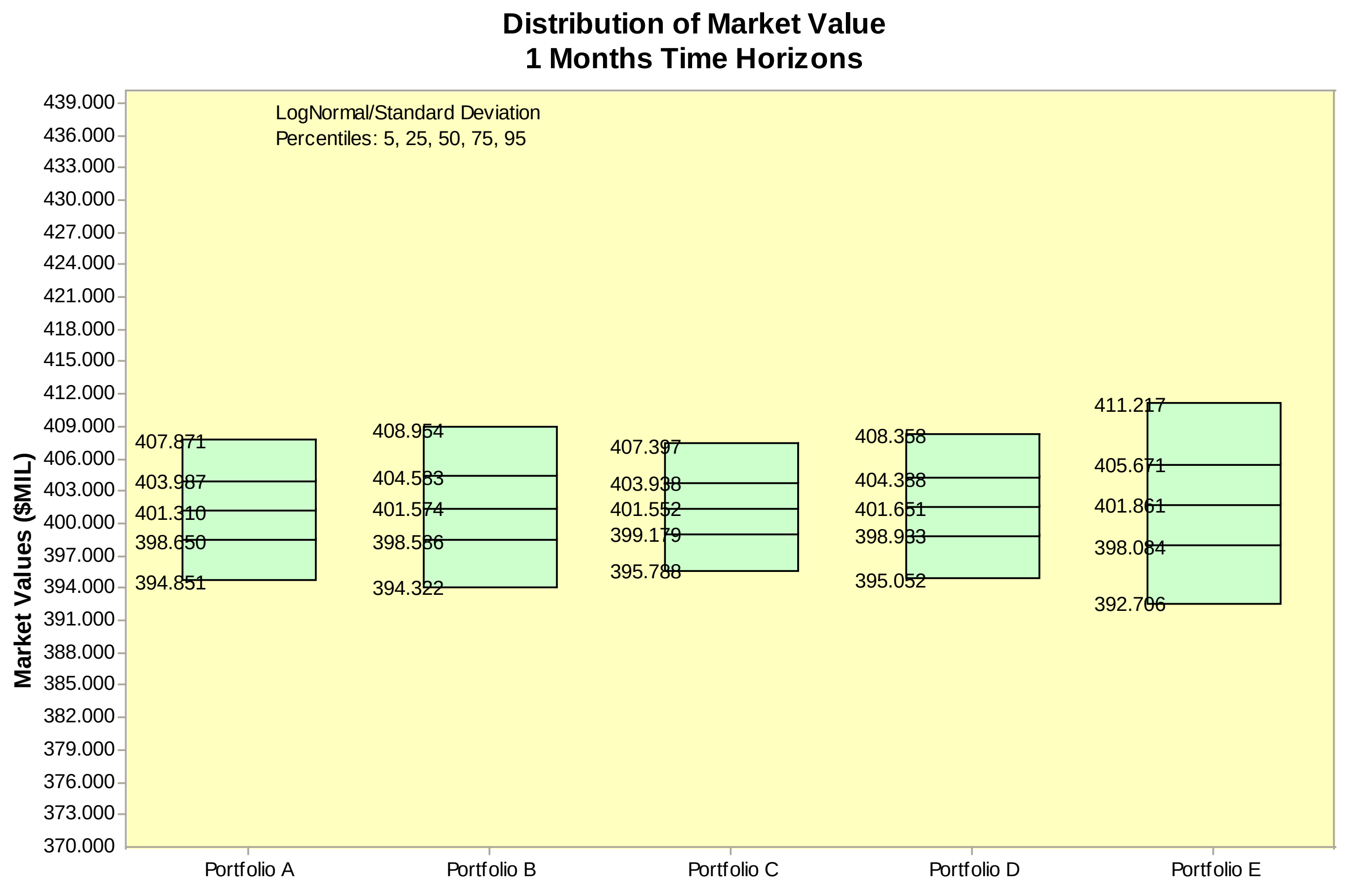
Portfolio Value at Risk – 1 month



Value at Risk Analysis
Confidence Interval 95%, 1 Months Time Horizons

In ($MIL)	Portfolio A	Portfolio B	Portfolio C	Portfolio D	Portfolio E
Beginning Market Value	400.000	400.000	400.000	400.000	400.000
Expected Market Value	401.310	401.574	401.552	401.651	401.861
Absolute Value at Risk	-5.149	-5.678	-4.212	-4.948	-7.294
Relative Value at Risk	-6.459	-7.252	-5.764	-6.599	-9.155

- Value at Risk analysis over short time horizons assists in understanding the magnitude and potential for loss due to market volatility

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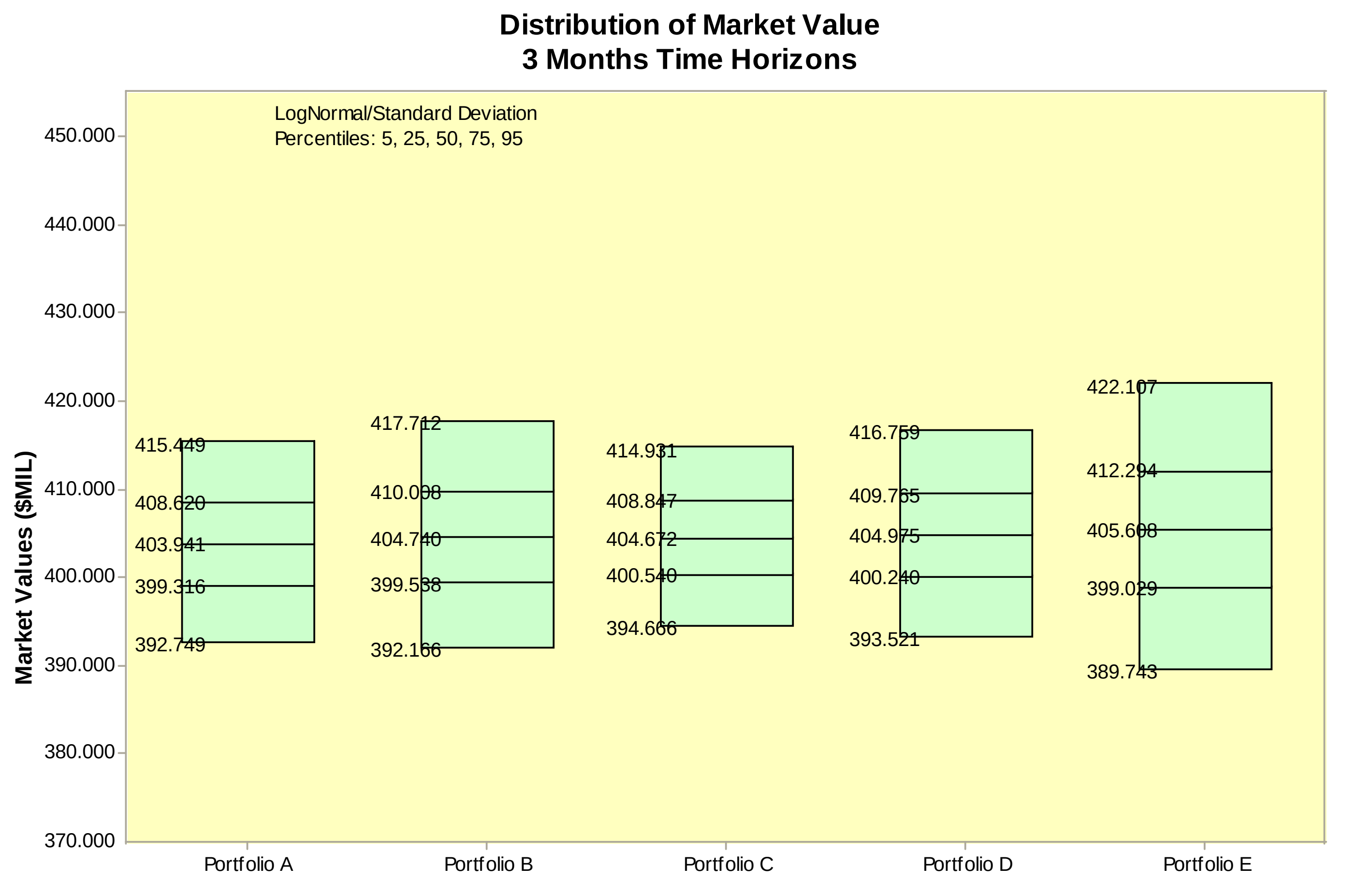
Portfolio Value at Risk – 3 months



Value at Risk Analysis
Confidence Interval 95%, 3 Months Time Horizons

In ($MIL)	Portfolio A	Portfolio B	Portfolio C	Portfolio D	Portfolio E
Beginning Market Value	400.000	400.000	400.000	400.000	400.000
Expected Market Value	403.941	404.740	404.672	404.975	405.608
Absolute Value at Risk	-7.251	-7.834	-5.334	-6.479	-10.257
Relative Value at Risk	-11.192	-12.574	-10.007	-11.454	-15.865

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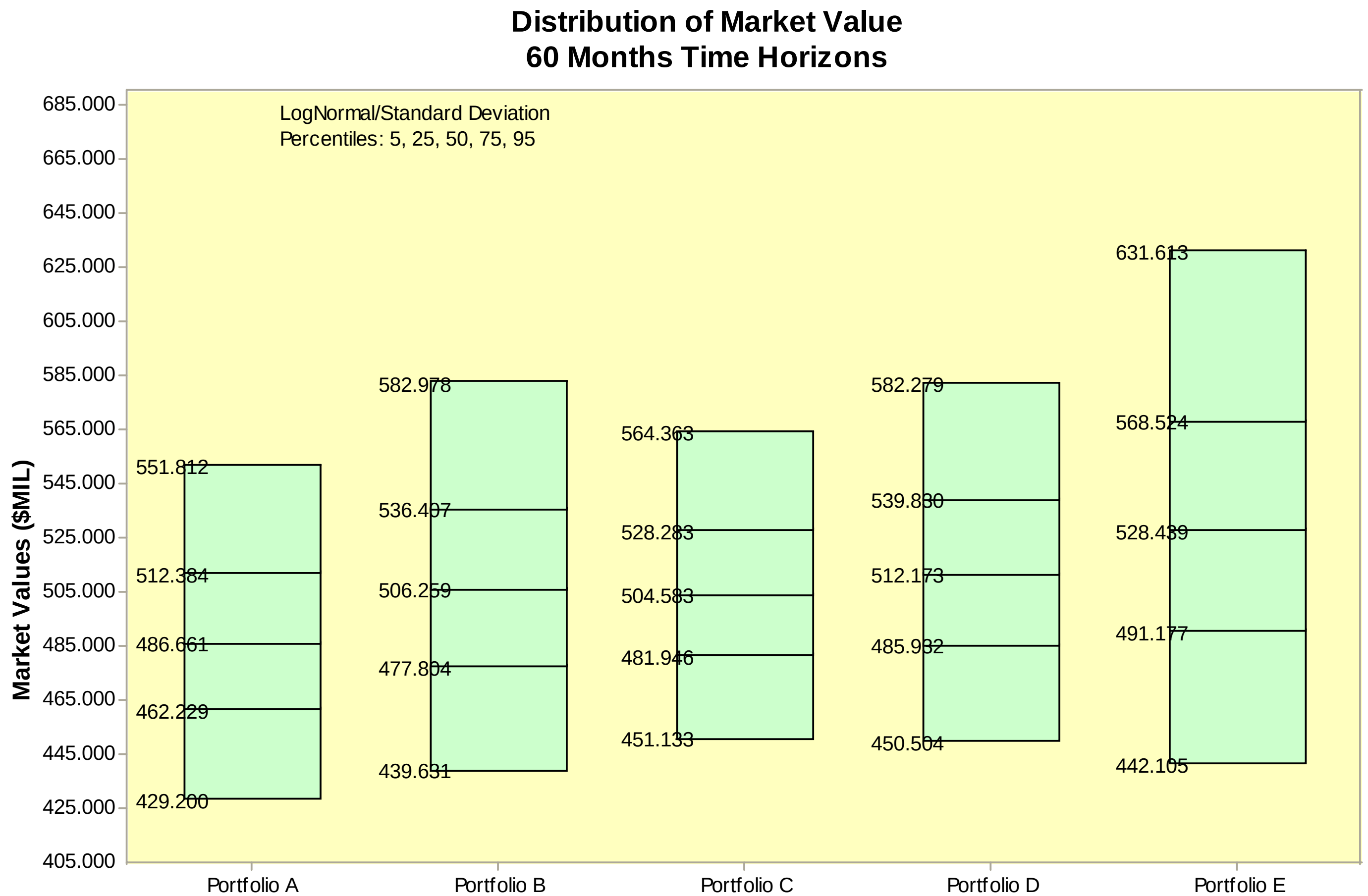
Portfolio Value at Risk – 60 months



Value at Risk Analysis
Confidence Interval 95%, 60 Months Time Horizons

In ($MIL)	Portfolio A	Portfolio B	Portfolio C	Portfolio D	Portfolio E
Beginning Market Value	400.000	400.000	400.000	400.000	400.000
Expected Market Value	486.661	506.259	504.583	512.173	528.439
Absolute Value at Risk	29.200	39.631	51.133	50.504	42.104
Relative Value at Risk	-57.462	-66.628	-53.450	-61.669	-86.334

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Observations

- Portfolio B demonstrates that investing a portion of short- and medium-term operating assets in the endowment's asset mix is less optimal than investing in the diversified mixes shown (Portfolios C, D and E). *Please refer to the efficient frontier on page 4.*
- When allocating to cash and core fixed income, the use of short-term fixed income becomes somewhat redundant and is eliminated through our modeling process.
- Portfolio C produces an increase in expected return of approximately 75bps compared to a portfolio comprised of 100% short-term fixed income (as shown by Portfolio A). It does so with less risk than the portfolio with only short-term fixed income. In addition, it provides the greatest level of downside protection among the asset mixes analyzed.

Recommended Mix

- Wilshire recommends adopting and implementing Portfolio C for the investment of non-endowment assets as appropriate.
- We further recommend utilizing the rebalancing ranges detailed below as a way to manage risk caused by market movements.

Asset Class Mixes (%)	Portfolio C	Rebalancing Range
Cash	40	+ / - 5%
Short Term Fixed Inc	0	na
Core Fixed Income	30	+ / - 4%
High Yield (max 10%)	5	+ / - 2%
TIPS	10	+ / - 2%
Total Cash and Fixed Inc	*85*	--
US Equity	8	+ / - 2%
Non-US Equity	2	+ / - 1%
REITS	5	+ / - 2%
Total Equity / Other	*15*	--

- Wilshire will work with University of Iowa to establish appropriate benchmarks.
  - Policy benchmark using index returns weighted according to the allocation percentages of the new strategy
  - Prior policy benchmark (Merrill Lynch 1-3 Year Government / Corporate Index) to evaluate value added by adopting the diversified pool strategy

Potential Implementation Vehicles – Vanguard Index Funds

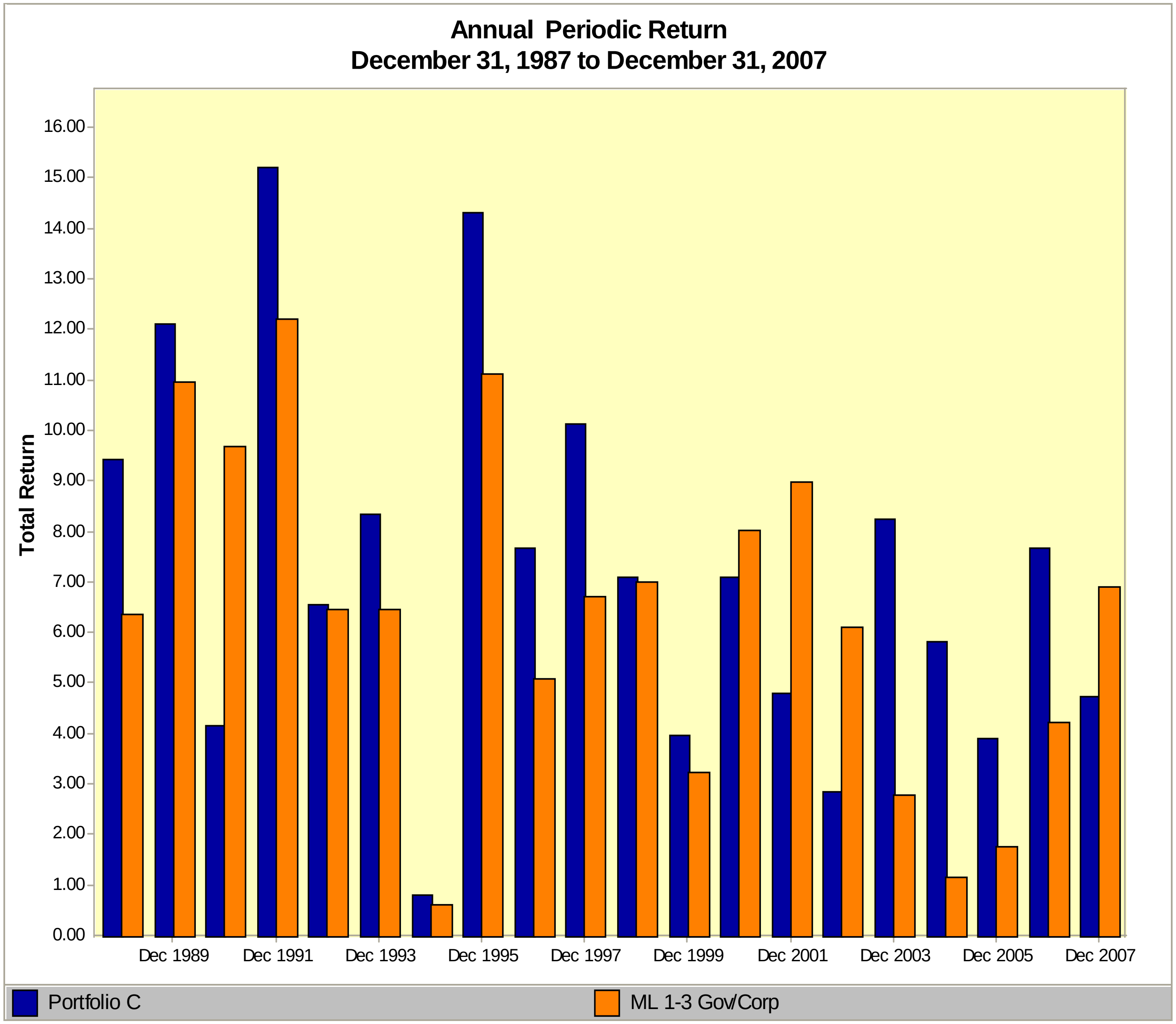
- Wilshire recommends implementation of the diversified pool approach utilizing low cost index funds.
- In asset categories where index funds are not offered by the investment manager, other low-cost funds may be considered.

Asset Class	Fund Name	Benchmark	Prospectus Net Expense Ratio (%)	Ticker
Cash	Vanguard Prime Money Mkt Fund Inst	iMoneyNet Average Inst. Money Market Fund	0.08	VMRXX
Short Term Fixed Inc	Vanguard Short-Term Investment-Grade Ins	Lehman 1-5 Year US Gov't/Credit Idx	0.07	VFSIX
Core Fixed Income	Vanguard Inst Total Bond Market Index	Lehman US Aggregate Bond Index	0.05	VITBX
High Yield	Vanguard High-Yield Corporate Adm *	Lehman US Corp High Yield Index	0.13	VWEAX
TIPS	Vanguard Inflation-Protected Secs Instl **	Lehman US Treasury Inflat Notes Idx	0.08	VIPIX
US Equity	Vanguard Inst Total Stock Mkt Idx Ins	MSCI US Broad Market Index	0.05	VITNX
Non-US Equity	Vanguard FTSE All-World ex-US Index Inst	FTSE All-World ex US Index	0.15	VFWSX
REITS	Vanguard REIT Index Inst	MSCI US REIT Index	0.10	VGSNX

* Actively managed by subadvisor (Wellington Management Company, LLP)
** Actively managed by subadvisor (Vanguard Fixed Income Group)

Appendix

Simulated Performance



Because Lehman US TIPS Index inception date is 9/30/97, the 10% TIPS allocation included in Portfolio C is allocated to Core Fixed Income.

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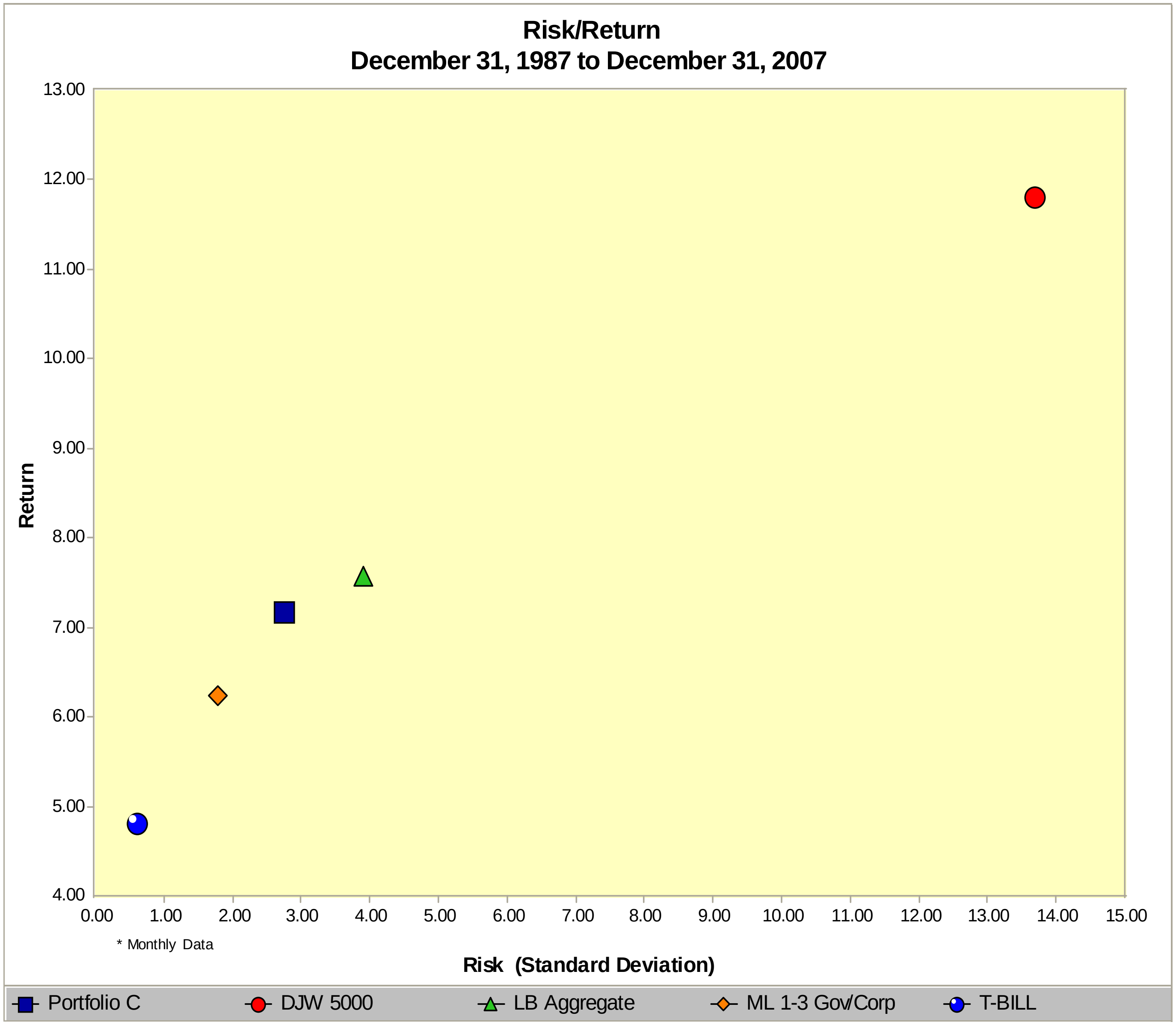
Simulated Performance



Because Lehman US TIPS Index inception date is 9/30/97, the 10% TIPS allocation included in Portfolio C is allocated to Core Fixed Income.

Asset Class Assumptions

Asset Class	Cash	Short FI	Core FI	High Yield	TIPS	US Equity	Non-US Equity	REITS	Endow. Mix
Exp Return (%)	3.00	4.00	5.00	7.00	4.00	8.25	8.50	5.75	7.70
Exp Risk (%)	1.00	3.55	5.00	10.00	6.00	16.00	17.25	13.00	11.10

Correlation

Cash	1.00								
Short FI	0.43	1.00							
Core FI	0.20	0.75	1.00						
High Yield	0.00	0.24	0.28	1.00					
TIPS	0.15	0.20	0.20	0.01	1.00				
US Equity	0.00	0.20	0.29	0.48	-0.05	1.00			
Non-US Equity	-0.09	0.00	0.04	0.37	0.04	0.83	1.00		
REITS	0.00	0.00	0.15	0.30	0.15	0.35	0.28	1.00	
Endow. Mix	0.00	0.25	0.37	0.52	0.01	0.98	0.87	0.40	1.00

- Wilshire’s asset class return, risk and correlation assumptions are developed based on 10-year forward looking expected rates of return and historical risk and correlation, adjusted to incorporate recent trends.
- Return expectations represent a passive investment in the asset class. They do not reflect value added from active management.